More than Just Lab Partners: Women Scientists and Engineers Married and Partnered to Other Scientists and Engineers

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Abstract

More than Just Lab Partners:
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Brianna Blaser

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Women Studies

In spite of the "two-body problem" many academic women scientists and engineers are married and partnered to other academic scientists and engineers. Some information is known about the prevalence of these relationships and resulting issues surrounding the job search, and there are many biographies of scientists partnered to other scientists. This research asks previously unexplored questions about which women scientists are more likely to partner with other scientists, why these relationships form, and the implications these relationships have for women scientists personal and professional lives. The project utilizes data from the 2000 United States Census and 15 in-depth interviews to explore women scientists' and engineers' experiences in their relationships with other scientists and engineers. The quantitative component suggests that among partnered, female academic scientists, non-citizens are significantly more likely to partner with academic scientists than US-born citizens. Among US-born citizens, women living in metropolitan areas are significantly more

likely to partner with academic scientists than those living in non-metropolitan areas. The interviews, meanwhile, illustrate that a relationship with another scientist impacts a woman both professionally and personally. Participants reported that their interest in science affected who they dated and 14 of the 15 women met their partners in a professional setting. In their personal lives, the women scientists reported competition with their partners and leading narrowly focused lives; yet they valued their partners' informed understanding of their passion for science and the demands of academic science careers. With regard to their professional lives, women reported that their relationships created difficulties with regards to the job search and their travel schedules to conferences and fieldwork. They also reported professional benefits from their relationships; almost all of the women collaborated with their partners either formally or informally and noted that their relationships helped them to network and that their partners served as mentors. In addition, they saw science as a way of thinking, and their families often participated in science activities at home – thus science was not only a career but for many of them, a lifestyle that extended from the home to the lab.

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DEDICATION

To my family and to Noah

INTRODUCTION AND LITERATURE REVIEW

As an undergraduate math major, many of the female mathematicians that I met were married to male mathematicians. Both of the women in my university's math department had husbands in the department – one of them had even married her thesis advisor. At my summer research position, there was a similar pattern of women married to men in the department, but there were also two women of color in the department that remained single. At the same time, I found myself dating other math majors and enjoying our conversations about math. Math and romantic relationships became linked in my mind.

Issues of marriage and partnership between scientists are ever present within science and engineering. The pervasiveness of these relationships, as well as the existing literature on women in science, suggest questions about romantic relationships between scientists. Why do so many scientists form romantic relationships with other scientists? What sorts of implications do these relationships have for scientists' personal lives? What sorts of implications do these relationships have for scientists' professional lives? What can we learn from these relationships about how science is practiced and to assess the needs for changes to those practices? How do these relationships speak to the blurring of boundaries between our personal and professional lives? Although some research has considered dual career couples in the sciences, for the most part these sorts of issues have not yet been addressed outside of biographies of women scientists.

Through examining information about marriages and partnerships between scientists, as well as the existing literature in feminist science studies, the importance of studying marriages and partnerships between scientists will become clear. In my literature review, I will consider five main areas:

1. I will consider the existing literature on marriages between the scientists. For the most part, this literature provides us with statistics about the presence of marriage between scientists, frames this issue as an important issue for women, and considers hiring practices for dual career academic couples, but this literature has not looked in depth at how marriage to another scientist affects a scientist's career or personal life.
2. I will also consider how marriage and relationships between scientists have been portrayed in the history of science and in contemporary biographies of women scientists.
3. I will also discuss how my research fits into the existing literature on the socialization of scientists.
4. Furthermore, I will touch on how my work fits within the more general literature on mate selection and marriage.
5. Finally, I will address how my work fits into the existing theories about couples within the same field.[1]

[1] Although network theory might also be used to address the questions I have posed, it is beyond the scope of my project. For more information about network theory, see Granovetter's (1973) "Strength of weak ties."

My research touches on issues concerning marriage, personal lives, the culture of science, and the process of scientific knowledge production that are already part of feminists' conversations. My research shows that women scientists' relationships with other scientists are both interpersonal relationships as well as professional relationships. Exploring these various threads will show the importance of studying academic couples within the sciences with regards to both scientists' personal lives and professional lives and how it relates to the existing literature.[2]

Existing Information on Marriages and Partnerships in Science

Within the existing literature on marriages between scientists, four distinct themes emerge. First of all, there is a fairly large population of women scientists married to other scientists.[3] Second, I will show that these relationships are an important issue for women. Third, many women in the sciences remain single for their entire lives. Finally, there are large gaps in our knowledge about these relationships. The extent to which women scientists either marry a scientist or remain single partnered with the lack of research on women's relationships speaks to the importance of research on women scientists' relationships.

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[2] I am assuming that the reader has an understanding of the general structure of academic careers and the role of faculty in colleges and universities. For more information on these topics, see Hall (2007), Schuster and Finkelstein (2006), Gappa, Austin, and Trice (2007), or Glazer Raymo (1999).

[3] I am interested in both marriages and partnerships (gay and straight) between scientists. The literature, however, most often reports on marriage without considering other forms of partnership. For this reason, I refer to both "marriages" and "partnerships" within this paper. Although I recognize that there are differences, especially in terms of the benefits they allow, I will use "marriage" and "partnership" somewhat interchangeably. In the literature I reference, however, a "marriage" is taken to be a heterosexual relationship unless otherwise noted.

Statistics on Women Scientists' Partnerships

Many studies have examined the extent to which women scientists marry or partner with other scientists. Approximately 70% of female physicists marry other scientists and 80% of female mathematicians are married to other mathematicians (Gibbons, 1992).[4] More than sixty percent of women with PhDs in science have husbands with PhDs in science (Sonnert & Holton, 1995). Given the disparate numbers of men and women in the sciences, however, male scientists do not marry female scientists at such high rates. Xie and Shauman (2003) found that 14.7% of women with science or engineering PhDs are married to men with science or engineering PhDs and 16.9% of science or engineering PhDs are married to other PhDs. The numbers for men with science or engineering PhDs are 2.7% and 4.7%, respectively. According to Sue Rosser (2004b) 60% of women scientists are married to male scientists and, whereas 68% of female physicists are married to other scientists, only 17% of male physicists are. These data further suggest that women in the sciences are much more likely to have scientific or academic spouses than men in the sciences. A poll of American Chemical Society members under 40 found that 35.9% of the women were married to other scientists and 27.3% of the men were (Heylin, 2001).

The most recent figures on these relationships comes from the National Academies' *Beyond Bias and Barriers* (Committee on Maximizing the Potential of

[4] I have not located similar numbers indicating the extent to which scientists cohabit with other scientists. Given that cohabitation has been on the rise since the 1990's (Coontz 2005), one expects that a significant number of scientists, especially young scientists and those in same sex relationships, are cohabiting either with other scientists or with non-scientists.

Women in Academic Science and Engineering & Committee on Science, Engineering, and Public Policy, 2007), which shows that across STEM fields, women are more likely than men to have a partner in STEM (see Figure 1).[5]

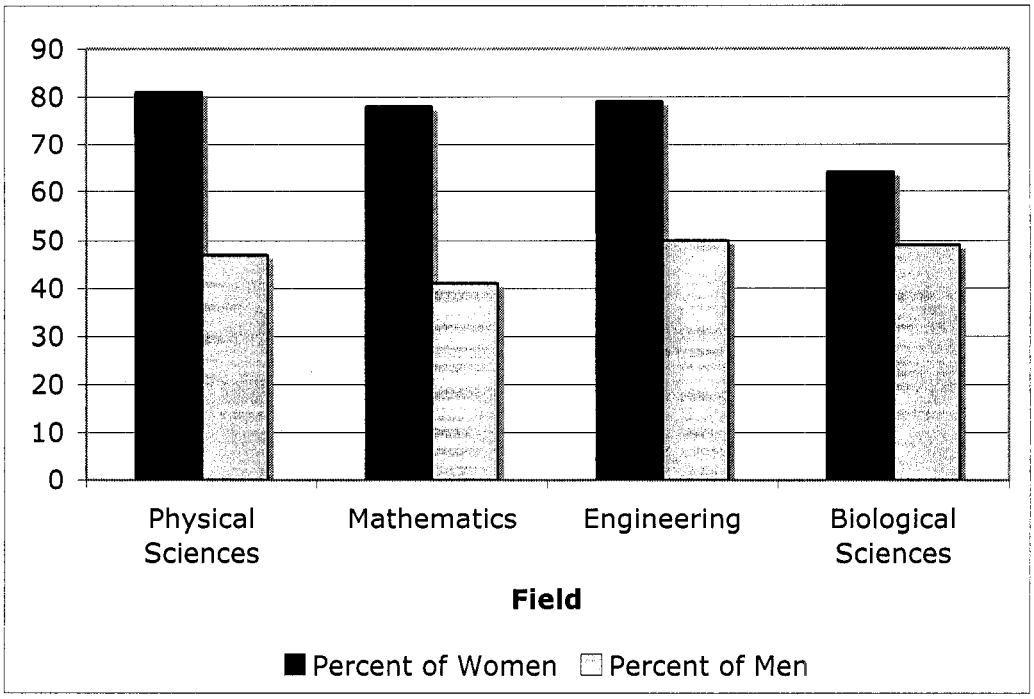

Figure 1 Percent of married scientists whose spouses are scientists and engineers. (Source: Committee on Maximizing the Potential of Women in Academic Science and Engineering & Committee on Science, Engineering, and Public Policy, 2007)

In *Primate Visions*, Donna Haraway (1989) comments about marriage patterns she had observed among primatologists while examining the field of primatology. She counted 65 couples publishing together in a field with only a few hundred authors. According to Haraway, then, almost half of all primatologists are married to other

[5] The authors of the report got their data from the National Science Foundation's 1999 *Survey of Doctoral Recipients* (SDR). The only SDR question pertaining to partner's field of study asks whether the respondent's partner has a job that requires a bachelor's degree in science. So, this chart can be taken as an indicator of PhD scientists married to scientists with a bachelors or higher level degree.

primatologists and writing with their spouse.[6] Of the 15 female members of the National Academy of Science born before 1920, 8 (53.3%) are married to other members, as are 5 of the 24 (20.8%) women born in the 1920's and 3 of the 15 (20%) born in the 1930's. Although these are small numbers, among members of the National Academy, not only are the women married to other scientists, but they are married to other high-profile scientists (Wasserman 2000).[7] Furthermore, Mary Frank Fox (2005) found that both men and women in the sciences are more likely to marry a scientist the second time they marry. Fox's (2005) research shows that overall 59% of women scientists were married to other scientists and 17% of men scientists were married to other scientists. In first marriages, the numbers are 56% and 14% compared with 63% and 32% in subsequent marriages of women and men married to other scientists. Furthermore, these rates of marriage are much higher than what is found in other disciplines; across the academy, 35% of men and 40% of women are married to other academics (Wolf-Wendel, Twombly, & Rice, 2000)[8]. Furthermore, these couples are part of a large number of dual career couples in the US; in the mid-

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[6] From Haraway's observations, it is not immediately obvious the proportion of male or female primatologists partnered with other primatologists nor does she comment on the primatologists married to other scientists but not publishing with them, however, her observations point to the fact that marriages between scientists are common across scientific fields and suggests that primatology may be a field with an extremely high number of marriages among its ranks.

[7] It should also be noted that some of the women in the academy are married to scientists who are not academy members. I point to the number of female academy members married to other academy members, however, because it points to the extent to which high-profile women in the sciences are married to high profile men in the sciences.

[8] Throughout this paper, I point to information about couples within academia as well as those among scientists for multiple reasons. Not only are many scientists in the academic system, but also at times there is no information about scientists while we have more complete information about academics in general. Clearly, we would expect there to be differences between scientists and academics, but information regarding academics can give us a sense of what sort of patterns we might expect to see for scientists more specifically.

1990's, 60% of marriages were comprised of dual income earners and only 30% were traditional marriages with one income earner[9] (Yalom, 2001).

Marriage to Another Scientist as an Issue for Women

Many studies point to the high rates of inter-marriage for women in the sciences and academia and frame this as an important issue for women because of the high proportion of women that it affects, the extent to which women benefit less from marriage than men, and the difference in rates of employment between married men and women. One survey of women PhD recipients indicates that while over 61% of women with PhDs are married to men with PhDs, JDs, or MDs, only 27% of men with PhDs are married to women with such degrees (Nerad, 2004). Because the proportion of highly educated women married to highly educated men is higher than that of such men married to such women, the issue of marriage between academics becomes a women's issue (Nerad, 2004). Furthermore, Bernard (1982) found that, in general, men benefit from marriage in ways that their wives do not; men receive both mental health and physical health benefits from being married. Bernard's findings suggest that marriage in general is an issue for women because women experience fewer benefits from marriage. Assuming that this finding applies to scientists, would mean that male scientists would benefit mentally and physically from marriage to another scientist whereas a female scientist would not experience these benefits to the same degree. Similarly, marriage and children are associated with higher rates of full time employment for male scientists, but lower rates for female scientists (Long, 2001).

[9] The remaining 10% of marriages had either no income earners or one part-time income earner.

Again this means that marriage is an issue for women scientists because of how it affects women's employment.

Moreover, despite the fact that most students, across fields, assume that they will be able to accommodate both work and family (Hertz, 1986), balancing work and family is a large concern for women in the sciences. As Peggy Orenstein (2001) argues, the message that "you can be anything" collides with "you can't have it all" (97). Many women scientists are concerned about issues of balance (Monosson, 2008). Women scientists who have won either POWRE or Clare Booth Luce awards consider balancing family and career to be their most significant challenge (Rosser 2004a, Rosser and Daniels 2004).[10] Sears (2003) and Ginther and Kahn (2006) also find that women in science and engineering cite balance as a concern. Jerry Jacobs (2004) argues that academics' long hours "make it especially difficult for responsible and engaged parents to become members of the academy" and because women often take on more parenting responsibilities than men, this is "especially challenging to mothers" (4). Furthermore Fassinger, Scantlebury, and Richmond (2004) found that women chemists point to the importance of both work and family in their lives, yet these women argue that family is more important. While many studies suggest that women find conflict between a career in science and a family, Ferreira (2003) finds that men report looking for wives who are less career-oriented. One man in her study

[10] Some view family issues as being external to a woman's career. For example, Messing (1995) found that women factory workers noted stress as their biggest health risk yet researchers dismissed their concerns because stress was "periphery." Because stress was important to these women, however, points to the need to study it and the extent to which it is tied to women's careers. Likewise although balance may seem to be an issue external to women scientists' careers, the extent to which they cite it as an issue for them points to the need to investigate it.

even goes so far as to say that his wife will *not* be a chemist. In other words, male scientists are looking to avoid tension between their personal and professional lives by avoiding marriage to someone as dedicated to a science career than they are. Balance is an issue not only because it affects women's personal lives, but according to a study of academic biologists, problems with balance may affect women's professional careers as well (Scholer, 1998).

Even young girls considering careers in science are aware of the tension between a career in science and raising their children (Kubanek & Waller, 1996; Seymour and Hewitt, 1997). These issues may be exacerbated by the extent to which people are generally busier now than in the past, leaving little time for family or leisure (Hochschild, 1997). Peggy Orenstein (2001) talks about the tension between personal and professional life. She questions the value of a high power job if you cannot have a home life and points to women like one chemist who says she "wouldn't want to have a child if [she] wasn't going to spend time with it" (106). Although women in other fields may face similar issues, balance may be more complicated for scientists than for some other professionals. Perricone (2007), for example, says "who picks up the kids while I'm at work in the city?" might become "who picks up the kids while I'm at a conference in Japan?" Furthermore, these issues may not be as pressing for men as they are for women. Rubin (1983) argues that men identify themselves with their careers whereas women identify themselves with both their careers and their home life. Moreover, women are stereotypically considered to be more home-oriented than men are (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz 1972).

Balance is not the only personal difficulty that women scientists experience as a result of their career; the so-called "two-body problem" borrows a term from physics to refer to the difficulty that two married scientists, or "bodies," have when trying to find two jobs in the same geographic location. Women scientists cite the two-body problem as a significant challenge (Rosser 2004a, Rosser and Daniels 2004). Similarly Ivie, Czujko, and Stowe (2001), in their survey of women scientists worldwide, found that when asked about negative effects of their marriages on their career, many women cited the difficulties of the two-body problem.

These studies fail to provide a lot of other important demographic information about couples in the sciences. For example, to what extent does the proportion of women scientists and engineers partnered to other scientists and engineers differ across age groups? What occupations have more or fewer scientists married or partnered to other scientists? How do women who marry or partner with other scientists differ from those who do not in terms of their ethnic or racial background? Are women in same sex relationships more or less likely to be partnered to other scientists?

Furthermore, marriage between scientists is an important issue for women because academic women are more likely to sacrifice their careers for their spouses than academic men are. Whereas 70 percent of married male faculty members had wives who have moved for them, only 23 percent of the married women have husbands who have done the same (Williams, 2000). Furthermore, whereas 46 percent of faculty wives had interrupted their careers for their husbands, only 21

percent of faculty husbands had (Williams, 2000). All of these things indicate that marriage affects, and at times disadvantages, female scientists and academics more than it does male scientists and academics. Because of this, it is important to study such relationships in order to determine how they affect both such couples and broader issues regarding diversity in the scientific workplace.

Women Scientists Remaining Single

Another theme that arises when looking at marriages of women in the sciences is that many women in the sciences choose to remain single rather than marry. Whereas 66% of female, doctoral-level scientists and engineers are married, 83% of their male counterparts are (Levine, 2006). Indeed, six of the fifteen women that Sharon Bertsch McGrayne (1998) profiles in her book *Nobel Prize Women in Science: Their Lives, Struggles in Momentous Discoveries* remained single their whole lives. Xie and Shauman (2003) found that 25% of women scientists aged 25 to 64 are single, 63.5% are married, and 9.5% are divorced. The numbers for men are 15.7%, 78.2%, and 5.4%, respectively. These data clearly indicate that men in the sciences are significantly more likely to have a spouse than women in the sciences. Xie and Shauman suggest that so many women in the sciences, as compared to women in general, are unmarried because they do not need the financial support that they would receive from a husband. In graduate school, women in science are less likely to marry or have children than men in the sciences (Long 2001). Glazer-Raymo (1999) finds a similar pattern of remaining single among university presidents. She notes that in 1995 whereas 93% of male college presidents were married, only 48% of the female

college presidents were married. Overall, fifteen percent of women academics will never marry compared to only 8% of male academics (Wolf-Wendel, Twombly, & Rice, 2003). Finally, research suggests that the higher a woman's IQ, the less likely she is to marry (Taylor et al., 2005). Ivie, Czujko, and Stowe (2001) found that, one fourth of the women physicists in their worldwide survey had never been married. The high proportion of women scientists partnered to other scientists coupled with the high proportion of women scientists who remain single means that very few women scientists are married to non-scientists. Crane (2003), an oceanographer, argues that female oceanographers are expected to forgo personal/romantic relationships. Presumably this has to do with the demands of fieldwork. Similarly, Nancy Hopkins, well known for her part in the MIT report on women described herself before her recent wedding as a "nun of science" and claims "that's what was required for women of [her] generation to be taken seriously" (Sipher, 2007). Linda Shepherd (1998) claims that historically this was the case, that women scientists "conducted themselves like nuns in white lab coats" (44). This begs questions about why women in the sciences find themselves facing one of two options: either marrying another scientist or "marrying science."

Ivie, Czujko, and Stowe (2001) surveyed women physicists around the globe about multiple aspects of their career. They noted that women physicists in developing countries were more likely to be married than those in developed countries. This statistic points to the notion that marriage patterns likely differ between countries, just as the culture of science and representation of women in the

sciences does. In other countries, women scientists might not face the same pressures to remain single.

Unexamined Questions

Although, as we will see, there are many historical examples of marriages between scientists, recently, the number of such marriages has skyrocketed. This increase has occurred because of the increase of women in the academy, in addition to increasing rates of marriage among women with academic careers (Miller-Loesi & Henderson, 1997). This increase of academic marriages has led to much research considering the current situation of dual career couples within the academy generally. For example, studies have examined whether universities have addressed the two-body problem by researching policies for recruiting and retaining dual career couples and the effects of these policies (Wolf-Wendel, Twombly, & Rice 2000). Others have highlighted the new options available to these couples like split positions (de Wet & de Wet 1997) or the difficulty of finding two jobs in the same locations (McNeil & Sher 1998). Indeed, research on recruiting and retaining dual career couples in the sciences is important given that "not having a strategy for accommodating dual-career couples can affect a department's ability to recruit women" (The Earth Institute ADVANCE Working Group on Science & Technology Recruiting to Increase Diversity, 2005). In other words, because of the number of women scientists married to male scientists, without strategies to accommodate dual-career couples, it is difficult to recruit women to a department. Of course, recruiting couples also helps a department to recruit men as well.

Others have examined the career paths of academics and considered how this relates to their personal lives in terms of partners and careers. For example, women in art history with academic spouses are more likely to receive tenure than those with spouses in the business, government, or non-profit sectors (Sadrozinski, Nerad, & Cerny, 2003). This sort of research highlights another theory that is oft mentioned in the literature on women and academic careers: having a university career depends on family support, the type of support that a husband stereotypically receives from his wife (Hochschild, 1974).

Research has also assessed the productivity of academics in partnerships. In general, academics in marriages to other academics have high productivity (Wolf-Wendel, Twombly, & Rice, 2003). This research has found that partners collaborate in different ways, both short term and long term, and that they benefit from the feedback that they receive from their partner (Creamer, 1999). Indeed, for these couples, collaboration can become a way of life, blending their personal and professional lives (Creamer, 2001). Research by Bellas (1997) suggested that those partnered with another academic tend to have more collaborations than other academics – both with their partners and with other collaborators. Women's male collaborators, meanwhile, are likely to be their spouses, which may or may not be advantageous because these women are often seen as riding their more senior spouses' coattails with funding and networking (Ferber, 2003).

Mary Frank Fox's (2005) research on women's personal relationships and productivity suggests that the relationships between women's marriages, children and

productivity are especially complicated. She finds that regardless of the occupation of their partners, women's productivity is highest if they are married or cohabitating rather than single or divorced or separated, and women in subsequent marriages, who are more likely to be partnered to other scientists, are twice as productive as those in first marriages (Fox, 2005). Fox also found that the women with the highest productivity were those married to nonacademic scientists or to men in professions traditionally gendered female yet women in subsequent marriages were particularly productive if their husbands were academic scientists. She also found that women with pre-school aged children were more productive than women with school aged children. For men, productivity is similar between first and subsequent marriages and is unaffected by the occupation of their partner.

Others have considered the situations that unmarried academic couples, of the same sex and opposite sex, have faced. Miller and Skeen (1997) have found that although many schools give domestic partners benefits, they are less likely to help unmarried couples with other issues that arise for dual career couples. This means that dual academic couples that are not married face greater challenges when relocating because they are not given the same assistance in finding employment for their partner.

A lot of research that considers marriages between scientists or academics looks at hiring dual career academic couples. A large number of hires in academia are dual career hires (Wolf-Wendel, Twombly, & Rice, 2003). Of course, scientists who are looking to find a position in the same geographic area as their spouses are attracted

to such possibilities. Moreover, institutions are eager and willing to hire in dual career situations because of the competition to recruit good faculty (Wolf-Wendel, Twombly, & Rice, 2003). Dual career hires, of course, are not perfect. Some spousal hires, or individuals who were offered a position because an institution wanted to hire their spouse, tell stories of living on "soft money" from year to year and not being well integrated into their department. Others criticize the practice, viewing it as a new form of "affirmative action," which creates a buddy system that disrupts the university's meritocracy (Wilson, 2001). The issue of discrimination against or negative attitudes toward a second hire may affect women more than men as couples often solve conflicts between a husband's and a wife's career to favor the husband's career (Swarbrick, 1997) making the woman more likely to be the "tag along" spouse.

There are two glaring gaps in the questions addressed by research on couples in the sciences: how do these relationships affect couples in the sciences in their personal and professional lives and why are such relationships so common. As Sweet and Moen (2004) argue, little is known about the experiences of academic couples other than how they achieve and sustain two successful careers. Oullette (2007) and Goldman (2006) also argue that more research is needed on dual career couples in the sciences. Angela Ginorio (2001) argues that women in science are most interested in: "gaining equal access to science, gaining resources once they were inside, and in proving that women could do science" (17). In many ways, the research that has been done on couples in the sciences mirrors some of these topics in that it has been

particularly concerned with couples' employment. This leaves many unanswered questions, however. Some of these will be addressed in my research.

Focusing specifically on couples in the sciences is important not only because more marriages occur between female scientists and other scientists than across other disciplines within the academy, but also because science careers are often unique in that they often require a scientist to spend time in the lab or field, away from her family. Other academic careers are more portable allowing work to be accomplished in a variety of locations. It also it is important to examine why so many female scientists choose to marry other scientists. Analysis of this issue will shed light on the culture of the scientific community in general.

Why These Relationships Form

Science has been referred to as a "greedy institution" because of the level of commitment that it requires from participants (Grant, Kennelly & Ward, 2000; Hall, 2007). The high rates of marriage between scientists may be a symptom of this because, through these marriages, scientists can have science in their interpersonal relationships as well as other aspects of their lives. Scientists married to or partnered with non-scientists, on the other hand, cannot talk and share their work as easily because of the complex and jargoned nature of science, which makes it hard to communicate about with non-scientists (Gusterson, 1996). So, partnering with a scientist allows a woman scientist to talk to her partner about her science and, in turn, allows her to devote more time to thinking or talking about her science.

There are other reasons that women in the sciences might seek relationships with other scientists. Marriages between academics give women an advantage over single women because of their greater access to academic networks, information, and social support (Astin & Milem, 1997; Tang, 2006). According to Creamer (2001), for women scientists, marriage to another scientist may compensate for the social stigma of deviating from conventional norms of femininity by becoming a scientist in the first place. According to Ellen Messer-Davidow (2002), some women scientists find it difficult to claim an identity both as a woman and as a scientist. Marrying a scientist may be a way for women to have both of these identities. Similarly, these marriages might occur in such high numbers because scientists value people who understand science.

It is important to study relationships between scientists because of what it can tell us about the scientific workforce more broadly. For example, there may be ways that being partnered with another scientist can help one or both members of a couple be more successful in their own scientific careers. This certainly is suggested by the high number of women in the National Academies of Science married to other members of the Academies (Wasserman, 2000). Furthermore, three of the women who have won a Nobel Prize in Science have shared the prize with their husbands – Marie Curie, Irene Joliot Curie, and Gerty Cori (NobelPrize.org, 2007).[11] If partnering with a scientist is correlated with success in science, it is important to consider what leads to this success. Is it the support that they receive from their

[11] Indeed, according to the same website, there is only one other couple where both partners won a Nobel Prize -- Alva Myrdal won the Peace Prize and Gunnar Myrdal won for economics.

partner at home? Or in the workplace? Is it somehow having a larger science network or being better integrated into the scientific community because they have a partner in the sciences? Once we understand why a partnership with another scientist can help a woman (or man) in her (or his) career, we may find ways to help scientists in general succeed. For example, if women in relationships with scientists report benefiting from them because it has helped them become better integrated in the scientific community, it may point to a need to help scientists with such integration. Similarly, if women scientists partnered to other scientists feel that they succeeded because their partners understand the demands of their jobs, it could point to a need to help non-scientist spouses understand and accept their partners' careers or a need to reexamine the demands of scientific jobs. Indeed, if scientific jobs are so demanding that scientists have difficulty not only with balance but also with being accepted by non-scientists, it is a sign that scientific jobs may need to be changed in order to be part of a balanced lifestyle. Ultimately, this may help to increase the proportion of women, and diversity overall, in the sciences.

Finally, the feminist project values studying individuals' personal lives. Indeed, according to Evelyn Fox Keller (quoted in Ellen Messer-Davidow, 2002), "Feminist thinkers recognize the conjunction of personal and political as more than an aphorism: they see it as a method... In short, the logical extension of the personal as political is the scientific as personal" (24). Viewing scientists as individuals with personal lives is important because it allows us a better understanding of the political

issues at stake for scientists. Looking at all aspects of scientists' lives, including their romantic relationships, can help to do this.

Looking at Women Scientist's Romantic Lives

Kohlstedt (2004) argues that, "studying the historical biographies of women scientists makes the presumed division between personal and professional less sharply contrasted and reinforces our post-modern understanding that each life is, indeed, heterogeneous in its construction and multiple in its identities" (6). Studying relationships between scientists, especially through biographies and history, helps us to see the artificiality of the boundary between the personal and professional in these individuals' lives. Looking at the stories of women married to or in relationships with other scientists, both historically and in the present day shows the importance of studying marriages between scientists because of how these women have been and are affected by their marriages. Similar information can also be gained by considering women scientists' experiences with dating.

Women Scientists' Marriages in the Past

Historically, it was common for husband and wife to work together; be it on the farm, in the store, or elsewhere, many occupations required the labor of both spouses (Coontz, 2005). Indeed, the phenomenon of marriages between scientists is not new. After all, Marie Curie, the only female scientist that most people can name, married scientist Pierre Curie and shared her first Nobel Prize in 1903 with him. In the nineteenth century, collaboration with a mate was a way for women to enter the

sciences unobtrusively (Creamer, 2001; Ogilvie, 1989). Likewise, it was not uncommon for astronomer husbands and wives to work together (Schiebinger, 2008). These early scientist-wives were often able to hold jobs at the same universities as their husbands; however, their positions were often of low prestige and low pay (Rossiter, 1982). By the beginning of the twentieth century, however, it was difficult for married women to find jobs (Rossiter, 1982, 1995; Tolley, 2003). Rossiter (1982) suggests that married women faced discrimination during hiring, especially during the depression years, keeping the number of employed and married women scientists low. The belief was that these women's husbands should be able to support them. Anti-nepotism rules also meant that marriage brought unemployment to women in the sciences. Because many married female scientists had scientist husbands, these rules prevented them from finding employment. Many of these women were relegated to being their husbands' assistants or working in unpaid positions. Both Maria Goeppart-Mayer and Gerty Cori, future Nobel Prize winners, found themselves in such positions for extended periods of time (Dash, 1973; McGrayne, 1998; Rossiter, 1982).

Perhaps in part because of anti-nepotism rules and their impact on women, some women scientists chose never to marry. This includes many famous women in the sciences including such noted women as Rosalind Franklin, whose images of DNA led to the discovery of the double helix and Nobel Prize winners Barbara McClintock and Rita Levi-Montalcini. Interestingly, a small number of colleges never had anti-nepotism rules, notably most historically black colleges and universities (Perkins,

1997). As a result, such institutions hired couples at a time when many other universities did not. Anti-nepotism rules most frequently applied only to wives and not to other relatives (Rossiter, 1982). In other words, anti-nepotism rules rather than truly being about nepotism in general were more concerned with marriages. This may have been a way to keep women out of the workplace.

In the 1960's the American Association of University Women became one of the first organizations to speak out against these rules because of concern for how they affected AAUW members. Interestingly, Gabor (1995) claims that as late as 1968 at Yale, women were told: "You are being trained to become research associates and to become the wives of the men you are now going to school with" (106). At the same time, some institutions began to offer positions to both members of a couple to attract well-known names (Rossiter, 1982). It was through such an exception to an anti-nepotism rule that the University of Chicago was able to hire Maria Goeppart Mayer, an award-winning physicist. Post-World War II, Pennsylvania State University became one a few institutions that was willing to hire couples and, in this way, improved its reputation (Rossiter, 1995). Rossiter also found that often times, however, the scientist-wife had to take a job at a rank lower than she merited. When anti-nepotism rules were thrown out, in the later part of the twentieth century, the shape of the university faculty changed, allowing more women to enter the ivory tower. But the history of university employment of couples, however, may have yielded a climate of continued discrimination against or ill will toward married couples, especially couples within the same department.

Women faced other difficulties other than anti-nepotism rules. Working with one's husband, as many married women did, often meant being disrespected and disregarded as a scientist. Even the Nobel Prize winning Marie Curie was accused of really just being a research assistant for her husband (Nerad & Cerny, 1999). Similarly, when Joe Mayer and Maria Goeppart-Mayer wrote a well-received textbook together, many assumed that the text was mainly Joe's work (Dash, 1973). Furthermore, working with a husband may have prevented some women from getting credit for their work. For example, controversy exists over the amount of work that Albert Einstein's first wife, Mileva Maric, a former classmate of his, contributed to his theories (Gabor, 1995; Popovic, 2003). Similarly, Gabor (1995) argues that marriage gave Maria Goeppert Mayer a collaborator, but kept her on the periphery. Outside the university system, women did not have to face anti-nepotism rules, regardless they were still often disadvantaged.

The case of Lillian and Frank Gilbreth, the efficiency experts immortalized in *Cheaper by the Dozen*, illustrates this point. The Gilbreths differ from other husband-wife-scientist tales in that Lillian was the more educated of the pair having an MA in literature and a PhD in psychology, which she earned only after writing two separate dissertations (Lancaster, 2004). Frank, meanwhile, did not have even a bachelor's degree. The couple worked together during Frank's lifetime. Although in her memoir Lillian portrayed herself as Frank's helper, she admitted that their work was inseparable. Many of Lillian's earliest writings appeared under Frank's name; it was only after Lillian received her PhD that she added her name to things that either she or

the both of them wrote. Her PhD was something that Lillian supposedly did for both of them, making them more legitimate in the scientific management community. Given that Lillian continued to work on motion studies and other aspects of engineering for decades after Frank's death, it is clear that she was an engineer in her own right as well. Perhaps it was because of Lillian's education that she was immediately accepted into and embraced by the engineering community upon Frank's death. When Frank's health began to become an issue, the Gilbreths made sure that Lillian's name was well known so that were Frank to die, she would be able to carry on their work and have respect.

Marriage affected women scientists and engineers in various industries both positively and negatively. For some women, marriage to a scientist or engineer brought them opportunities. For example, engineer Emily Warren Roebling took over on the Brooklyn Bridge project after her husband died (Hatch, 2006). In the space industry, marriage did not negatively affect women. Weitekamp (2004) reports that in 1959 *Look* magazine suggested that the first "girl" in space would probably be married because marriage implies stability – indeed, women's "first chance in space may be as the scientist-wife of a pilot-engineer" (67). Subsequently, there was a desire to ensure that married women would not be banned from the space program because such a ban would create complications if a woman were to marry after starting to train for space travel. Meanwhile, some women in industry faced pressures related to anti-nepotism rules. Bertha Lamma Feicht, an engineer, retired from Westinghouse when she married a man in her group (Hatch, 2006).

Donna Haraway (1997) argues that women were not historically excluded from science because of their lack of intelligence, but rather because of their dependence. In other words, Haraway argues that because of their dependence, women could not serve as a "modest witness" or a legitimate holder of knowledge. Given that many women gained access to science only through their dependence on their husband or father, this is certainly provocative. As we have seen, in the past, women like Marie Curie and Maria Goeppert-Mayer found that contribution to science has not always been valued in light of their relationships with their husbands. To what extent do women scientists continue to be looked down upon because of their perceived dependence?

Women Scientists' Same Sex Relationships in the Past

I found very little in the literature about same sex relationships. Historically, however, women in science may have been able to maintain same sex relationships without raising too many eyebrows. For example, Annie Montague Alexander was the founder and patron of two natural history museums at the University of California Berkeley (Stein, 2001). She also helped to develop their natural history and paleontology programs and was an amateur naturalist herself. She lived with and went on expeditions with Louise Keller for 42 years before her death in 1950. Although Stein claims that someone told her Alexander and Keller were partners, no evidence exists that their relationship was more than the "romantic friendship" that was common between women at the time. Since it was more appropriate for two women

to travel together than to travel alone at that time, their relationship was not questioned.

Women Scientists' Marriages Today

Women in marriages to other scientists report many positive aspects of being in such relationships. Often, they report that their husbands have helped them or they have helped their husbands to stay current in their fields or work through their scientific ideas. For example, throughout their marriage, Joe Mayer encouraged Maria Goeppert-Mayer to remain in science because he knew how much scientists love their work and he wondered "What on earth...do couples talk about when they're not both in the same line of work" (Dash, 1973, 278). Similarly, Beatrice Fu, an engineer, describes how her husband helped her strengthen her knowledge of computers when she stumbled upon a job in the computer industry (Ambrose et al., 1997). Linda Huff, a chemical engineer, recalls helping her husband through his master's degree with tasks ranging from his literature review to his lab tests (Ambrose et al., 1997).

Others value the extent to which a scientist spouse can understand the life of a scientist. Debbie Crans, a chemist, feels that her chemist husband is not intimidated by her intellect and her success (Ambrose et al., 1997). Also, because he is in a similar field, he understands the nature of her work and the demands that it makes on her life and her time. Similarly, Sue Nokes (1998) says that her scientist husband understood the intrinsic value of being intellectually stimulated and that he enjoyed being able to have technical conversations with her. Kory Wells (2006) notes that she and her husband, both programmers, enjoy bringing their skills home to do things like

track each of their baby's diaper changes. Nancy Deloye Fitzroy, an engineer, says that her husband, an engineer, was her mentor (Hatch, 2006). Dolores Cooper Shockley, a pharmacologist who is married to a microbiologist, says that, "He understood what being a scientist meant. He knew the demands of the research and the whole publish or perish game" (Jordan, 2006, 198). Another woman commented that her "level of anxiety about research and teaching was much reduced" by having a partner who was also a scientist (Daniell, 2006, 48). Yet another woman who married her closest colleague just before completing her dissertation says that she and her husband both "understand the drive and passion that is part of the profession. Having someone who understands you and supports you wholeheartedly is a great asset through grad school, the postdoc years, and beyond" (Levine, 2006). Similarly, neurosurgeon Katrina Firlik (2006) talks about how her now-husband convinced her to follow him on the path to neurosurgery in college because the classes were so easy for him. The fact that he understood her schedule also helped her through her residency.

That is not to say that everything is rosy in these relationships. For example, one of the women interviewed for the Oral Histories Project at the Northwest Center for Research on Women at the University of Washington between 1991 and 1996[12] describes issues that arose for her when she was hired on "soft money" after her husband got a tenured job. She reports feeling under-appreciated by the department in addition to having problems setting up her research. Women today who are married to

[12] The Oral History Project is described in Ginorio, Breckenridge, & Marshall (2000), which considers the extent to which women in the sciences identify with feminism. The project resulted in the archiving of over thirty oral histories representing a diverse group of women.

or partnered with other scientists also frequently face long distance relationships. Eleanor Baum, an electrical engineer, for example, describes having a long-distance courtship with her husband, a physicist, because both of them were in graduate school when they met and could not relocate until they graduated (Ambrose et al., 1997). Sara Majetich, a physicist, describes being in a long distance relationship with her husband for a longer stretch of time (Ambrose et al., 1997). After Majetich finished graduate school, she could not find a job in the same city as her husband who was already in a professor position. She says, "Neither of us is happy living apart, but the job market dictates this separation" (270).[13] Vivian Loftness, an architect married to another architect, says one difficulty in being married to another scientist is that she cannot escape her work. Indeed, "it's a real challenge for [them] to not discuss their work on a Saturday" (Ambrose et al., 1997, 261). Indeed, Shari Wilson (2005) notes that some academics do not want to marry other academics because doing so would make it harder to leave their work at the office. Likewise, Jennie Patrick, who is married to another engineer, reports that she tries to keep her professional life and her personal life separate (Jordan, 2006). Meanwhile, Judith Klinman, a biologist married to an immunologist, says that because she and her husband were in similar fields she was very competitive with him, which ultimately led to their divorce (Wasserman, 2000). One of the women interviewed for the Oral Histories Project also noted that science put a strain on her relationship with her husband. She says that the odd hours

[13] Incidentally, as of this writing, ten years after Majetich was profiled in *No Universal Constants* and twenty years after she finished graduate school, she and her husband are still living apart. She remains at Carnegie Mellon University and her husband is in Georgia.

that she needs to go to the lab causes tension in their relationship because it takes away from their time together. Some women, however, find ways around these problems. Barbara Filner, for example, says that marrying later in her career meant that she did not face the dreaded "two-body problem" and a relationship did not interfere with her dedication to her career during its early stages (Fort, 2005).

Like Judith Klinman who felt competition ended her marriage, relationships between scientists and engineers do sometimes end in divorce. One woman profiled in a *Science* article says, "I was married to a fellow scientist, but the relationship deteriorated after I got a faculty position (and he didn't). My new job forced us into a long-distance marriage (300 miles) which didn't survive" (Levine, 2006). Long-distance relationships, which are not uncommon among academics in general, may stress relationships making it difficulty for couples to stay together. Divorce for such couples may also be particularly problematic given the sorts of compromises that they may make when trying to find two jobs in the same place. For example, divorce can be particularly problematic when one half of the couple took a part-time position (Trubek, 2004) or when the couple moved to a small town before the split (Allen, 2005). Scholer (1998) also has found that women find balance between work and home life to be a problem; one woman in her study said she divorced because she worked too much. Despite some of the benefits that scientists experience when they are married to other scientists, the biographies of women scientists show that there certainly are downfalls to these relationships as well.

The research of Ivie, Czujko, and Stowe (2001) on women physicists shows that some of these same patterns are seen among women scientists around the world. Many women said that their marriages had positive effects on their careers. For at least some of the women, they felt their marriages had impacted them positively because their partner was a physicist. Some of the women also reported benefits that they had gained "because their spouse was particularly supportive, or because the routine chores of daily life were now shared by two people" (12). These are benefits that women could have received from a non-scientist partner as well as a scientist partner. One woman from Brazil said: "I worked more because he was also in grad school, we encouraged each other." (13). Another woman from the Netherlands reports: "I discuss my work at home. My husband is also an astronomer, and a computer wizard, so he helps me by writing programs for me as well" (13). They both address the extent to which being with a scientist can help one's own career and partners can support each other in their work. The second quote, however, is interesting because having her husband do her programming depicts a to stereotypical gender role within what would seem to be a non-traditional marriage.

The prevalence of relationships forming between scientists may differ by race. D. Jordan's (2006) book profiles seventeen Black women scientists, only five of whom are married to other scientists. This clearly differs from the more general proportion of women scientists married to other scientists. One woman profiled in the book, Lynda Jordan, who is single, reports difficulty finding a man supportive of her career. Another woman, Anna Coble, whose spouse is not a scientist, says, "On the

whole, black male physicists don't want the competition of a wife in the same field" (71).

Women Scientists and Dating

Looking at the dating lives of modern women in the sciences also sheds light on the reasons that women scientists form relationships with other scientists and the situations that women scientists face in relationships with other scientists. Indeed many biographies of women scientists and engineers discussed ways that their interest in science affected dating. Linda Shepherd (1993) notes that "in [her] teens [she] was eager to find out whom [she] was going to marry so [she] could align [her] life and career with his – working at his side and sharing his interests" (xi) and subsequently developed her interest in science due to a boyfriend she met in high school. She and the boyfriend eventually went to college, married, and went through graduate school together as biochemists. To what extent have women scientists developed an interest in science because of a partner's interest in it?

It may be difficult for scientists to date non-scientists. Shari Wilson (2005) argues that academics have a hard time dating non-academics because they make non-academics feel like "mere mortals" despite having careers and lives of their own. In science, this may be heightened because of the specialized jargon that scientists use when talking about their own work. Levine (2006) quotes a woman who argues, "There is a certain scientific culture that is difficult to relate to for a non-scientist."

In biographic materials, some women scientists have talked about their difficulties with dating. Kory Wells (2006) said that in high school "[she] started to

understand that the boys weren't interested in girls smarter than themselves but for the most part that didn't bother [her]" (5). Similarly, Kristin Abkemeier (2006) says that her mother warned that being good at math would make it difficult for her to date or get married. Likewise, computer scientist Ellen Spertus (2006) says that her college boyfriend's father told him to date a Wellesley girl, not an MIT "vector girl." Regardless, Spertus says that "[she] chose [to date] men who were brilliant at science, regardless of their other qualities" (41). Evelyn Fox Keller (1977) noted that her "career choice, and [her] attitude toward it, discouraged all suitors" (87-88). This sort of attitude is not uncommon. Suzanne Franks (1998) notes that, during college, being at a party and telling a boy that she was an engineering major was "the kiss of death." The only boys who were not scared away were the engineering majors. Even among high school students, Hanson (1996) found that the young women who were interested in science dated much less than young women who were not.

Other women report that their interest in science helps them meet men. Jami Schoenewies (2006) says that meeting boys online helped her date them in real life and Suzanne Franks (2006) notes that geek girls got lots of attention from geek boys. At times this caused problems for Franks because she felt as though she did not want to be seen as a sexual being within an academic setting.

Others suggest that both men and women in science may not want to become involved with other scientists. Dudnik (2006), a biologist, says "I've only dated another scientist once, and is was a disaster. We competed constantly" (112). Similarly, in a 2006 meeting of the House Committee on Science discussions devolved

to discussion about how a male lawyer would be able to marry a beautiful woman whereas a male physicist would be unable to find anyone to marry (Epstein 2006). Eglash (2002) says that nerds describe themselves as having given up bodily pleasure in general and sexual relationships. Of course, neither of these assertions really describes the situation accurately because most men in the sciences are married. Furthermore, younger academics are more likely than older academics to believe there is "more to life than work" (Jaschik, 2006). This suggests that relationships might be less likely to form between scientists now than they were in the past because of the greater value on life outside of work.

Whereas women's biographies allow us to learn about the experiences of women scientists, media depictions of women scientists and their relationships sheds light on how women scientists are perceived by the larger culture. The images of women scientists presented in media, with respect to relationships, are similar to the real-life relationships presented above. Steinke (2005) notes that the majority of female scientists and engineers portrayed in movies are involved with male scientists and engineers or fall in love with one during the course of the film. Others are shown working with individuals with whom they once had a relationship. Both of these patterns are common among real-world scientists. Steinke says that some of the women depicted in film fell in love with men who had "questioned their expertise or ridiculed their ability" (50). The conflict between professional life and personal life is a recurring theme, just as real women in science report. If a woman scientist in a movie is not or does not become partnered with another scientist, she remains single.

This illustrates the near dichotomy discussed above wherein women scientists are either partnered with another scientist or remain single.

The Culture of Science & Social Integration

Within the literature on women in the sciences, many researchers have pointed to the need for social integration into or comfort with the scientific culture in order for a scientist to be successful (Eisenhart & Finkel, 1998; Etzkowitz, Kemelgor, & Uzzi, 2000; Tinto, 1993). I argue that not only are marriages between scientists part of the culture of science, but that also being married to another scientist helps some women integrate into the culture of science.[14] Whereas scientists might see themselves as living within the "culture of no culture," there is indeed a culture within the sciences (Traweek, 1988). As a culture, science has a set of unspoken assumptions and values and prescribes the proper ways to behave in certain situations (Schiebinger, 2008). Young scientists learn these values and learn about their culture as they progress through their training. In order to succeed, newcomers must learn the practices and traditions of the lab (Conefrey, 2000). As part of this, scientists develop schemas about scientists and about gender within science (Valian, 1998). Because of the extent to which women in the sciences marry male scientists, it could be argued that this practice is a part of the current culture of science. Centering the debate about increasing the number of women in the sciences on the issue of culture rather than on

[14] Of course there are other strategies that women use to become better integrated into science. For example, the women described in *Every Other Thursday* (Daniell 2006) formed a support group in order to help them build community and many women take place in traditional one-on-one mentoring programs in order to do the same (Brainard & Ailes-Sengers 1994).

"women" helps to lessen any us-versus-them-thinking. In other words, it shifts the emphasis from supposed problems with women to problems with the culture of science. This shift helps men and women to work together to solve problems of inequity (Tavris, 1992). This approach points to structural origins of the problems that need structural solutions. Indeed, focusing on cultural change within the sciences helps to direct reform efforts within the sciences that aim to increase diversity.

Much research suggests that social integration is important to success in graduate school (Tinto, 1993) and in a career for scientists (Eisenhart & Finkel, 1998; Etzkowitz, Kemelgor, & Uzzi, 2000). Lovitts (2001) argues that graduate students who experience integration into the academic system as well as the social system are the least likely to leave graduate school. According to Mary Frank Fox (2000), for graduate students in science departments, the department can constitute a "society" because of the amount of time that they spend in their labs. She found that environments with a history of leadership in addressing women's issues, those with emphases on communication and interaction, and those with written guidelines for graduate study were more likely to grant doctoral degrees to women. Not surprisingly, departments that downplay sexist behavior and those with a locker room mentality were less likely to be successful with women. This not only is a part of the culture of science but it also suggests that such environmental factors can and do affect women's participation in the sciences.

Furthermore, women and underrepresented minorities in science and engineering end up feeling socially isolated (Brown, 2000). Women are often

excluded from social interactions in largely male environments. For example, if the men in a department center around a sport, and women find themselves uninterested or uninvited, the women miss out on an important time to make connections. In *Athena Unbound*, Etzkowitz, Kemelgor, and Uzzi (2000) argue that "women are often excluded from informational and informal channels in graduate school, they have less access to 'social capital,' the network of relationships and connections, than their male peers" (16). This exclusion from study groups, social groups, and other academic outlets occurs throughout graduate study and afterwards (Etzkowitz, Kemelgor, & Uzzi, 2000). Without this social capital, women face both loneliness and a lack of information that makes integration into the academic environment difficult. Not only do women feel that they cannot rely upon their peers for support, but this isolation often causes them to leave the sciences (Etzkowitz, Kemelgor, & Uzzi, 2000). This may indicate that women are most likely to benefit from marriage to another scientist or engineer when they are in a particularly sexist environment.

Herzig (2004) argues that the students who are successful in math are those who are able to or willing to adapt themselves to the culture present in math. In other words students might leave math because of the mathematics content or because they are rejecting the sociocultural practices involved with becoming a mathematician. Seymour and Hewitt (1997) argue this at the undergraduate level. Furthermore, Herzig (2004) contends that student involvement in departmental, institutional, and professional activities leads to greater retention and completion; isolation or a sense of little contact with faculty are frequent causes for students leaving doctoral programs.

Those who entered graduate school with knowledge of the math community (that, for example, they gained while doing math research as an undergrad) were more likely to succeed. In a survey of faculty at Georgia Tech, Mary Frank Fox (2003) found that male scientists talk to their colleagues more than female scientists do. Whereas almost 70% of men in the sciences speak with colleagues about their work on a weekly or regular basis, fewer than 50% of women in the sciences do. The difference between men and women suggests that men are better integrated in their departments than women.

Fit within the sciences, however, may be more of an issue for women than for men. In Margolis and Fisher's (2002) *Unlocking the Clubhouse*, they discuss how not fitting in as an undergraduate computer science major is often more difficult for female students than male ones. Margolis and Fisher argue that female undergraduates who feel as though they do not fit the stereotype of a computer scientist find themselves not fitting in on two levels because they also do not fit in because of their gender. Ferreira (2003), in interviews with biologists and chemists, found that men were more likely than women to say that the practices of science fit their personality. Women graduate students were less likely than men to report that other students (1) treated them as colleagues, (2) were friendly and easy to discuss ideas with, (3) respected their opinions, and (4) valued them as individuals and, furthermore, were more likely to say other students were too competitive (Curtin, Blake, & Cassagnau, 1997). This suggests that women have a more difficult time fitting in with the social environment than men do.

Marriages between scientists might help women scientists better integrate into the scientific community. Being married to another scientist increases the size of one's professional network (Ferber & Loeb, 1997). Personal relationships are important within one's professional realm. Creamer (2001) argues that the boundaries that we see between one's personal life and professional life are artificial. This may be especially true for scientists in partnerships with other scientists who find their partners to play a role in both their personal and their professional lives.

But, there may be ways that these sorts of relationships harm women. Selvin (1992) argues that there is "a suspicion on the part of male colleagues that women can succeed only by sleeping with male mathematicians" (1382). The high number of women in science married to or partnered with other scientists also speaks to how scientists are seen by non-scientists. While women scientists and engineers intimidate men from other fields, their male peers consider them "as potential dates rather than as intelligent coworkers" (Wokhlu, 1998, 138). Or as one of the women interviewed for Sue Rosser's (2004b) study of POWRE awardees says, "As a single woman, I have sometimes been viewed as 'available' rather than as a professional coworker" (xxii).

Being married to another scientist, however, may not solve the problems of integration for women in science and engineering. For example, five of the eight women profiled in *Every other Thursday: Stories and strategies from successful women scientists* (Daniell, 2006), which describes a group mentoring effort by several women, are married to other scientists. If being married to another scientist helps significantly with integration, I would expect that women who were married to other

scientists might not feel as though they needed this sort of group to find integration. Indeed, contrary to what is suggested above, Daniell argues spouses do not always give the best advice about professional issues because of the conflicts that can occur between work commitments and home life. She also argued that it is difficult for a couple to work through professional issues when both partners work together regardless of whether they agree or disagree because it brings the conflict and stress of work into their relationship.

As we have seen, there is a fair amount of literature on the role of social fit in being a successful scientist. As well, there seems to be an indication that social fit is more of a problem for women in the sciences than it is for men. Moreover, science has its own cultural system and values. I argue that not only are marriages between scientists part of this culture, but that also being married to another scientist may help women integrate into the culture of science.

Literature on Marriage and Dating

Marriage between scientists is a form of endogamy, or the practice of marrying someone with whom you share a specific characteristic. The literature on marriage considers endogamy with regards to education and occupational background as well as hypergamy, or the tendency for women to marry men who are more educated than they are. It also looks at differences between cohabiting and married couples, racial differences, and reasons that endogamy exists. Finally, there is also a body of literature considering marriages in the workplace.

Endogamy and Hypergamy

Not surprisingly, many forms of endogamy, such as religious, racial, and educational endogamy are fairly common and there is a body of literature tracking rates of various kinds of endogamy. Kalmijn (1991) argues that in the United States, educational homogamy, or the practice of marrying someone with a similar educational background, is stronger than social class origins in mate selection. Not only are there high rates of educational endogamy, but also levels of educational homogamy have been on the increase, especially among those with the highest levels of education (Blackwell, 1998; Kalmijn, 1991; Kalmun, 1991; Mare, 1991; Qian & Preston, 1993). Furthermore, studies have indicated that occupational homogamy is strong (Hout, 1982; Hunt, 1940).

The literature on marriage also addresses the issue of hypergamy. There is disagreement about the extent to which hypergamy is still prevalent. Elaina Rose (2006) argues that educational hypergamy has decreased in recent years. Given that scientists are among the most educated, this may mean fewer scientists are marrying other scientists. Others still argue that hypergamy is still prevalent. For example, according to Brown and Lewis (2004), men are more likely to want to marry subordinates than supervisors. They suggest that this is why it is difficult for women in high-ranking positions to marry. Because of the prestige that the sciences are accorded in our society, this may help to explain why so many women in the sciences remain single. Peril (2006) argues that this tendency to "marry up" is so strong that white women still have a fear of being overeducated because it will make it hard for

them to marry. Furthermore, scientists of both sexes may choose to remain single because of the notion that a scientists' productivity declines once they marry (Thompson, 2003). This line of reasoning is provocative in multiple ways. Not only does it suggest a reason that scientists may choose to remain single, but it also suggests that scientists might marry another scientist because of how such a marriage will influence their productivity.

Patterns may differ, however, for cohabiting couples rather than married ones. Blackwell and Lichter (2000) have found that with respect to education (and other factors), cohabiting couples are less likely to be homogamous than married couples. Furthermore, they argue that women in cohabiting couples are more likely to "trade down" with respect to education than married women. Those with a graduate degree of some sort (professional, masters, or doctorate) are 42 times more likely to marry someone of a similar level of education than someone with less education and 40 times more likely to cohabit with someone with a similar level of education than someone with less education.

Furthermore, literature points to differences in marriage patterns based on racial background. African American women are less likely to be married than white women (Tucker & Marshall-Kernan, 1995). Almost 24% of African American women never marry, compared with only 2.5% of white women. The tendency for racial homogamy in our country and the small numbers of people of color in the sciences suggest that women of color in the sciences may be more likely to remain single than other women in the sciences. In other words, proportionately we may not

see as many scientific couples of color as we do white couples in the sciences. However, Black women are more likely to marry a man with less education than white women (Tucker & Marshall-Kernan, 1995). This might mean that Black women in the sciences who are married may be more likely to be married to non-scientists than white women in the sciences. It could also indicated that Black women would be more likely to partner with lower status scientists, such as technicians, than white women.

There are multiple reasons why high levels of endogamy exist with respect to education or occupation. Twenty-eight percent of all couples married between 1965 and 1984 met at school or work (Whyte, 1990). A more recent survey suggests that 58% of employees have had office romances and 22% of employees meet their spouses at work (Soukup, 2005). As Kalmun (1991) explains it "making a match on education enables spouses to develop a common life style in marriage that enhances mutual understanding and social confirmation" (789). Furthermore, Kalmun (1991) argues that marriage patterns depend on one's opportunities to meet people and increasingly people spend large amounts of time in school and at work. This relates to Hamon and Ingoldsby's (2003) notion of propinquity or the idea that we marry people who are geographically close to us. Because scientists spend large amounts of time at work and school with other scientists, they may meet their partners in these settings. Hamon and Ingoldsby (2003) also argue that modern dating in the US is fluid and informal. In other words due to a lack of social guidelines about dating and courtship, two people may find themselves within a relationship rather easily. Because of the

amount of time scientists spend together, this theory about informal dating might explain how relationships form between graduate students and peers in the sciences.

A spouse with a high level of education is able to appreciate one's education and social status and will also share values about the importance of education (Blackwell, 1998). Education is a determinant of many aspects of one's lifestyle such as one's occupation and it also affects one's choice of spouse (Mare, 1991). Pelham, Mirenberg, and Jones (2002) argue that because people tend to prefer things that are somehow related to themselves, even small things such as one's initials, name, or birth date can affect major life decisions. One could extrapolate this to think that a potential mate with a similar career might be especially attractive. Whyte (1990) suggest that social pressures, social segregation, and values selection are pressures that encourage individuals to marry others like them. It seems possible that scientists would have similar values on many different levels, politically, personally, and religiously.

Kalmijn (1991) makes an interesting point about status homogamy being an indicator of the "openness" of society. In other words, if people marry across boundaries, it indicates societal acceptance of certain traits because members from other groups will marry individuals with those traits. Likewise if people marry within groups, it indicates less of an acceptance of these traits because individuals are unwilling to marry those outside of their own group. I find this interesting given the high number of marriages in the sciences. Does the fact that scientists marry other scientists indicate that scientists have difficulty in finding people who accept them? Or are scientists unwilling to accept non-scientists? Similarly, there are many

negative stereotypes of male scientists. Do these factors mean that to some extent, non-scientists do not accept scientists as partners?

Clearly, the research on educational and occupational endogamy is limited. Not only does it not differentiate between educational levels beyond the bachelor's degree, but the research also does not indicate the differences between fields of occupation. Studying scientists can not only shed light on these issues but also deepen our understanding of endogamy by adding more personal information. Furthermore, while some argue homogamy in a marriage does not necessarily mean the marriage will be more successful (Whyte, 1990), others argue that divorce rates and levels of homogamy are inversely related (Kalmijn, 1991). Therefore, this literature seems incomplete without being able to comment on the dynamics of these relationships. Furthermore, none of this literature considers same sex couples.

Couples in the Workplace

Another body of literature considers couples in the same workplace in industry. Werbel and Hames (1992), who use the term "paired employees" to describe couples within a workplace, argue that any potential disadvantages of having couples in the same workplace can be decreased through conventional personnel practices. Similarly, arguments have been made that anti-nepotism rules are not just unfair but unnecessary because if any problems arose from an individual that was part of a married couple, like any other employee that was causing problems, that individual could be fired (Wolkenbreit, 1997).

Literature on couples in the industry workplace has also considered why these relationships are so common. Mainiero (1993) argues that proximity, intensity of tasks, and similarity of interests are primary factors in the development of attraction, explaining why so many couples meet at work. Indeed, each of these reasons might serve to explain why so many scientists are in relationships with other scientists. Similarly, Reed and Bruce (1993) argue that employees treat the workplace as somewhere to meet, date, and marry people with similar backgrounds and interests. In the past, fewer women worked, jobs were sex-typed, and it was less acceptable to have cross gender friendships, which meant that fewer cross gender friendships developed in the workplace (Lobel, Quinn, St. Clair & Warfield, 1994). The larger numbers of paired employees may be also part of a trend to reintegrate work and home like was the case in the late nineteenth century (Reed & Bruce, 1993). It may also be long hours and shared interests that lead to so many couples meeting at work (Wolkenbreit, 1997).

Clearly, the existing literature on educational and occupational endogamy suggests that marriages between scientists are not unexpected. Nonetheless, we do see higher rates of marriage between scientists than we do between other academics suggesting that there is something else going on with scientists or the scientific workforce. The existing literature also suggests that there might be differences between couples based on factors such as race and marital status, which are issues that I should then take into account in my own work. This literature suggests reasons why so many marriages occur between scientists.

Couples in Other Fields

It is not surprising that there are couples in fields other than science, especially among other academic fields or specialized occupations. As Gabor (1995) puts it, women have been traditionally taught to judge themselves by their marriages and this encourages them to find smart and successful husbands. As she says, intelligent women would likely consider their peers to be smart and successful and so marriages between individuals with similar careers occur with some frequency. Some research has looked at marriages and partnerships within fields other than science and engineering; looking at this work might shed light on what happens between scientists. Exploring this literature is interesting because it suggests reasons that scientists might tend to partner. In particular, there is existing literature on couples within the intelligence field, within the arts, among members of the Modern Language Association of America (MLA), among farm families, among truck drivers, and within the park service.

In *Blowing My Cover: My Life as a CIA Spy*, Lindsay Moran (2005) sheds light on the issues that intelligence operatives face when choosing partners. In her book, Moran talks about the difficulty of dating individuals who she could not tell about her job due to security concerns. After marrying an outsider, Moran found that her husband and his family were then subjected to background checks, making for a difficult situation. She also reports being told to "'reconsider the value' of [her] out-of-Agency friends" (293). Undoubtedly, most scientists do not face such direct

pressures regarding their choice of partners that those with intelligence jobs might feel.[15] Nonetheless, there are similarities. Moran found it difficult to explain her non-traditional lifestyle to individuals outside the CIA; likewise, scientists might find it difficult to explain their travel or their schedules in the lab to a non-scientist. A CIA officer with a spouse in another field would not be able to share certain things about their job with their spouse because of security concerns; likewise, a scientist might have difficulty explaining their science to a non-scientist spouse. In other words, the ability to communicate to a spouse about one's work might be important and a reason that some individuals marry or partner with others in a similar field.

Another field where many inter-marriages occur is among artists and writers. Among the famous writers and artists partnered to individuals in their fields are: Virginia Wolf and Vita Sackville-West, Elizabeth Barrett and Robert Browning, Camille Claudel and Auguste Rodin, Lee Krasner and Jackson Pollock, and Frida Kahlo and Diego Rivera. Gabor (1995) argues that either these relationships are successful and supportive of the women's careers or there are aspects of the relationships that hinder the women's ability to succeed. Among the ways that relationships between artists support women's careers is that (1) artists can share their craft with one another (Chadwick and deCourtivron, 1993), (2) artists may feel reinvigorated by their partner's passion (Mermin 1984), or (3) artists may learn from their partner about different areas of art (Schapiro, 1977). Among the ways that these relationships can harm women's careers is that (1) an artist's ex-partners may use her

[15] Except of course, perhaps, for those scientists who work for either the government or as government contractors and thus have high-level security clearances.

ideas (Chadwick and deCourtivron, 1993), (2) an artist may be seen as "just" her partner's wife rather than as an artist in her own right (Gabor, 1995), (3) an artist may feel a lack of breadth in her life (Stevens, 1977), or (4) an artist may feel frustrated by competition between herself and her partner (Stevens, 1977). Scientists' could experience both these benefits and drawbacks as a result of relationships with other scientists. Finally, artists seem to be drawn together by their passion for art; Gabor (1995) suggests that for some individuals such as artist Lee Krasner and architect Denise Scott Brown, this passion can draw them to multiple artist partners over a lifetime. For Frida Kahlo's and Diego Rivera's "reverence for each other's art was a powerful bond" (Chadwick and deCourtivron, 1993, 121). It would not be surprising if scientists formed such a bond over their appreciation for each other's passion for science and scientific work.

Given the demands of life on a family farm, it is not surprising to discover that many women farmers are married to male farmers. In Weibe's (1995) work on women farmers, she talks about how these women find that personal and professional lives are blurred. Science couples may find this same blurring, especially because of the extent to which science is all-encompassing and scientists may find themselves working from home. Female scientists might report a similar blurred boundary where they encounter situations wherein their relationship affects their professional reputation or their relationship is affected by professional competition with their partner. Theorizing about the blurred boundary between work and home not only can help to increase the value placed on work done at home (Weibe, 1995), but it also

emphasizes the multifaceted nature of modern lives. Discussing the gray area helps to accentuate the extent to which lives are complicated and busy.

There are yet other fields where couples are prevalent, including truck driving and the park service. Because truckers often travel in pairs and because of the sort of lifestyle that truckers lead, these marriages mean that women truckers can then spend time with a husband (Kane, 2005). There are ways that such an arrangement is not dissimilar from that of women scientists who spend so much time in the lab and marry or partner with a coworker. Perhaps due to the remote locations of some National Parks, there has been a history of women in the park service partnering with other individuals in the park service (Kaufman, 2006). Earlier, women were unpaid and as "park wives" they were expected to help their husbands complete their jobs. In some ways, this arrangement is reminiscent of the phenomenon of women working as unpaid research assistants for their husbands. Furthermore, single women in the park service "faced the expectation that they were available for affairs with both unmarried and married men" (Kaufman, 2006, 143). This is not dissimilar from women scientists' concerns about how their colleagues see them. Furthermore, women rangers report that balance between work and family is one of their biggest concerns, also not unlike women in science. The park service did not always deal with dual career issues well, and at times, that meant that the women were not in positions best suited to their skills or that couples had to spend time apart in order to advance their careers. Organizing job opportunities according to proximity has helped to alleviate these issues (Kaufman, 2006, 233). Parks have found that being supportive of dual

career couples helps them recruit people to remote areas and deal with housing shortages and makes it easier for families to live on the low pay that rangers receive.

A booklet published by the Modern Language Association (MLA) in the 1970's entitled *Careers and Couples: An Academic Question* (Hoffman & DeSole, 1976) emphasizes the fact that not only have academic couples existed for years, but also that the problems they encounter have not changed. The booklet, inspired by conversation among the members of the MLA Commission on the Status of Women, touched on many issues that couples in the same field face, including working outside the traditional academy, holding part-time appointments, and professional appointments shared within a couple. The issues raised back in 1976 do not sound terribly different than anything that would be written today about academic couples. It still is difficult for couples to find jobs together, the trailing spouse is often looked down upon, joint appointments are still rare, many couples find themselves in long distance relationships, and part-time faculty still are not entirely embraced. Hoffman and DeSole hoped to shed light on relationships between academics, especially within the MLA, and ease tensions for individuals within such relationships, much the same way that I hope my work can reveal issues couples in the sciences face and argue for changes to help them.

Many patterns have been identified when looking at work done on couples in the same line of work. In each of these venues, theories have been developed about how these couples form and how their work and lives are affected by their situation. The ways relationships are theorized about in other disciplines provides information

that can be useful in studying relationships between scientists. Comparing these fields to the sciences sheds light on reasons that scientists wed or problems that they face when partnered to each other. Studying scientists in depth can further our understanding of the interaction of work and marriage as has been explored in these works. Because of the number of couples who work together and because of the extent to which these issues comment on the culture within the workplace, these are important issues to study.

Conclusion

Lynne Peril (2006) argues that historically there was a notion that women used to go off to college to get their "M.R.S." This speaks to a relationship between higher education and partnership that may still exist today. By no means do women enter the field of science intending to partner with another scientist, but nonetheless many women scientists partner with other scientists that they meet either through school or work.

Not only is there very little information available about marriages between scientists, but researching the marriages between scientists can also contribute to the project of feminist theory building in many ways and this is one of the things that makes it an important project to pursue. As we have seen doing such work can open up and help answer questions about the blurring of personal and professional lives. It can also teach us more about patterns of endogamy and answer questions about the culture of sciences and the value of personal relationships. Additionally, researching

female scientists' marriages to other scientists contributes to the feminist project of exploring women's issues.

Looking at the existing literature on scientists and marriage, a few themes arise. First of all, these relationships have both negative and positive implications for women. For example, being partnered to another scientist may help women scientists with social integration but it also allows for the possibility of competition related to their professional lives within their relationship. Furthermore, these relationships have implications for women's professional lives both with regards to the content of science and with regards to the structure of science. With regards to the content of science, a partnership with a scientist can give a scientist an additional colleague with whom to collaborate or from whom they can receive feedback on new ideas. At the same time, a partnership with another scientist can affect aspects of women's lives related to the structure of science such as the job search.

Furthermore, after considering the existing literature many questions arise. To what extent are women scientists partnered to male scientists looked down upon because of their perceived dependence? To what extent does partnering with another scientist help women integrate into the culture of science? Do scientists form partnerships with other scientists because of their passion for science and the way that another scientist is able to understand them? Or do they form these relationships because they are unwilling to accept non-scientist partners or because non-scientists do not accept scientists?

The primary reason that it is important to investigate women scientists' relationships with other scientists is because of the prevalence of these relationships among women scientists. As we have already seen, women scientists consider issues of balancing their personal and professional lives to be one of their largest challenges. Furthermore, there is a need for academic careers to be more flexible, family friendly, and attractive to women (Sears, 2003). As Sue Rosser (2004b) says, "Although 'balancing career with family' and 'dual career' relationships [are]...individual choices...addressing the problem at the level of the individual proves inadequate. Institutional responses are needed to resolve these family-centered issues identified by overwhelming numbers of women scientists" (141). Looking at their relationships can help to determine appropriate institutional responses that improve the climate for all women in the sciences and engineering.

One of the main goals of feminist theory building should be to contemplate inequities that individuals face on account of aspects of their socially defined identities. With women woefully underrepresented in many areas of science and engineering, this is clearly an area that needs feminist analysis. One important result of increasing the representation of women in science and engineering fields is to diversify the thought within those fields. Feminist epistemologists argue that this is important within any academic endeavor, even when using the supposedly unbiased scientific method (Haraway 1997, Harding 1991, Hartsock 1998, Naples 2003). By helping to understand the problems that women face in the scientific workforce, studying women scientists' relationships works towards this goal.

Moreover, my work fits into the larger picture of feminist theory building. Feminists often argue that women's lives need to be looked at as a whole. Acknowledging the interconnectedness of scientists' personal and professional lives may deepen our understanding of the complexities of a scientific career that deter women from such pursuits. Clearly, this approach differs from that in science where "philosophical and personal matters [are] not recognized as 'experiences'" (Messer-Davidow, 2002, 28). A more holistic approach to studying women in the sciences can give us a more accurate and realistic idea of what their lives our like.

METHODS

As I discussed in the previous chapter, there is a lack of information about scientists' and engineers' marriages and partnerships with other scientists and engineers. The dearth of information about marriages and partnerships begs many questions:

- Which scientists are more likely to partner with other scientists?
- Why do scientists form relationships with other scientists?
- What implications do these relationships have for scientists' lives at work?
- What implications do these relationships have for scientists' lives at home?
- What can we learn from these relationships about the way that science is practiced?
- How do these relationships speak to the extent to which being a scientist becomes a lifestyle for these couples?

Answering these questions will inform the literature on the culture of science because as Londa Schiebinger (1999) says "Domestic arrangements *are* a part of the culture of science" (93, emphasis in the original).

My project is the first research to explicitly ask these questions about scientists and their relationships. It is one of the first projects that explores the unexamined space that results when women's personal and professional lives are intertwined. Furthermore, my research is unique for its explicit focus on women's day-to-day experiences in their relationships and careers. I explore the demographic patterns of marriages between scientists and engineers in addition to examining both how these

relationships form and women's experiences in their relationships. In my dissertation research, I am seeking to answer these questions posed above in two ways: (1) by using census data to obtain better demographic information about partnerships between scientists and (2) by conducting in-depth interviews with women scientists and engineers partnered to other scientists and engineers to learn more about how these relationships affect their personal and professional lives. (See Appendix A for more information about my particular methodological choices.) Using both qualitative and quantitative methods allows me to gain an in-depth understanding of women scientists married to other scientists.

Quantifying the Relationships Between Scientists

The first part of my project uses data from the 2000 US Census in order to quantitatively explore the relationships between scientists in the US. Because Census data gives information about the employment of everyone in a household, it can be used to determine whether scientists are married to or partnered to other scientists.

In looking for ways to research these couples, I have considered data sets that specifically look at the academic or scientific workforce. Although some of these data sets ask questions about the education of the partner, they do not ask about the occupation and/or field of the spouse or partner. For example, the National Study of Postsecondary Faculty (NSOPF) asks faculty whether her or his spouse has a PhD and whether her or his spouse is working in higher education. Although the NSOPF asks about the partner's or spouse's industry, it does not ask about the partner's or spouse's

field of study. Similarly, the Survey of Earned Doctorates only asks whether recent PhD recipients are married.

NSF's Survey of Doctorate Recipients (SDR) is the only dataset that I located that addresses the issue of spouses' or partners' fields of study as well as issues specific to the career of a scientist. Between 1993 and 2003, the SDR asked whether the partner's job required a bachelors degree or higher in (1) science and engineering, (2) social science, or (3) another field. Although the SDR asks questions that specifically address scientific careers, I decided to use the Census data because it gives more information about scientists' partners, including their occupation, industry, and educational attainment. These variables meant that I was able to focus this part of my project specifically on academic scientists and engineers partnered to other academic scientists and engineers.

Subjects

I obtained Census data from the Integrated Public Use Microdata Series (Ruggles et al., 2008). IPUMS automatically matches individuals with their spouses and heads of households can be manually matched with their unmarried partners, allowing me to gain information about partnerships of scientists. In order to be consistent with the Federal Defense of Marriage Act, the Census does not allow for same sex couples to be considered married (U.S. Census Bureau, 2001). On the 2000 Census, any same sex couples that indicated that they were each other's spouses, had their responses changed so that they were "unmarried partners," the same designation used for unmarried opposite sex couples.

I used IPUMS' 5% sample of the 2000 Census data, a 1 in 20 national random sample of the population. Records for over 14 million people and 5.6 million households are included in the 5% sample. I limited my analysis of Census data to female, partnered scientists and engineers working in colleges or universities, with a master's degree or higher, who are not currently enrolled in school. I have defined scientists and engineers by using the occupation codes that the Census defines as being scientists and engineers (See Appendix B). All scientists with an industry code of 787, meaning "Colleges, including junior colleges, and universities" were included in the sample. These parameters would include faculty members as well as postdocs, research scientists, and lecturers. I chose these parameters so that the sample would mirror the women who I interviewed in the qualitative part of my project. I considered the women to have academic-scientist partners if their partners also meet these same four criteria. (See Appendix C for my procedure of loading the IPUMS data, matching partners, and choosing my sub-sample).

If an individual is married, IPUMS automatically links their data to their partners. I had to manually match unmarried women with any partner. In doing this, I omitted individuals who are not identified as (1) married, (2) heads of households, or (3) unmarried partners from the sample because their relationship status could not be determined.[16] This step omitted 589 data points. The omitted individuals'

[16] The Census collects data on how household members are related to the head of household as well as which household members are married to each other. It does not, however, collect information about unmarried partners unless one of them is the head of household. As such, if one unmarried partner was a child of the head of household, for example, and the other was a non-relative of the head of household, it is impossible to discern this relationship. As such, I could not locate any unmarried couples unless one of the partners was the head of household.

relationships to the heads of household include: child, child-in-law, and housemate, among others. Using Census data only allows me to look at women living with their partners. Indeed, women whose marital status was "married, spouse absent" had to be excluded from the sample because I could not obtain information about their spouse. This is particularly important because it means that women living apart from their partners on account of employment are not included in the sample. After these steps, 1,185 women remained in the unweighted sample and 26,423 women remained in the weighted sample.

Design and Procedures

I used SPSS to perform logistic regression in order to determine which academic scientists were more likely to partner with other academic scientists. Based on my literature review, I focused on the following variables: age, race, Hispanic origin, general occupation, educational attainment, metropolitan status, and citizenship.[17] Age was coded as a categorical variable. Individuals born before 1946 were coded as Pre-Baby Boom and individuals born after 1965 were coded as Generation X. The remaining women were coded as being Baby Boomers. Race was divided into six categories: White, Black, American Indian/Alaskan Native, Asian and Pacific Islander, Other race, or Multi-racial. In addition to a variable for race, women were also coded as either being of Hispanic origin or not of Hispanic origin. The specific occupation codes provided by the Census were recoded into seven general

[17] Because the Census data used separate variables to indicate an individual's race and whether or not an individual is Hispanic, I have kept them as two separate variables in the analysis. I did not have a specific hypothesis to test with regards to race or Hispanic origin.

occupation codes according to the larger occupational categories designated by the Census: Computer Science Occupations, Mathematics Occupations, Engineering Occupations, Life Science Occupations, Physical Science Occupations, Social Science Occupations, and Technician Occupations. Educational attainment refers to the highest degree each woman earned and was coded as one of three variables: master's degree, professional degree, or PhD. Women were coded as either living in a metropolitan area or not. With regards to citizenship, women were coded as either US born Citizens, Born abroad to US parents, naturalized citizens, or non-citizens. (See Chapter 3: Using Census Data to Find Patterns for more information about the demographics of the sample across these variables).

I ran two different logistic regressions in SPSS. In order to determine which women were more likely to be married to other scientists, I used SPSS to perform logistic regression. In both regressions, the dependent variable was whether or not a woman's partner was an academic scientist. The first regression that I ran looked at all women partnered to academic scientists. As mentioned previously, I considered the women to be partnered to academic scientists if their partners were not currently in school, had a graduate or professional degree, if they worked for a college or university, and had an occupation code that marked them as a scientist or engineer. I ran a logistic regression with three blocks (See Appendix D for the SPSS code). The first block contained demographic variables: age group, ethnicity, race, and citizenship status. The second block had occupation related variables: highest degree and occupation. Finally, the third block included whether they lived in a metropolitan area

and whether they were married. For variables such as race or occupation with more than two categories, I used the largest group as the default or comparison group (See Chapter 3 for more information). Because there were no same sex relationships among the women who were partnered to academic scientists, same sex relationships were omitted from this analysis. Similarly, the American Indian/Alaskan Native, multi-racial, and other race variables were omitted from the model because no women in the sample in these groups were partnered to academic scientists and engineers. Given the large number of non-native-born US citizens in the sample and the cultural differences that might exist between women born in the US and those born abroad, I ran a second analysis looking only at native-born US citizens.

Exploring Women's Relationships

The second part of my project involved interviewing academic women scientists and engineers partnered to other scientists and engineers. The interviews allowed me to ask open-ended questions about the women's relationships and gain a more holistic understanding of the effects their relationships have had on both their personal and professional lives.

Subjects

The interviews were conducted with 15 female academic scientists and engineers in a large metropolitan area on the West Coast who were in committed relationships with other academic scientists and engineers. All of the women interviewed were white women in heterosexual relationships. Indeed, all of the

women were married to their partners. The youngest participant was in her thirties and the oldest was in her seventies, with a mean age of 48.3 and a median age of 46 (See Table 1). Five of the women that I interviewed were not US born citizens. All of the women were currently living with their partners, although six of the relationships had been long distance relationships in the past. Twelve of the women were in academic science appointments, two were in academic engineering appointments, and one woman had just completed an engineering PhD and worked for the government. Eleven of the partners were in academic science appointments, two were in academic engineering appointments, and two were in government positions. All of the women held PhDs, as did all of their partners except for one of the men in a government position who had a bachelor's degree.

Twelve of the women interviewed were in the same departments as their partners and one of the women was in different a department from her partner but in a similar field of research. The two remaining women were both in different departments and different fields of research. Ten of the women received their PhDs after their partners. Four of the women held higher-rank positions than their partners, four held lower rank positions than their partners, and the remaining seven women were at the same rank as their partners.

Table 1: Summary of Participants and Their Characteristics

Name* / Age**	Field of Study *Partner's Field of Study*	Met Partner	Closeness at Work	Career Path
Anna / 50s	Physical Science *Physical Science*	In graduate school	Same department Different fields No collaboration	After graduating, she worked at her husband's institution on soft money. After many years, they received an outside offer and she was offered a permanent position.
Beth / 60s	Physical Science *Physical Science*	In graduate school	Same department Different fields Some collaboration	After her husband graduated, she moved with him to his institution. Upon graduation, she got a position there. After his career needs dictated a move, she started working on soft money.
Colleen / 30s	Physical Science *Life Science*	In graduate school	Different departments Different fields No collaboration	After graduate school, they lived apart. Eventually, she found her current position and he was offered a position as the trailing spouse.
Denise / 70s	Life Science *Life Science*	She was his PhD advisor	Same department Same field Some collaboration	After her husband finished his degree, they looked for jobs together and found their current positions.
Evelyn / 40s	Physical Science *Physical Science*	Both in faculty positions	Same department Different fields No collaboration	They were both in their current positions when they met.
Frances / 30s	Life Science *Physical Science*	In graduate school	Same department Different fields No collaboration yet	After graduation, he had a tenure track job and she worked in industry briefly. She just started a tenure track job and he took a temporary position.
Gwen / 30s	Engineering / Computing *Physical Science*	In graduate school	Different department Same fields No collaboration yet	While he earned his PhD, she earned a master's. After that, he took a faculty job, and she took a government job and worked on her PhD.

Table 1 continued

Heather / 30s	Life Science *Life Science*	At a conference while she was in graduate school and he was faculty	Same department Same field Often collaborate	Upon completing her PhD, she took a postdoc position near her partner. After that, she took a position in another area and they lived apart. After an outside offer, they moved to tenure track positions at a new institution.
Isabel / 40s	Physical Science *Physical Science*	In graduate school	Same department Different fields No collaboration	After they graduated, they found postdocs in the same city but different institutions and have stayed at those institutions.
Jackie / 60s	Physical Science *Engineering / Computing*	She was in graduate school, met through a hobby	Different department Different fields No collaboration	After graduate school, she took a tenure track job. He moved with her and earned his bachelors. After that, he took a government job.
Kathryn / 40s	Life Science *Life Science*	She was in graduate school, he was a postdoc	Same department Different fields No collaboration yet	After they met, they spent five years in various long distance situations. They moved in order to be near family and then were able to find positions.
Laura / 50s	Engineering / Computing *Engineering / Computing*	Met at conferences	Same department Same field Frequent collaboration	After they became involved, a university recruited them. They then briefly worked in industry. He then got a job at her current institution and she followed as a trailing spouse.
Marion / 50s	Physical Science *Physical Science*	In graduate school	Same department Same field Frequent collaboration	After graduation, they both took research positions. She followed him as a trailing spouse when he got a tenure track position. After an outside offer they moved again and she got a tenured position

Table 1 continued

Nicole / 40s	Engineering / Computing *Engineering / Computing*	She was in graduate school; he was a research scientist	Same department Different fields Some collaboration	After she graduated, she took a tenure track position and he followed as a trailing spouse. They found their current positions when there were two openings at the same institution.
Olivia / 50s	Life Science / Life Science	At a conference while postdocs	Same department Different fields No collaboration	After meeting, they had a long distance relationship. Upon finishing her postdoc, she was able to get a job at his institution.

* In order to maintain anonymity, participants' names and other identifying information has been changed. Women who have had multiple partners in science have had their relationships combined into one composite relationship.
** Age is given as age at time of interview.

Design

Interviews with academic women scientists and engineers partnered to other academic scientists and engineers were conducted over a period of four months between December 2006 and March 2007. These individuals had been living with their partner for at least a year or had lived together for at least a year but were living apart for reasons beyond their control, including reasons like having jobs in different states or family issues. Women who worked at any academic institution were eligible for participation. A snowball sampling method was used in order to identify participants. The study was advertised through email lists of women scientists and engineers as well as through an ad placed in a university publication (See Appendices E and F).

Interview participants were asked a series of questions about their current and past relationships with other scientists (See Appendix G). These questions were developed and refined by consulting with individuals with a background in science, education, and/or science studies. The interviews pursue a variety of issues related to relationships between scientists. The questions explore the scientists' backgrounds, their past relationships, and their current relationship and its effects on various aspects of their personal and professional lives. After the interview was completed, each woman was asked to complete a questionnaire that covered a series of demographic questions (See Appendix H).

Procedures

Twenty-three women responded to the advertisements for the study. Two of the women who responded indicated that they were unable to participate and two of the respondents did not fit the criteria for my study. I was unable to schedule interviews with four other respondents.

Participants chose the location for the interview. Ten of the women met with me in their offices. I met one woman in a coffee shop, two women came to my office, and I met two women in conference rooms. Interestingly, four of these five women who met me outside of their offices were among my six longest interviews. Although I wanted the women to be able to choose a convenient place for the interviews, it is possible that being interviewed in her office meant that a woman was aware of all of the demands on her time and so she tended to talk for less time. The shortest interview lasted just under twenty minutes and the longest interview lasted just over an hour. The mean interview time was approximately thirty-eight minutes.

When I met with interview participants, I spent a couple of minutes explaining the study to them and asking if they had any questions. After completing consent forms (See Appendix I), we proceeded with the interviews. The interviews were taped using a digital voice recorder. During the interviews, I did not take notes but I did write down follow up questions that I wanted to ask. At the end of the interview, participants were asked to complete the worksheet with demographic questions.

After the interview, I listened to and transcribed the recordings. Each of the women was sent a copy of her transcript and asked to look it over. At this point, she

was free to retract any statements or make changes to the transcript. After receiving the transcript, one participant asked that I not discuss part of her interview in detail. Two other women edited their transcripts. For the most part, the corrections made by these two women were of typographical errors.

I then coded the interviews using an open-coding approach and Atlas.ti qualitative data analysis software. I used a grounded theory approach because my project is exploratory in nature and grounded theory is meant to "build theory rather than test theory " (Strauss & Corbin, 1998, 13). The initial coding of the data generated over a hundred codes (See Appendix J). The initial codes were then grouped thematically (See Table 2). These groupings were then used to theorize about the data and draw conclusions. This process allowed me to develop conclusions related to three areas: women's personal relationships, their professional lives, and science as a lifestyle. In order to maintain anonymity, participants' names and other identifying information has been changed. For women who had multiple scientist partners, this included combining information about their past relationships as if it belonged to one single relationship.

Table 2: Themes that Emerged from Coding

Women scientists' personal lives
- Family of origin
- Dating and other relationships with scientists
- Meeting their partner
- Positive and negative ways their relationship with science affects their relationship with their partner
- Their children
- Their friends

Table 2 continued

Women scientists' professional lives - The departments and fields that they're in - The job search - Demands of their careers - Collaboration/Research/the Content of Science/Gaps in knowledge - Mentoring/being together at work - Being seen as a couple
Science as a lifestyle - Science as a way of life - Science at home - Balancing personal and professional lives

At the time of the interview, participants were asked if they were interested in participating further in other parts of the project. Participants were asked this for two reasons: (1) so that if I had issues that I wanted to clarify with participants, I could ask them questions and (2) so that participants could critique and comment on my analysis of the interviews. I sent a summary of my findings to the thirteen women who agreed to read and comment on my analysis. I also asked if they were interested in commenting on the complete analysis. Although none of the women asked to read the more in-depth version of my analysis, six of the women did respond. Four of them said they enjoyed reading the summary and two said that the summary resonated with their experiences. Two women were also consulted about their preferences on how to camouflage information that could potentially be used to identify them. Any information that might be used to identify any of the participants was modified or deleted before the analysis was sent out. Incorporating the women's feedback into my analysis assured that the women felt that my findings accurately their experiences.

USING CENSUS DATA TO FIND PATTERNS

While data show that a large number of women scientists and engineers marry and/or partner with other scientists and engineers (Committee on Maximizing the Potential of Women in Academic Science and Engineering & Committee on Science, Engineering, and Public Policy, 2007; Gibbons, 1992; Sonnert & Holton, 1995), past studies do not help us to understand which subgroups of scientists and engineers are more likely to engage in this type of pairing. The US Census provides one of the few datasets that contains information about scientists' partners' field of employment. Using these data, we can answer questions that have not yet been addressed elsewhere: which women scientists and engineers are more likely to partner with other scientists and engineers? How is such pairing related to the scientists' age, race, ethnicity or citizenship? How does it differ by highest degree earned, occupation, marital status, or whether one lives in a metropolitan area?

Data

I used the weighted 5% 2000 Census data sample available from the Integrated Public Use Microdata Series (Ruggles et al., 2008). It is a 1-in-20 national random sample of the population with records for approximately 1.2 million households and 2.8 million people. After applying the weights, the subsample of academic female scientists[18] included 26,423 women.[19] Thirteen percent of the women were partnered

[18] A woman is considered to be an academic scientist if she is a scientist or engineer, works at a college or university, has a master's degree or higher, and is not currently enrolled in school. Likewise, a

to academic scientists and 25.4% were partnered to non-academic scientists (See Table 3). The average age of the women in the sample was 40.5 years (with a standard deviation of 9.58 years) and the large majority of the women (94.0%) lived in metropolitan areas.[20]

Table 3: Occupations of Academic Women Scientists' and Engineers' Partners in the 2000 US Census 5% Sample

Partner's Occupation	Percent
Academic scientist	13.0
Non-academic scientist	25.4
Scientist	38.4

Overwhelmingly, these women tended to be either white (76.1%) or Asian and Pacific Islander (25.6%). (See Table 4). 66.8% of the Asian women were Chinese, 4.5% were Japanese, and the remaining 28.8% of the Asian women were Pacific Islander or from other Asian groups. Less than 2% of the women belonged to any of the other racial groups, Black (1.0%), American Indian/Alaskan Native (0.2%), other races (0.3%), or multi-racial (1.3%). Because the Census data gives race and Hispanic origin as two separate variables, I have kept these variables separate in my analysis. In other words, each woman is identified both as belonging to a racial group and

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woman is considered to have an academic scientist partner if her partner satisfies these criteria. A woman whose partner works in any science or engineering field is considered to have a scientist partner. This definition means that academic scientists include individuals such as postdocs, lecturers, and technicians in addition to science faculty.

[19] There were 1,185 data points before the weights were applied.

[20] Metropolitan status is unavailable for 4.5% of the women in the sample. Of the remaining women, 94.0% live in metropolitan areas.

whether or not she is Hispanic. Just less than 3% of the sample was Hispanic (2.9%), and the remainder of the women were non-Hispanic (97.1%).

Table 4: Race and Ethnicity of Academic Women Scientists and Engineers in the 2000 US Census 5% Sample

Characteristic	Percent
Race	
White	71.6
Black	1.0
American Indian/Alaskan Native	0.2
Asian and Pacific Islander	25.6
Other race	0.3
Multi-racial	1.3
Ethnicity	
Hispanic	2.9
Non-Hispanic	97.1

49.4% of the women had doctorates; and 42.5% of the women had master's degrees.[21] (See Table 5). The remaining 8.1% of women had professional degrees. The most common occupations were: physical science occupations (32.0%), life science occupations (26.1%), computer occupations (17.8%), and social science occupations (10.9%). The remaining field of employment accounted for fewer than

[21] Census respondents are asked, "What is the highest degree or level of school this person has COMPLETED?" The question provides examples of each type of degree: master's degrees (MA, MS, MEng, MEd, MSW, and MBA), professional degrees (MD, DDS, DVM, LLB, and JD), and doctorates (PhD and EdD).

ten percent of the women: technician occupations (7.1%), mathematics occupations (3.4%), and engineering occupations (2.6%).

Table 5: Highest Degree and Field of Employment of Academic Women Scientists and Engineers in the 2000 US Census 5% Sample

Characteristic	Percent
Highest Degree	
Doctorate	49.4
Masters	42.5
Professional degree	8.1
Field of Employment	
Computer occupations	17.8
Mathematics occupations	3.4
Engineering occupations	2.6
Life Science occupations	26.1
Physical Science occupations	32.0
Social Science occupations	10.9
Technician occupations	7.1

89.8% of the women in the sample were in married opposite sex relationships, 7.8% were in unmarried opposite sex relationships and only 2.4% of the women were in unmarried same sex relationships (See Table 6). Over half of the women were Baby Boomers (55%) and the majority of the other women were in Generation X (36%). Only 8.9% of the women were born before the Baby Boom.

Table 6: Type of Relationship and Age Group of Academic Women Scientists and Engineers in the 2000 US Census 5% Sample

Characteristic	Mean or Percent
Type of Relationship	
Married	89.8
Opposite sex, unmarried	7.8
Same sex, unmarried	2.4
Age Group	
Generation X	36.3
Baby boomers	55.8
Pre-baby boom	8.9

Just over half (57.1%) of the women in the sample were US-born citizens (See Table 7). The majority of the other women were non-US Citizens (31.6%). The remainder of the women were naturalized citizens (10.7%) and born abroad of US parents (0.6%).

Table 7: Citizenship/Nationality of Academic Women Scientists and Engineers in the 2000 US Census 5% Sample

Citizenship/Nationality	Mean or Percent
US-born citizen	57.1
Born abroad of US parents	0.6
Naturalized citizen	10.7
Non-US citizen	31.6

The large proportion of non-US citizens is unsurprising given the composition of the US scientific workforce. According to National Science Foundation data, in 2003 40% of doctorates in science and engineering occupations were awarded to foreign born individuals (National Science Board 2008). In the Census data, the racial composition and age of women varied across the different citizenship groups (See Table 8). Ninety-five percent of all of the US born citizens were white. Meanwhile, 57% of the naturalized citizens and 57% of the non-US citizens were Asian or Pacific Islander. Whereas 43% of the youngest women, those in Generation X, were non-US citizens, only 28% of the Baby Boomers and 10% of the Pre-Baby Boomers were non-US citizens. Likewise, 26% of the oldest women, those born before the Baby Boom, were naturalized citizens while only 13% of Baby Boomers and 4% of the women in Generation X were naturalized citizens.

Table 8: Percent of Women Scientists' by Race and Age within Citizenship Status in the 2000 US Census 5% Sample

	Citizenship Status				
	US Born Citizens	Born Abroad of US Parents	Natural-ized Citizens	Non-US citizens	Over-all
Overall	57%	1%	11%	32%	
Race					
White	95%	73%	37%	41%	72%
Black	1%	-	<1%	1%	1%

Table 8 continued

American Indian/ Alaskan Native	< 1%	-	-	-	< 1%
Asian or Pacific Islander	2%	11%	57%	57%	26%
Other Race	< 1%	5%	1%	< 1%	< 1%
Multi-racial	1%	11%	5%	< 1%	1%
Age Group					
Generation X	52%	1%	4%	43%	36%
Baby Boom	60%	< 1%	13%	28%	55%
Pre-Baby Boom	64%	< 1%	26%	10%	9%

Note: Totals may not add to 100% because of rounding.

14.9% of the scientists and engineers in my sample were married or partnered to postsecondary teachers and another 1.3% of the women were partnered to educational administrators who may or may not have been scientists or engineers. Knowing more about the disciplinary backgrounds of these partners would likely increase the proportion of women in my sample partnered to academic scientists. 4.6% of the women in the sample, meanwhile, were partnered to physicians and surgeons. Other women were partnered to lawyers (2.4%), managers not otherwise indicated (2.2%), chief executives (1.4%), management analysts (1.3%), and general and operations managers (1.2%). Another 2.1% of women were married or partnered to individuals who had been out of the workforce for at least five years. No other occupation codes accounted for the occupations of more than 1% of the women's partners.

Overall, more than a third of the women (34.7%) were partnered to individuals who worked in colleges and universities. Many of the women also had partners who worked in other science and engineering related industries. Other than colleges and universities, the most common industries that the women's partners worked in were science research and development services (4.9%), hospitals (4.7%), computer systems design and related services (3.3%), and construction (3.1%). The women's partners also worked in legal services (2.4%); management, science and technical consulting services (2.0%); elementary and secondary schools (1.9%); architecture, engineering, and related services (1.8%); pharmaceuticals and medicines (1.6%); offices of physicians (1.3%); restaurants and other food services (1.2%); and banking services (1.1%). Many of these industries are related to science and engineering fields. The 2.1% of partners who had not been in the workforce in the last five years did not have industry codes. No other industry codes accounted for more than 1% of the women's partners.

The majority of the women had partners with graduate or professional degrees; 21% of the women's partners had master's degrees, 11% had professional degrees, and 39% had doctorates. This speaks to the high level of education of the women's partners. This is comparable to Nerad's (2004) finding that 61% of women with PhDs are married to men with PhDs, JDs, or MDs.

Table 9 shows the proportion of women partnered to other scientists across certain characteristics. Some of the most striking trends are those with regards to race and citizenship. More Asian women were partnered with academic scientists (20.5%)

and scientists in general (53.6%) than all other racial groups. None of the American Indian and Alaskan Native women, multi-racial women, or women from other racial groups were partnered with academic scientists. Furthermore, more non-citizens were partnered with academic scientists (24.8%) and scientists in general (57.4%) than individuals from any other citizenship category. More Generation X women were partnered with academic scientists (16.3%) and scientists in general (48.0%) than the older women. Furthermore, more of the women with professional degrees were partnered with academic scientists (26.5%) and scientists in general (45.4%) than the women with either master's degrees or doctorates. More women in physical science occupations (18.7%) and life science occupations (18.5%) were partnered to other scientists than women in other occupations (3.0% to 9.7%). 13.3% of women in opposite sex relationships were partnered to academic scientists; there were no women in same sex relationships partnered to academic scientists. The logistic regression that follows will reveal whether any of these trends are statistically significant.

Table 9: Percent of Women Scientists with a Scientist Partner by Demographic Characteristics in the 2000 US Census 5% Sample

	Partner Type	
Characteristics	Academic Scientist Partner	Scientist Partner
Overall	13.0%	38.4%
Metropolitan	13.7%	40.0%
Not Metropolitan	6.3%	20.3%

Table 9 continued

Race and Ethnicity Variables		
White	10.6%	33.5%
Black	13.5%	33.9%
American Indian/Alaskan Native	-	-
Asian and Pacific Islander	20.5%	53.6%
Other race	-	9.5%
Multi-racial	-	27.5%
Hispanic	9.4%	38.4%
Non-Hispanic	13.1%	39.2%
Citizenship		
US-born citizen	7.4%	28.6%
Born abroad of US parents	11.4%	16.5%
Naturalized citizen	7.8%	35.7%
Non-citizen	24.8%	57.4%
Age		
Generation X	16.3%	48.0%
Baby boomers	11.8%	34.9%
Pre-baby boom	6.4%	20.7%
Highest Degree		
Doctorate	15.8%	40.9%
Masters	7.1%	34.2%

Table 9 continued

Professional Degree	26.5%	45.4%
Field of Employment		
Computer Occupations	3.0%	32.3%
Mathematics Occupations	3.0%	35.5%
Engineering Occupations	8.6%	38.3%
Life Science Occupations	18.5%	42.7%
Physical Science Occupations	18.7%	44.5%
Social Science Occupations	5.3%	24.9%
Technician Occupations	9.7%	32.4%
Type of Relationship		
Married	13.3%	39.6%
Not Married	9.7%	27.9%
Opposite Sex	13.3%	39.1%
Same sex	-	8.3%

Results

In order to determine which women were more likely to be married to other scientists, I used SPSS to perform logistic regression. Both regressions used whether or not a woman was partnered to academic scientists as the dependent variable. As described in Chapter 2, both logistic regressions were run with three blocks. The first block contained demographic variables, the second block had occupation related codes, and the third block contained other miscellaneous variables. For variables such

as race or occupation with more than two categories, the largest group was used as the default or comparison group (See Table 8). Groups that did not have any women partnered to academic scientists were left out of the model.

The first regression used all of the women in the initial sample except for those in groups where no women were partnered to other academic scientists. There were 1,084 women in the unweighted sample and 24,210 in the weighted sample. (See Table 10 for information about the composition of this sample.)

Table 10: Demographic Characteristics of Academic Women Scientists and Engineers in the First Regression

Characteristic	Percent
Academic scientist partner	13.8
Scientist partner	39.9
Married	91.7
Metropolitan	94.0
Race and Ethnicity	
White	71.4
Black	1.1
Asian and Pacific Islander	27.5
Hispanic	2.5
Citizenship/Nationality	
US-born citizen	55.9
Born abroad of US parents	.5

Table 10 continued

Naturalized citizen	10.3
Non-US citizen	33.3
Age Group	
Generation X	36.6
Baby boomers	54.9
Pre-baby boom	8.5
Highest Degree	
PhD	50.3
Masters	41.7
Professional degree	8.0
Field of Employment	
Computer occupations	17.2
Mathematics occupations	3.3
Engineering occupations	2.8
Life Science occupations	26.4
Physical Science occupations	32.6
Social Science occupations	10.7
Technician occupations	7.0

The logistic regression showed many differences between women (See Table 11). Women in Generation X were 33% more likely to partner with academic scientists than Baby Boomers and women born before the Baby Boomer were 24%

less likely to partner with academic scientists than Baby Boomers. There were no significant differences between the women with respect to race or ethnicity. There was also no significant difference between naturalized citizens or women born abroad to US parents and US born citizens. Non-citizens, meanwhile, were 176% more likely than US born citizens to partner with academic scientists. Women with master's degrees were 29% less likely to partner with academic scientists than women with doctorates. Women with professional degrees, meanwhile, were 77% more likely to partner with academic scientists than those with doctorates. With respect to fields, there was no significant difference between women in life science occupations and those in physical science occupations. Women in all other occupations: computer science occupations (79% less likely), mathematics occupations (76% less likely), engineering occupations (37% less likely), social science occupations (55% less likely), and technician occupations (49% less likely), were significantly less likely to partner with academic scientists than women in physical science occupations. Finally, women in metropolitan areas were 53% more likely to partner with academic scientists than those in non-metropolitan areas and there was no significant difference between married and unmarried women.

Table 11: Logistic Regression Results for Academic Scientist Partners

Characteristic	Odds Ratio	95% Confidence Interval	
Age (compared to Baby Boom)			
Generation X	1.33	1.22	1.44

Table 11 continued

Pre-Baby Boom	.76	.63	.92
Ethnicity and Race			
Hispanic	.78	.60	1.02
Black (compared to White)	1.24	.85	1.81
Asian (compared to White)	1.02	.86	1.21
Citizenship Status (compared to US-Born Citizens)			
Born Abroad to US Parents	.03	.001	1.52
Naturalized Citizen	1.02	.86	1.21
Non-citizen	2.76	2.49	3.05
Highest Degree (compared to Doctorates)			
Master's Degree	.71	.64	.79
Professional Degree	1.77	1.57	2.00
Occupation (compared to Physical Science)			
Computer Occupations	.21	.17	.25
Mathematical Occupations	.24	.16	.36
Engineering Occupations	.63	.48	.84
Life Science Occupations	1.03	.94	1.13
Social Science Occupations	.45	.38	.54
Technician Occupations	.51	.43	.61
Other characteristics			
Metropolitan	1.53	1.23	1.91
Married	1.16	0.998	1.34

Given the large number of non-US citizens in the sample and the large impact this had on women's likelihood of partnering with other scientists, I ran a second analysis looking only at native-born US citizens. There were 628 women in the unweighted sample and 13,533 in the weighted sample. (See Table 12 for information about the composition of this sample). I used the same model as above, omitting the citizenship variables from the first block.

Table 12: Demographic Characteristics of US-Born Women Scientists and Engineers

Characteristic	Percent
Academic scientist partner	7.5
Scientist partner	29.3
Married	86.3
Metropolitan	91.7
Race and Ethnicity	
White	96.0
Black	1.4
Asian and Pacific Islander	2.7
Hispanic	2.1
Age Group	
Generation X	33.3
Baby boomers	56.8
Pre-baby boom	9.8

Table 12 continued

Highest Degree	
PhD	48.8
Masters	47.2
Professional degree	4.0
Field of Employment	
Computer occupations	19.8
Mathematics occupations	4.7
Engineering occupations	3.7
Life Science occupations	22.1
Physical Science occupations	27.1
Social Science occupations	16.3
Technician occupations	6.3

There were both similarities and differences between this regression and the previous regression (See Table 13). There were no significant differences among US born women across age, ethnicity, or racial variables. Women with master's degrees were 63% less likely to partner with academic scientists than women with doctorates and women with professional degrees were 33% less likely to partner with academic scientists than women with doctorates.[22] Women in life science occupations were

[22] This finding may seem to contradict that data in Table 9 that indicated that a larger proportion of women with professional degrees were partnered with academic scientists than either women with master's degrees or women with doctorates. This can be explained by the fact that only 27.8% of the women with professional degrees were US-born citizens.

31% more likely to partner with academic scientists than women in physical science occupations. Women in all other occupation fields were significantly less likely to partner with academic scientists than women in physical science occupations: women in computer occupations were 63% less likely, women in mathematics occupations were 55% less likely, women in engineering occupations were 45% less likely, women in social science occupations were 55% less likely, and women in technician occupations were 59% less likely. Women in metropolitan areas were 33% more likely to partner with academic scientists than those in non-metropolitan areas. Finally, there was no significant difference between married women and unmarried women.

Table 13: Logistic Regression Results for US Born Citizens with Academic Scientist Partners

Characteristic	Odds Ratio	95% Confidence Interval	
Age (compared to Baby Boom)			
Pre-Baby Boom	.97	.76	1.24
Generation X	1.10	.96	1.27
Race and Ethnicity			
Hispanic	.00	.00	2.71
Black (compared to White)	.00	.00	16.91
Asian (compared to White)	1.17	.80	1.73

Table 13 continued

Degree (compared to Doctorate)			
Master's Degree	.37	.31	.44
Professional Degree	.67	.48	.95
Occupation (compared to Physical Science)			
Computer Occupations	.37	.28	.49
Mathematical Occupations	.45	.30	.67
Engineering Occupations	.55	.36	.85
Life Science Occupations	1.31	1.13	1.53
Social Science Occupations	.45	.36	.56
Technician Occupations	.41	.27	.62
Metropolitan	1.33	1.00	1.77
Married	.90	.73	1.10

Discussion

In the overall sample, approximately 13% of all partnered academic women scientists had academic scientist partners and almost 40% had scientist partners. Previous research suggested that these numbers might be much higher. For example, Sonnert and Holton (1995) found that 60% of women with PhDs in science have husbands with PhDs in science and Sue Rosser (2004b) found that 60% of women scientists are married to male scientists. The estimates resulting from the current analysis are much lower than this. Furthermore, the current estimates are based on data that eliminates single women. My numbers more closely align with Xie and

Shauman's (2003) who found that 14.7% of women with science or engineering PhDs are married to men with science or engineering PhDs and Heylin's (2001) who found that among American Chemical Society members under age 40, 35.9% were married to other scientists.

One of the reasons that the proportion of women partnered to other scientists in my sample may be lower than expected is because the census provides two possible occupation codes that a science or engineering faculty member might choose to describe their occupation: the code for their specific science or engineering field or 220, the code that signifies a postsecondary teacher. As a result, the category of postsecondary teacher likely includes both scientists and non-scientists. Indeed, 14.9% of the scientists and engineers in my sample were married or partnered to postsecondary teachers. Another 1.3% of the women were partnered to individuals with the occupation code for educational administrators. Like the category for postsecondary teachers, this category likely includes both scientists and non-scientists. Overall, more than a third of the women (34.7%) were partnered to individuals whose industry code indicated that they worked in colleges and universities. Knowing more about the disciplinary backgrounds of these partners would likely increase the proportion of women partnered to scientists. This may mean that some scientist partners were likely coded as non-scientists. It may also mean that some women scientists were not coded as scientists. Although the Census data are unique in the amount of information that they provide about partners, using these data may have resulted in underestimation of the number of women scientists as well as the number

of scientist partners. It may be interesting and worthwhile to complete a similar analysis using the NSF SDR data even though it lacks some information about partners. As mentioned previously, that data set indicates whether a respondent's partner has a job that requires a bachelor's degree or higher in science or engineering.

The National Academies' *Beyond Bias and Barriers* (Committee on Maximizing the Potential of Women in Academic Science and Engineering & Committee on Science, Engineering, and Public Policy, 2007) used SDR data to look at women scientists whose partners had jobs that required at least a bachelor's degree in science or engineering. They found that more women in physical sciences, mathematics, and engineering had partners in science than women in biological sciences did. The current analysis of Census data indicates that, among US born women, those in life science occupations were the most likely to be partnered with other academic scientist partners, followed by women in physical science occupations. One reason my findings might differ from those in *Beyond Bias and Barriers* is that I only considered women partnered to academic scientists and engineers rather than women partnered to scientists or engineers more generally. It may be that the proportion of women partnered with non-academic scientists and engineers is lower in life science occupations than it is in other science and engineering fields.

In the first model, one of the strongest factors in determining whether a woman is partnered to an academic scientist is citizenship. Non-US-citizens were more likely than US citizens to partner with academic scientists. Furthermore, an analysis restricted to US born citizens only produced results that differed in multiple ways from

the analysis that included women born abroad to US parents, naturalized citizens, and non-citizens.

In the second model, with regards to both academic scientist partners and scientist partners, among US born citizens, there was no significant difference between women in different age groups. Because younger academics are more likely than older academics to believe that there is "more to life than work" (Jaschik, 2006), I had expected that one way that younger academics would create separation between "life" and "work" would be to partner with someone whose work differed from their own. Younger academics, however, may not see partnering with another academic scientist as something that would prevent them from having a life outside of work.

There were no significant differences between Hispanic women and non-Hispanic women or between white women and either black or Asian women in their likelihood of partnering with academic scientists. I had expected to find a significant difference between women from different racial groups. After finding few biographies of black women partnered to scientists (Jordan, 2006) and because black women are more likely than white women to marry men with less education than themselves (Tucker & Marshall-Kernan, 1995), I hypothesized that Black women would be significantly less likely to partner with scientists than white women.

Women scientists and engineers living in metropolitan areas, meanwhile, were more likely to partner with academic scientists and engineers. This is particularly interesting given the emphasis in the literature on difficulties related to dual career academic couples' job searches (Sweet & Moen, 2004). Women scientists and

engineers are particularly concerned about the difficulties finding jobs in the same geographic areas as their partners (Rosser, 2004a) and many universities have adopted policies to recruit academic couples (Wolf-Wendel, Twombly, & Rice, 2000). The fact that women in metropolitan areas are more likely to have scientist partners may be an indication that it is easier for couples to find positions in metropolitan areas where there are more varied job opportunities. This may suggest that universities in non-metropolitan areas need to work harder to attract dual career academic couples to their institutions.

Future research should involve conducting a similar analysis using data sets that provide more information about individuals' occupations. Because of the nature of census data, some scientists may have been overlooked. The ideal data set would not only make it easier to identify and include all scientists and engineers but also include women in same sex relationships as well as Alaskan Natives or American Indians partnered to other scientists. Future research could also be expanded to look at women partnered to non-academic scientists, the partnerships of women scientists in non-academic positions, and women scientists who remain single. Expanding the populations studied could help to clarify the patterns surrounding women scientists' partnerships (or lack thereof).

Overall, this analysis has provided new information about the partnerships of women scientists and engineers. It is the first to suggest that women scientists from countries outside the US are much more likely to partner with other academic scientists than are women scientists who are US-born citizens. This study also

provides new information about women scientists who are US-born citizens and partnered with scientists with regard to age, race, ethnicity, and occupation. There were no significant differences among women with regards to age, race, or ethnicity. Women with doctorates were more likely to partner with academic scientists than women with master's degrees or those with professional degrees. Women in life science occupations were more likely to partner with academic scientists than women in physical science occupations who were more likely to partner with academic scientists than women in computer occupations, mathematics occupations, engineering occupations, social science occupations, or technician occupations. Women in metropolitan areas are more likely to partner with academic scientists than women in non-metropolitan areas. This may mean that there is a greater likelihood of women with academic scientist partners finding jobs in metropolitan settings rather than in non-metropolitan areas. If this is the case, it is especially important for colleges and universities in rural settings to consider ways of attracting and recruiting dual career academic scientists.

WOMEN SCIENTISTS' RELATIONSHIPS

Our lives are composed of a complex web of intertwined relationships with other people and the world around us. A particular affinity for one interest or person can affect many of the other relationships in our lives. Although my interviews focused on women's relationships with their scientist partners, throughout the interviews the women talked about their other personal relationships as well. In addition to asking women about their relationships with their partners, I also asked about their current and past relationships with friends and family. Ultimately, the women's relationships with science impacted many of their relationships with their friends and family, and, in turn, their relationships with their loved ones affected their relationships with science. This includes their relationships with their parents, other people that they have dated, their partners, their children, and their friends.

I asked several questions during the interview that prompted the women to talk about their various relationships. These questions included the following:

- How did you decide to enter a career in science? Are there other scientists (or people in science related jobs) in your family?
- Is your current relationship your first relationship with a scientist? Can you tell me about the others? Is there a reason that you didn't have relationships with other scientists?

- When and how did you meet your partner? Did you seek out a relationship with another scientist or did it just happen? Did you want to be with someone in a similar field?
- Do you have children? How old are they? What effect does that have on your professional life?
- What role does science play in your personal life? Do you have friends who are scientists?
- Do you ever feel like you're in competition with your partner? For what?
- What do you like about being partnered to another scientist? Dislike?

The connection between the women's interest in science and their relationships with their partners, friends, and family members addresses some of the questions that I sought to answer. First of all, through looking at these statements suggestions emerge about the reasons that so many women scientists and engineers end up partnered to other scientists and engineers. Looking at women's discussions of their personal relationships also addresses how women's relationships with other scientists affect their personal lives with regard to both their interactions with their partners and their interactions with their families and friends. The women's statements allow me to address the ways in which a woman scientist's interest in science affects her relationships with her family of origin and her children, regardless of her partner's field of study.

Families of Origin and Science

Historically, many women scientists came from families of scientists (Schiebinger, 1999). Assessment of previous literature on the topic yielded two hypotheses to explain the propensity of scientists to partner with other scientists. First, for women who did not come from families of scientists partnering with another scientist might be related to the ways that a scientist partner helped them be better integrated in science. Furthermore, it might be that these women felt estranged from the nonscientists in their family and so wanted to form a partnership with a scientist.

Alternatively, women scientists and engineers with other scientists in their families of origin may partner with other scientists and engineers if science was a part of their family life during childhood. In other words, for such women, science was a normative part of family life.

Almost half (6 of 15 or 40%) of the women (Anna, Beth, Colleen, Frances, Laura, and Nicole) did not have other scientists in their families. Anna, Beth, and Denise, three of the older women in this group, were pioneers for their families: Beth (in her sixties) was the first in her family to go to college and Anna (in her fifties) was the first in her family to go away to college. Although Denise's grandfather was a dentist, she, too, was a pioneer of sorts for her family and her community. While her sister and friends married and had children right after high school, Denise (now in her seventies) went off to college. The sorts of careers that these women pursued set them apart from their families.

The younger women who did not have scientists in their families described their situations differently. Rather than being different from their families because of their professional pursuits, these women describe being different in other ways. Nicole (in her forties), for example, laughed when I asked her if there were other scientists in her family of origin. She indicated that at times the lack of other scientists in her family made it difficult for her to connect with family members. Her husband's family was a different matter as seen in the following exchange:

> Nicole: Um... so his family is a lot of scientists, so actually I feel like I fit with his family really well. And, some of my more distant family is more science-y, some cousins, we connect with all of that, those people very well. We like visiting with them, we just have a great time with them. My family's harder and there are relatives that aren't scientists that are probably a lot harder to, harder to connect with and talk with.
>
> Brianna: Just because you don't have as much in common?
>
> Nicole: Yeah... just because it's such a big part of my life and how I think, how I want to think, and things I like and appreciate, so it's harder.

Because she feels that her family thinks differently than she does, Nicole has difficulty relating to them. Indeed, this may be part of the reason that Nicole partnered with a scientist. She said that, "[Science is] such a big part of my life that it's the kind of thing that I want to talk about, and I want somebody who can understand that and talk about it with me." Similarly, Frances feels that her values differ from those of her family; the business people in her family do not understand her motivations. Frances said, "Because they're more sort of business-y, they couldn't understand why someone with a science background wouldn't become a doctor because that's where the money

is. So, [a career in science] was definitely not encouraged." Her family members do not understand her interest in her field, especially because with her science-based interests they think she could have chosen a more lucrative career path.

Two of the other women with non-science families of origin had family members who were more encouraging. For example, although Heather did not have other scientists in her family, both of her parents were academics. As a result of this, she felt more comfortable going into an academic career. She said that as a result of her background, "I knew what academics was like, I knew that I liked the independence of it." Marion's father, meanwhile, was an economist and she briefly had a stepfather who was a mathematician. She said of her stepfather, "He was a professor, a mathematician, and, um, he seemed to like it...I guess he had a lot of influence on me." Although neither Marion or Heather had parents who were in the same fields that they went into, they did have family members who modeled academic careers for them.

Two of the women had foremothers who, although interested in science, had been unable to pursue science careers. Jackie said, "My mother was very supportive. She always, my mother wanted to, go to college and go to college and do math and science, but she never could because it was in the Depression and all of that." Jackie did not, however, describe science as being a big part of her family's activities. Similarly, Kathryn's grandmother had started a PhD in a biological science field but did not finish. Kathryn said:

> [My grandmother] had a disagreement about how to analyze her data, which her advisor won and at the time that he won, her spouse got a job

> in another state and they moved with their two small kids and she never finished.

Kathryn's mother had also started a PhD (although it was in a non-science field) that she had been unable to finish. She recalls her grandmother continuing to conduct experiments in her basement after leaving graduate school and remembers that both her grandmother and her mother recognized and encouraged her interest in science. For both Jackie and Kathryn, their foremothers' interest in science encouraged them in their own scientific pursuits.

Nine of women interviewed (or 60%) had at least some scientists in their families (Denise, Evelyn, Gwen, Heather, Isabel, Jackie, Kathryn, Marion, and Olivia). Both of Olivia's parents were chemists, and both she and her sister ultimately pursued science-related careers. Denise recalled looking through her dentist grandfather's medical encyclopedias with great interest. She said, "Whenever I [would] go over to my grandparent's I'd pull out these books and look at them," those encyclopedias inspired her to dream of being a nurse or a veterinarian. Gwen described her family as a "family of scientists." Growing up, her father was really interested in her science projects, but they did not participate in a lot of science activities as a family. She said that both her family and her husbands' family "really like the fact that the other one was a scientist/engineer kind of person, so they were supportive of that." Both Evelyn and Isabel had fathers who were engineers. Evelyn said that her father "probably" influenced her. Isabel recalled science kits that her father used to buy for her. She said, "I got them in the mail, but I never did them and he never did them with me."

Ultimately, he was excited that she went into science but worried that the specific field she went into would not have very many jobs.

Although these nine women talked about the ways that scientist or academic relatives impacted their decision to study science, none of the women talked about ways that having scientists in their family impacted their decision to marry a scientist. Although Gwen said, "I know for our families in particular, they, both families really like the fact that the other one was a scientist/engineer kind of person," she did not say that her family background impacted her choice. Furthermore, none of the women who had scientist relatives, other than Denise and her grandfather's encyclopedias or Kathryn and her grandmother's experiments, even described science as a big part of their family lives. Thus, it does not seem to me that family of origin had a significant impact on the interviewees' choosing a scientist or engineer for a partner.

Women Scientists and Their Experiences in Dating

The study participants had different experiences in their dating lives, but these experiences were affected by their relationship with science. At least six of them had dated non-scientists and at least two of them had only dated scientists before they met their current partners (See Table 14 for a summary of the women's relationships). The extent to which the women sought out scientist partners differed. Although two women indicated that choosing a scientist partner was an explicit choice, for the rest of the women, the structure of science and the training it required put them in a situation where most of their potential partners were scientists. All of the women talked about

dating classmates or workmates. All but one of the women in my study met their partner through school or a professional setting. Nine of the women met their partners through classes or their department while they were in graduate school. Five of the remaining women met their partners at other stages of their career or through other professional interactions. The demands of school or work, as well as their interest in and passion for science, impacted their dating lives.

Table 14: Women Scientists' Prior Relationships

Name	Relationships with Non-Scientists[23]	Prior Relationships with Scientists	Meeting Current Partner
Anna	Yes – during college	Yes – during college	In graduate school
Beth	None	Yes – all were with scientists	In graduate school
Colleen	None mentioned	No	In graduate school
Denise	None mentioned	Yes – in graduate school	She was his PhD advisor
Evelyn	Yes – She found that they did not understand her passion	Yes – while she was a student and after she took her faculty position	Both in faculty positions
Frances	Yes – She found they did not understand her schedule or her passion	Yes – several relationships during graduate school	In graduate school
Gwen	Yes – a social science major when she was in college	Yes - two relationships in graduate school	In graduate school
Heather	Yes – with non-scientist academics and a business consultant	No	At a conference - she was in graduate school and he a was faculty member

[23] I did not ask the women whether they had previous relationships with non-scientists. This means that for some of the women I do not definitively know whether they had previous relationships with non-scientists.

Table 14 continued

Isabel	None mentioned – She felt she intimidated non-scientists	Yes – in college	In graduate school
Jackie	None mentioned	Yes – in college and graduate school but no long term relationships	Met through a hobby while she was in graduate school
Kathryn	None mentioned	Yes – She met a scientist as an undergraduate and they went to graduate school together	She was in graduate school, he was a postdoc
Laura	Yes – in college	Yes – in graduate school	Met at conferences – both in faculty positions
Marion	None mentioned	Yes – in college	In graduate school
Nicole	None	Yes – all were with engineers or scientists	She was in graduate school; he had a research scientist position
Olivia	None mentioned	Yes – in graduate school	At a conference while postdocs

Dating Non-scientists

Three of the women indicated that it was difficult to form relationships with non-scientists. One reason for this difficulty was non-scientists' perceptions of scientists. No one directly said that potential partners were off put because of stereotypes of scientists; however, the women indicated that nonscientists seem to be more deterred by their intelligence. Isabel, for example, noted that she did not have many options when it came to dating because she tended to intimidate the men. She said, "I can remember being at parties and telling people I was majoring in [a physical science] and having them back off." As Jackie put it, being a scientist "you scared people off." She recalled instances where she would meet someone and they would

dance, but as soon as they talked about what they did, the men would disappear. Frances said:

> I've had more than one man break up with me and then afterwards say that they were intimidated or afterwards, we were still friends and they'd say, oh I'm dating a woman, she's a little bit closer to my intelligence level, things like that.

As a result, Frances said "I'm not going to pretend I'm something I'm not, so maybe it's better if we're not in direct competition."

Even though the women held that non-scientists are often unwilling to partner with scientists, six of the women talked about previous relationships they had with non-scientists (See Table 12).[24] In three of these cases, these relationships happened when they were undergraduates, a time when their lives may have been more diverse. As an undergraduate, Denise met a previous nonscientist partner through his non-scientist sister. In her undergraduate days, Gwen said:

> Most of my friends were a combination of my high school friends who weren't engineers and then my college friends who were in the civil engineering group that I was in as well. But I had a boyfriend before I got kind of super involved with the civil engineering students.

Laura had a prior relationship with a social scientist. She said

> We had a lot in common when we were undergraduates, but when we were graduates, we were quite different. I was spending all my time on [my research] and he was spending all his time in sort of touchy feely psychology groups.

Perhaps some scientists partner with other scientists because of their own lack of understanding of other fields.

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[24] Because I did not directly ask the women about relationships with non-scientists, it is possible that other women had relationships with non-scientists but did not mention them to me.

Four of the women said that they were not looking for scientist partners, but rather they were looking for specific qualities in their mates. Colleen dated nonscientists before meeting her now husband. She said that the most important aspect of a relationship was connecting with her partner on a "personal level." Similarly, Kathryn was more concerned about how a potential partner interacted with her than whether or not he was a scientist. She said:

> So, I was really looking for a lot of things like... the way in which a person works with another person in a relationship and ... carries and shares loads and, uh, I was looking for a lot of independence and somebody who, who would allow me a lot of independence, but also somebody who would be very supportive

Olivia felt attracted to people who did something creative. She would have dated someone who was an artist, for example, but not someone who spent his days "pushing paper." Frances said:

> I wanted to be with like an architect or a photographer or something really exotic and cool, you know, um, to sort of get perspective and like, mix with the beautiful people, but it just doesn't really work, I found, at least.

She dated a mortgage broker, but the relationship did not work out. He neither understood her schedule nor her passions; he referred to her research as her "hobby." She felt the fact that he did not understand science, meant that their "conversations would be so stupid." Likewise, Evelyn said:

> It's appealing to be with someone who has the same type of expectations on them as far as studying and work and research goes. It's very, I found it very difficult when the person that I was dating had a 9 to 5 job or didn't understand what drives somebody who is an academic or a scientist.

At least two of the women, however, had positive experiences dating non-scientists. Jackie, for example, met her partner while he was in the military and before he attended college and studied engineering. Jackie, who at the time was in graduate school, said she did not intimidate him because he had women scientists in his family. Ultimately, he started working on a bachelor's degree and became an engineer. Frances, despite her negative experiences with nonscientists, found that non-scientists were less intimidated by her intelligence than scientists. She reasoned:

> A non-scientist who's dating a scientist knows what they're getting, and so they're, you know, I used to meet a lot of men in cafes, "oh look there's a girl in glasses reading a book," and so they were like guys who liked smart girls, so that also meant that they were looking for, so that also means that that was sort of a different dynamic. Whereas the scientist guy, I think they were looking for, it just was often a problem.

The scientists became intimidated when they started to think that she might be a better scientist than them.

Dating Other Scientists

Thirteen of the fifteen women had also had relationships with other scientists before they became involved with their current partners (See Table 12). Evelyn said she had dated many other scientists, "they were either, um, teaching assistants while [she] was a student or other faculty at the same rank when [she] was a faculty member." Nicole and Beth both said that all of their previous partners had been scientists, but from a variety of fields and departments. Likewise, Denise had a previous relationship with a scientist whom she met when she was an undergraduate. Frances, who is in an interdisciplinary field had dated men with varied backgrounds and suggested that because people in her field are "interdisciplinary people, we date

interdisciplinarily." She did, however, stay away from anyone whose field was too close to her own so that they would not be in direct competition. Marion and Isabel had both dated scientists in college; Gwen dated scientists in graduate school but not as an undergraduate; Jackie dated other scientists in both graduate school and college. Kathryn met her prior scientist partner as an undergraduate and they went to graduate school together. Laura and her husband met at a scientific conference; she saw him at many conferences before they became involved. Two of the women, Heather and Olivia, had not dated other scientists but had dated non-scientist academics.

Heather gave an interesting perspective on relationships with other scientists. She recalled that when she first entered her life science field as a graduate student, she got a lot of attention from the senior men in the field. She said that all of the senior men would "jump on you" not in seeking out an affair, but because they wanted to talk to a "pretty woman." She noted that as the years passed the men realized that she had become established in the field and she would be a part of their professional circle. At that point, they would stop flirting with her. She noted that while it made her a sort of "science toy" for some colleagues, it also helped her to meet people. Her anecdote suggests that one reason that some relationships form between scientists isbecause male scientists enjoy being able to share their interest in science with women.

Thirteen of the women I interviewed had relationships with scientists before they met their current partners. When I asked them whether they sought out a relationship with another scientist, ten of them indicated that they were not seeking out a relationship with another scientist when they met their partners; rather it was

something that "just happened." They had many ideas about why relationships between scientists are so prevalent; the most common suggestion was that scientists spent a lot of time around each other. Indeed, all of the women met either their past or their current partner during an intense time when they were spending a lot of time with other scientists – in graduate school, during summer research opportunities, or at conferences.

Scientists form relationships with other scientists because the greedy nature of science often meant they spent a lot of time with other scientists. As Nicole put it "those are the people you see" or as Gwen put it "those were the people that [she] most interacted with when [she] was in graduate school." Or, as Frances said "when you're in graduate school forever and ever and ever, you meet lots of scientists." Similarly, Beth said that science students take a lot of science classes and that "being in the same department just throws you together for a lot of hours." Both Marion and Isabel dated men with whom they were taking classes. Kathryn said it was inevitable that she would date another scientist because scientists "tend to know a lot of other scientists" and after all, she said, "Who am I going to meet? I spend all of my time in this one place and I don't go anywhere else!" Similarly, Heather said, "I was in graduate school, I didn't meet anyone besides scientists and other graduate students." Beth speculated that scientists' experiences with classmates might differ from those of individuals in other fields. She suspected, first, that "in science and engineering and mathematics you have more of a hierarchy of classes so that you may see people multiple times," which helps students to bond with one another and, second, she said:

> In grad school, then you know, you have, most science students, are supported by research assistantships or teaching assistantships, whereas in humanities it's catch as catch can, there are only a few assistantships and so people have to get other jobs, so their lives are in a sense wider, there's a wider scope for them.

Evelyn also dated other scientists because those were the men who were around. In addition, she noted, "It's appealing to be with someone who has the same type of expectations on them as far as studying and work and research goes." Other women noted that these relationships formed because of the extent to which scientists socialize with colleagues from school or work. Beth noted that scientists form a lot of study groups and spend time together this way. Colleen met her husband at a school social event while she was in graduate school and Frances met her husband because they were both members of a group of friends composed of graduate students from the same department.

Passion for science may also underlie the development of romantic relationships between scientists. Nicole said that "it's such a big part of my life that it's the kind of thing that I want to talk about, and I want somebody who can understand that and talk about it with me" and Beth said, "It's partly the passion about the work thing." These reasons may all be interrelated. As Anna put it, "when you're in grad school, it's a very intense experience. You don't have a lot of free time per se and all the time you're in classes with people who are scientists and you tend to socialize." In other words, science's all consuming nature not only means that scientists spend a lot of time with other scientists, but also that they bond with each other. As we will see later, this all-consuming nature of science can sometimes create

problems for women scientists and engineers in relationships with other scientists and engineers.

Finally, women scientists may form relationships with other scientists because of their desire to be with someone else who is smart. Kathryn, for example, said, "In high school I had dated a guy briefly who was smart but not very smart and I felt way smarter than him and I thought that that was actually kind of a problem, that I wanted somebody challenging." When I asked Marion whether she sought out a relationship with a scientist she said she might be "subconsciously seeking them out." Marion told me, "I've actually always been pretty aware of wanting to be with somebody who was really intelligent and always valuing that." Although both of these women indicated that they considered their scientist partners to fulfill this desire for an intelligent partner, neither of them indicated that a non-scientist have been unable to fulfill this desire.

Meeting their Partners

Given the number of years that scientists spend in graduate school, the age of most graduate students, and the number of hours of work that graduate school requires,[25] it is not surprising that many of the women formed relationships with their partners while they were in graduate school. Ten of the women, Anna, Beth, Frances, Gwen, Isabel, Kathryn, Marion, Jackie, Heather, and Nicole, all met their partners while in graduate school. Seven of their partners were also graduate students or

[25] Between 1978 and 2003 in science and engineering fields, the average time to degree for doctoral students was between 6.3 and 7.5 years (less periods of non-enrollment) the average age at time of doctorate was between 31.7 and 34.2 years (Hoffer & Welch 2006).

postdocs at the time; Jackie whose husband was in a non-science job and Heather and Nicole whose partners had finished school were the exceptions to this rule.

Denise met her future partner in the 1960s. At the time, she was a faculty member and he became her graduate student. She said:

> In my current [relationship], I'll just tell you, because it's forbidden now, but at the time. So, my husband was my student and we didn't get married until after he got his degree. Well, anyway, which he tells everybody and everybody says, "hmm," because nowadays, that would be just forbidden, but at that time, nobody paid much attention to it.

The relationship began before he had chosen her as an advisor.[26] They dated while he was in school, but did not marry until he had graduated. Evelyn was also in a faculty position when she met her partner, a fellow member of the faculty. They had been a part of a group of young faculty who occasionally socialized and eventually started dating.

At times, like Evelyn, the women knew their partners for a while before they became a couple. Frances and her husband were friends for years before they started dating. She said that, "it actually was around September 11th, [2001], when everybody was feeling really intense around things, that we were like, life's too short, let's just do this." Likewise, Laura met her husband at many conferences over the years before they became involved.

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[26] When I asked Denise whether she thought that the relationship affected their advisor/advisee relationship, she said:

> Uhm, I don't think so. I probably bent over backwards the other way. At least he tells me, like on the qualifying exam I asked him the hardest questions of anybody did and I, you know, I'm sure, but I tried not, I tried to make sure that it didn't affect it. So, it's, it's kind of hard."

Although their relationship may have been unusual, it was not entirely unprecedented. Agnes Fay Morgan, who helped to organize the home economics department at the University of California, Berkeley, married one of her students in 1908 (Nerad, 1999).

Laura is not the only woman who met her partner at a conference. Conferences are often described as a place where scientists can network with each other. Apparently this networking can result in both professional and personal connections. Olivia met her husband at a conference while they were both postdocs. Heather also met her future partner at a conference and pursued a relationship with him. At the time, he had recently gotten out of a relationship. Heather said:

> He didn't like me very much; I basically kind of jumped him at the conference. He thought I was a bit of a brat but quite cute, um, and then I stalked him. So I sent him cookies and, oh, dirty poems and postcards and little wind up toys that bounced. And, did that for about a year, met him at conferences, flew out a few times to see him, and after about a year ... I basically moved in ... I told him I moved in. He had no say. I decided he was the one for me, I'd had a lot of relationships and, I knew what I was looking for.

Long distances separated three of the women from their partners early on. At the time she met her partner, Heather was hoping to find a long distance relationship that would both help her get out of a relationship that she was then in and not be too much of a distraction from her studies. Olivia and her future husband corresponded after the conference and traveled together. When her postdoc ended, she decided to move to the institution where he was finishing a postdoc so that they could be together. Laura and her husband also started their relationship while they were living apart. She said, "I met him through, um, conferences and we were, we turned out to be at two different universities in the same state and we ended both working together and getting married."

Jackie's situation was unique from the situations of the other women. While the other women (1) became involved with men who were already studying or

working in science related fields and (2) met their partners through school, at work, or through a conference, Jackie met her husband while he was serving in the military. While they were dating, he went first to community college and then to a university to study engineering. She said:

> Oh, and then after we got together, he went back to school and finished his, he went to community college. And, I was able to help him because he hadn't done science or anything for years, well, not years, at that time, he was only 21, but, um, he had been steered into university into humanities classes and things like that, but it became quite clear that he was better at math and things like that. But, he had to start originally from the beginning... But, if he hadn't met me, and then this friend of ours, we had to help him with his math and everything, because he forgot everything he knew, and it turned out, he'd just been steered into the wrong avenue, and that was his calling.

When she found her current position and relocated, he came with her even though they were not married. Once he finished his bachelor's degree, he proposed.

At least five of the women who dated men in their own departments or fields tried to keep the relationship hidden from their colleagues. For the women in graduate school, this included their peers and advisors; for the women who had finished their degrees, it mostly included their peers. While it was not specifically forbidden, Denise, who was dating her student, kept her relationship hidden out of necessity. Although she said that at least one person in the department knew she was involved with her partner, as noted earlier she felt that "nobody paid much attention to it." Anna was in a similar situation having been a student in a class taught by her partner. A couple of the other women noted that they tried to keep their relationship from their colleagues at first because they were unsure whether it would last or how their colleagues would react. As Evelyn said "You never know how long something's

going to last and you never know how people are going to perceive you or so it just seemed smarter to keep it quiet." Likewise, Nicole said, "I think we were both a little nervous about letting our colleagues know until we were a little more sure that this was going to be [pause] real." None of the women, even Denise who formed a relationship with one of her students, was concerned that their relationship would be frowned upon.

Ultimately, the women said that when their colleagues found out that they were dating another scientist, they were happy. Nicole said that "there was a lot of enthusiasm" among members of their department and their colleagues held a wedding shower for them. There were a few exceptions to this rule. Frances related that one of her advisors was initially disappointed to learn that she was in a relationship with anyone because it would likely distract her from her work:

> She would have had any issue with me being with anybody because being with anybody would mean less time working. And, she was like, "Oh, I know how this is going to go, next thing you know you're going to be working on a wedding and then next thing you know you're going to be working on kids and then next thing you know," you know. And, she was just like that, she always saw things from her perspective, which meant it's all about how much work I can give her. So in that way, she was not happy about it but she also understood pretty quickly that I was going to be working more with a scientist than I would be with a non-scientist, so in that way she was happy.

For this reason, Frances felt that her advisor took solace in the fact that her partner was a scientist. Nicole and Olivia both said that their colleagues wanted to protect them and make sure that the relationships would be in their best interests. The only woman who faced a negative reaction from either her colleagues or her partners' colleagues was Heather who took a postdoc position at her partner's institution. She remembers

many of her new colleagues did not take her seriously at first, but that they eventually came to respect her.

At least nine of the women indicated that having other scientist couples around them made it easier to be partnered to other scientists and engineers. Isabel said that, in her department, "It actually was fairly common in that program" for students to date one another. As a result, she and her partner did not feel any need to conceal their relationship. Gwen felt similarly about her experiences in graduate school and when she started dating her partner. Likewise, Colleen said there was little reaction when she and her partner became involved because "it's very common for graduate students to become involved with other people in the university environment." Five of these women, those who worked in the same departments as their partners, said that having other couples in the departments that they work in had made it easier to be a couple within the department.

In short, women's interest in science affects the way they date. At times, it means that they have a difficult time connecting with non-scientists either because non-scientists are not interested in relationships with scientists or because they felt misunderstood by non-scientists. As noted above, some (at least six) of the women did form relationships with nonscientists before becoming involved with their current partners, but almost all (thirteen) of the women also had previous relationships with other scientists. Many of these relationships occurred when the women were in college or graduate school. The majority said that they were not seeking out a relationship with another scientist when they met their partners, but rather it was

something that "just happened" through the course of their normal interactions with fellow graduate students, postdocs, and faculty members, while catching up with long time acquaintances, or while meeting new people at conferences. The women speculated that these relationships are so common because of the time that scientists spend among other scientists. Ten of the women met their partners while they were in graduate school. Some of the women who worked in the same department as their partners kept their relationships hidden from their colleagues either to ensure that the relationship would work out or because one partner was some sort of the instructor for the other partner. Regardless, most of the women indicated that their colleagues reacted positively to their relationships.

Being Understood

At least nine of the women spoke about being "different" in some way. As mentioned above, some of the women talked about not fitting in with their families or being snubbed by nonscientist suitors. Others talked about being "geeky." When describing the science-related activities in which she and her husband took part, Beth described herself and her husband as "sort of science nerds." Frances reported that she was "one of those dorky people" who knew even as a child that she wanted to be a scientist and enjoys the "geeky" science conversations that she and her husband have. When Gwen described the science related conversations that she and her husband have, she said, "We're just nerds at heart" and Isabel recalled "being a nerdy [scientist]" who didn't date much or go to many parties. Laura did not describe

herself as geek, but said that her rebellious teenage son "thinks of [her and her husband] as nerds."

Despite feeling different from others in general, all of the women talked about being understood in some way by their partners. Indeed, the biggest way that the women's interest in science impacted their relationships with their partners was that they felt understood by their partners. The word "understand" was used repeatedly as the women described their relationships. Although one might expect any woman to say that her partner understood her, what is unique about these women is that they felt that their partners understood aspects of their professional lives in an informed way. Partners were said to understand (1) the topics of interest to the women, (2) the women's passion for science, and (3) the demands their careers placed on the women's lives.

Understanding Their Interests

Seven of the women talked in some way about how they liked the fact that their husbands understood their scientific interests. For Beth and Denise, it was important that their partners share a general interest in science. Frances, similarly, likes that she and her husband share an interest in science, for example, identifying the rocks, plants, and animals they encounter when hiking. They take turns explaining to each other phenomenon within their areas of expertise. Anna said:

> We like, I like a lot of other science things. My husband's a big fossil collector and I like to do that, those kinds of things. So, you know, we go to the beach, we're looking at rocks... I mean we love lava flows in Hawai'i, you know. I guess it's just the kinds of things we're interested in. So, I guess that's one of the pluses of being married to another scientist.

Jackie noted that when your science fields are complimentary "you can tell them something about it and they kind of understand about it a little bit, that's actually kind of nice." Even though she and her husband do slightly different sorts of work, Kathryn said, "When I talk through what I'm interested in, I think it's, it's a fairly simple leap for him to understand why I find x or y a compelling issue, even though that's not something he does." Similarly, Isabel said, "I like that he understands what I do and that I can sort of bounce ideas off of him." In this way, being partnered to someone who understands her work is clearly a benefit.

Other women talked about how they liked that their partners understand their specific research interests. Laura was pleased that she and her engineering husband "have a shared vocabulary, which is maybe different from other people's vocabularies." Jackie likes that her husband can understand and give her feedback on her work. She said, "It is nice to be able to say something about what you're doing and have them somewhat understand and be somewhat interested in it also – that's good." Overall, having their partners understand their interests is a positive thing for the women. As Marion said, "I feel it's very natural to be able to talk about things that are of interest to me to my husband and to do it at any time, so I really like that." Similarly, Isabel said "Because it's such a big part of my life that it's the kind of thing that I want to talk about, and I want somebody who can understand that and talk about it with me." Nicole said that she likes that her partner can understand her work and talk about it with her. Furthermore, having a scientist partner has probably helped her stay in science because, "he's really receptive to my kind of work, that he kind of

helps me in some ways, we help each other in our work. Um, that he doesn't think of it as odd or strange or anything."

Understanding Their Passion

The women liked not only that their partners understood the content of science, but they also understood their passion for science and way of thinking. Frances, for example, found that when she was dating nonscientists, they did not understand the things that she was excited about. However, she said, "[My husband] understands the way I think and he thinks in a similar way." Similarly, Marion said that one of the things that she likes about being partnered to another scientist is that she likes "thinking like a scientist." Nicole thinks:

> [We both] would be frustrated [laughs] having a close interaction, a close connection with someone who didn't get [the scientific method] at least at a basic level because it pervades how we think about things and therefore how we talk about things.

Evelyn and Kathryn also feel strongly about their partners' scientific style of thinking. Evelyn calls her husband "a skeptical [and] critical thinker" whereas Kathryn likes that her husband is "innately curious." On a related issue, Heather likes that her partner understands that she is an intelligent woman. She said:

> I don't have to hide my arrogance or hide my intelligence... I know academic women who are married to normal people who become very different people at home, you know, they lose that intellectual aggression. I don't have to do that.

But, women scientists and engineers might not always find that they think in the same ways as their partners. Gwen said that, being an engineer, she tends to approach problems like an engineer whereas her husband, being a scientist, tends to

approach problems like a scientist. She talked about working on home improvement projects where she would be happy with, for example, a ceiling fan that fit their needs while he would want to find the optimal ceiling fan.

Understanding the Demands

Overall, the women felt that their husbands understood their career demands in a way that nonscientists would not. For Beth, this means understanding her colleagues. She said, "If you were married to somebody, that, 'Oh I don't want to talk about science at all, I'm not a scientist, don't you invite those geeky colleagues or yours over,' that would be hard." She thinks it would be difficult to have a non-scientist husband who did not accept her colleagues. As a scientist himself, her husband does not have that attitude.

Other women, like Olivia, appreciate that their husbands understand their work schedules and their deadlines. Colleen said that her relationship with her husband has benefited her because he understands "what [she goes] through on a day-to-day basis." Nicole finds it important that her partner "understands the kinds of low points that...can happen with this kind of career and can be supportive" in way that a nonscientist might not. Laura feels that being partnered with another scientist means not only that they share an understanding of jargon, but also an understanding of things like conference paper and proposal deadlines. She said:

> I guess I like that we can understand each other... we have this shared vocabulary, so we can explain things to each other well. We each understand the other's deadlines and stuff like that. We understand, if you've got a conference paper due tomorrow and you don't get it in by tomorrow, it won't be taken at all. We understand proposals and their

> deadlines and we understand each other's disappointments when a proposal or paper fails.

Anna, similarly, felt that her husband understood the pressures of her job and the reasons that she had to travel. Colleen said that her husband understands "the stress of being able to find funding, support a group, or being able to find graduate students." Because they are both involved with these activities, her husband is able to offer her support. Finally, Evelyn adds that because her husband also works in her department, he is able to understand her career demands on that level. She said:

> He understands just everything that's going on in my professional life because it's the same stuff that's going on in his professional life. So, he's supportive rather than kind of wondering why I spend that many hours working and stuff like that and why I place such a high priority on work ...it's very convenient to be married to somebody in the same department, because, you know, we have a similar set of references and we can talk about the politics that are going on in the department and it's helpful.

Given the demands of academic science careers, it is unsurprising that the women felt it was important that their partners understood the stresses of their careers.

Frances related a story that illustrates the way in which her scientist partner understood and supported her career demands in a way that a nonscientist might not. When she and her husband were in graduate school, she had to work over Memorial Day weekend because that was the only time she could book a particular machine.

> I had a machine that I had booked through the entire Memorial Day weekend, so I would work like 16-hour shifts Friday, Saturday, Sunday, and Monday through Memorial Day. And that was just demoralizing and awful, so he came and he like made a picnic, made like a barbeque and cooked it all up on the barbeque and then brought a tablecloth into the lab and like made a picnic dinner in the lab. And,

> like, I don't think a non-scientist, beside the fact that a non-scientist wouldn't have the confidence to come to the lab with that kind of food, a non-scientist could have never understood how important that was at that time – that I was missing Memorial Day because I had to be on this machine. Someone else would have been mad about it, but he instead was like, with me on it, and then he could bring work, too, so that he could be caught up, too, so that we could do something fun – you know?

Her partner's understanding of the situation, both in terms of her schedule demands and the culture of the lab, allowed him to be supportive of her in way that a nonscientist might not have been.

Beth also said that her husband has never questioned her schedule. "There's never any like, what do you mean you have to observe from midnight to six o'clock kind of thing, [we're] always very tolerant of each other's schedules that way." Similarly, they both understand each other's travel demands. A part of understanding these demands is helping out. Beth described her husband as an eager participant in childcare particularly when she needed to go to a meeting or travel. Evelyn's partner and Colleen's partner have similar attitudes. Evelyn said:

> I never have to explain why I need to go back to the office or I need to go on a trip or I need on Sunday to really read a grant proposal and he's got to take the baby and take care of her.

Because their partners understand the demands of the jobs, they help out with the children.

Gwen just felt understood by her partner in an intrinsic sense. She described her husband as "supportive both on the technical side, but also on the emotional, psychological, he also knew where I was coming from." She said "Other people, they

kind of laugh and say and ask us what do we talk about over dinner at Thanksgiving something like that."

The Impact of Being Understood

When the women talked about being understood by their husbands, two things are apparent: (1) their husbands are providing a support network for them, like would happen in any good mentoring relationship and (2) their husbands are accepting of their professional selves, something that the women did not find in their relationships with nonscientists. When the women talked about how their husbands understand their interests and passion for science, they implied that they do not feel this type of support in their interactions with nonscientists.

Kathryn reported that when she and her husband became involved, he was specifically seeking a scientist partner because he wanted someone who could understand him. There had been a lot of tension in his previous relationship, and he thought being in a relationship with another scientist would lessen it. She said:

> He wanted to be with somebody who understood what the motivations were and the tempos and ... he's incredibly permeated as a scientist and I think he wanted somebody who really could understand it.

Apparently, some male scientists are looking for the same things as women scientists with regards to being understood within their relationship.

The one woman who did not report being understood in this way was Jackie, the only woman whose husband did not have a research career. Her husband's career allowed him to leave his work at the office, which was more difficult for her to do. She said:

> He's okay with the large deadlines and big proposals to write and things like that… I mean a big deadline is one thing, routine – he doesn't like that. He doesn't like it if I'm working on the computer, he's sitting over there playing a computer game and I'm sitting over here working, he doesn't like that. He wants your attention to be at home, and, and that I think is good because it, it, it means that it pulls you away from being, your whole life focused on your job, because you have someone, they're not going to get upset about it, they're not going to yell at you, but they're just like, you know, they'd rather not, but if there's a big emergency, if you have to do that, no problem.

She described her husband as understanding to an extent but also as wanting her to keep her work life contained. Although this is different from the model followed by the other women, she managed to be successful while leaving her work at the office. Jackie also described feeling guilty when she travels because it means leaving her husband alone to do the housework and because she worried about him being lonely. Again, because his career differed from the careers of the other women's partners and he did not travel, she seemed more attuned to the way that her career impacted her personal life than some of the other women that I interviewed. Similarly, Isabel, whose husband had a research position in a government lab, said that she tried to leave her work at the office. Because of the structure of his job, her husband "tends to be kind of a 9 to 5 kind of person and so [she tends] to just follow that model." It may be that women whose partners are academic scientists work longer hours more often because their partners work long hours as well and reinforce the behavior.

It seems as though when two academic scientists partner, the demanding schedules that some academic scientists keep become normalized and they both accept the long hours and demanding travel schedules more than they might otherwise. The only exception to this rule was Olivia. Although she and her husband do work from

home as necessary, she said that they try to limit the extent to which they talk about their department at home. As she said "I mean, you have it all day – I don't want it in the evening." This further emphasizes the way that a science career can be contained, particularly in a relationship where such containment is important to one of the partners.

Many of the women indicated that despite not always fitting in in general, they felt understood by their partners. Women used this word repeatedly throughout the interviews and it was by far the most positive aspect of the women's relationships. The level of understanding by their partners that the women described – of their interests both generally and more specifically, their passion for science and the way they think, and the demands of their careers – is what I would call an "informed understanding" wherein the women's partners' knowledge about scientists' professional lives allows them to better understand their partners. Being understood by their partners had positive ramifications for the women by providing them with support and acceptance. Nonetheless, when both partners are accepting of each other's career demands, it may make it easier for a couple to work long hours.

The Stresses of Academic Science Careers

Partnering with another scientist was not without its drawbacks. The majority of these have to do with the stresses that arise from academic science careers. The women discussed the way that science becomes too large of an aspect of their lives; the way that they end up in competition with their partners; and the ways that their

careers require them to spend time apart from their partners either on account of fieldwork or because they have positions in different locations. At times, these aspects of their careers end up negatively affecting their relationships and their personal lives.

Science as All-Encompassing

As noted previously, both science and academic careers are said to have an all-encompassing nature. For the women I interviewed, the all-encompassing nature of their careers, combined with having partners on similar career paths, often meant that they felt science played too large of a role in their lives. As Colleen said, "As scientists, we're, you know, very sort of focused on our work, so it sort of permeates many aspects of our lives, I would say." For Anna, the all-encompassing nature of science is particularly apparent with regards to her friends. She said:

> There's no breadth, you know. And, that's, I miss it more than my husband, and I don't really think it bothers my husband that we don't know many people outside of [our field], but it bothers me because I like, you know, I like having a broader base...We have all the same friends. You know, we're in the same department, you know, we don't have this broad mix of people that you would have.

Similarly, Evelyn said, "I think maybe my horizons aren't quite as broad as they would be if I were married to [a non-scientist]." Nicole noted that although she would "be better at talking to people who weren't scientists" if she was partnered to a non-scientist, she is unsure what she would talk about with a nonscientist partner.

Olivia noted that being partnered to another scientist means that she and her husband often do not have the time they would like for their personal life because being an academic scientist is "just, it's a very busy job, with a lot of commitments." Marion found that her life as a scientist invaded her personal life. In Marion's case,

however, she felt that it was largely due to her husband's passion for science. She said:

> You can't really ever turn off your professional life. So, my professional life never entirely turns off because, um, there's always, there's this scientist there who's very intense and interested, he's not intense, but he's very focused on, um, the science.

The all-encompassing nature of science is not always a bad thing, however. Anna remarked that with her children out of the house she and her husband were able to work long hours. She said:

> We went to being like graduate students. I mean, we worked, sometimes we work until 8 or 9 at night... because we like what we're doing, we enjoy what we're doing and it's fun. It's not like we hate to do this, so it's, so we have really exciting careers and it's good.

Likewise, Denise said that she and her husband are both "workaholics" that "probably reinforce each other rather than, you know, I don't know, going home and relaxing, doing something else or talking about something else." Because of this, they have little time for a personal life, but at the same time, she said:

> I like science and I like to do it all the time and I mean, I do have these other interests, but I really like it, and so, if I was married to somebody else who wanted to do all sorts of different things all the time, I think that would grate on me.

Nicole echoes this sentiment noting that she works longer than she would if her partner were a nonscientist. She said, "I don't feel like it hurts our personal life or spoils it with work, because we both love our work, that's fine." This is an interesting contrast to some of the women discussed above, particularly those whose husbands have nonacademic jobs, who try to limit their hours so that it does not follow them home.

Competition

Very few people want competition in their personal lives. But, for women who work in fields similar to their partners, this can happen all too easily. At first, Marion said that she and her husband are in competition for grants, publication records, and being the "better scientist." But then she said:

> I don't think I could really exactly be in competition for being the better scientist. Uh. [Long pause]. I guess, I don't know, I mean at this point, I kind of I just want to sort of be the best scientist I can be, but still have a sort of life, you know, like once in a while be able to do something else.

She seemed to have accepted that her husband might be the more prominent scientist, rather than let competition be a problem for them.

For Nicole competition is only a problem locally. She does not feel that she and her husband are competing on a national level because there are always multiple awards and grants given. But she feels any competition is "probably more at the departmental level ... because we're both in a department and it's a small department." When administrative positions are open, for example, only one person can have the position even if they both want it, but "at a national level, you can have your own reputation and you can each do well." Sometimes being in the same department raises some added issues. Nicole said that after she got a departmental administrative role they had both wanted, she was sometimes privy to information that she could not share with her husband even though he would benefit from knowing. She said "those kinds of things are really hard because we have a really open relationship." Evelyn also feels most competitive about what happens on a local level,

especially when raises are given. She said, "I look at the percentage raise and I sometimes think, you know, did he really have a better year than I did?" She said that she tries not to worry about it and that her husband does not feel the same way, he laughs at her for getting upset about it. Gwen and her husband also do not compete on any sort of national level, but confine their competition to a more personal level such as who knows more about a particular issue.

For Frances, being in a slightly different field from her husband eases any tension surrounding competition because then it is less obvious who is doing "better." In their new jobs, hers as a tenure track professor and his as an instructor in the same department, however, this tension has been a problem, particularly because of ways that their department has reinforced the distinction. She said:

> When we first got here, it was really obvious, we'd like show up at an office and they'd be like, oh, well, we have keys for you, but we don't have keys for you yet because we didn't bother because you're not important or like, you know, I went to training and they were like, that training's not for you and then sent him home or things like that that really, they were really harsh.

The particular demands of being a first year faculty member compound this problem. Her husband recognizes the stresses that she is under and so does not want to complain about the problems with his own position. Frances is particularly troubled by the situation because the reason she has a tenure track position while he does not is a matter of which position was open at the time rather than an issue of talent.

Heather has experienced similar feelings. She said she compares herself to her husband with regards to whether he got a grant or was asked to be on a review committee. When he is successful, she said, "You're not jealous of the other person,

you're genuinely happy for their successes, but if they're doing well and you're not it freaks the hell out of you." Both she and her husband have gone through periods where they have watched the other one be more successful and those times have been quite difficult for them.

For Laura, competition has been an issue in her relationship. When she started catching up to her husband in their field and he could no longer be the senior member of the couple, he felt threatened. As Laura put it, "I think that he didn't like it as well when I was, uh, becoming a full professor and had my own ideas on what was good on research and what wasn't."

For both Jackie and Isabel, the women whose husbands worked outside of the academy, competition was sometimes related to the different structures of their work. For example, Isabel sometimes felt competitive with her husband because his government job allowed him to write more papers than she could. She said, "Sometimes I feel like we get into a competitive mode, a little bit. But I try to talk about it so that it doesn't get too bad." She added that it would be problematic if she "compared [herself] to him too much." For Jackie, meanwhile, the competition in her relationship differs slightly in that it is related both to their differing levels of education and the status of their jobs. She recalled that her husband postponed proposing to her until he had finished his bachelor's degree. She said, "I think he was worried that if he didn't finish university and I had a PhD, there'd be a problem." At times, this sort of tension arose in another way in their relationship. She said:

> He gets really annoyed at me for telling him, he should hit a tennis ball a different way or anything because I'm, I'm and I think, you know,

> has to do with the fact that I have, a more elevated job and degree than he does.

Three of the women that I interviewed said that competition was not an issue for them. Kathryn, Denise, and Olivia all said that they are not really in competition and did not tell me anything that indicated otherwise.

Time Apart

Another way that the demands of academic science careers impact the women's relationships is when it forces them to live apart from their partner either because they are in school or have jobs in different cities or because of a need to travel for extended periods of time for field work. When Heather met her husband, they were living in different countries. She described this as a benefit for a few reasons. First of all, she planned to move to a new institution and a new city anyhow after finishing graduate school. But also, she said, when you live away from your partner "you see them once a month, it gives you a nice break from your work and you know, you don't have to deal with living with someone else." She and her husband found themselves living apart once again right before taking their current positions, and again found some benefits from the situation because "to get a good job in a great place… you've both got to be really brilliant, really good and living apart for three years can really help do that, you know you've got no one to distract you."

This is not to say that Heather thought living apart from her husband was always easy, she also pointed out that it was quite difficult for them. She said:

> I commuted the first year, that was stupid, and then I went on strike and said he had to do it. I basically got tougher and tougher and once he

> started doing to commute, he started taking being on the job market as a couple fairly seriously.

Commuting to see each other was difficult and her husband was tired of living by himself. Furthermore, relocating to be in the same city put stresses on the relationship. Her husband was reluctant to move because he felt that Heather was unsure that she really wanted an academic career and because he was averse to leaving the city where most of his family was located. After deciding that she wanted to take the academic job and move, Heather said, "it was rather rough because I was basically dragging him away from a city that he loved."

Other women talked about the downsides of living apart from their partners. Colleen and her husband were separated for two years while they were both doing postdocs; Olivia and her husband were separated from the time they met until she finished her postdoc. Kathryn and her husband also spent time apart after graduate school. She said they "managed to not be in the same place for more than eight days in...five years, it was a really long time," until they managed to both find jobs in the same city. She said that being apart earlier in their career makes them resistant to ever doing it again. Isabel, meanwhile, often finds herself apart from her husband when he needs to do fieldwork. She does not look forward to those times because she finds herself being a single parent to their daughter. The demands of her job coupled with the demands of caring for her daughter are quite challenging. Jackie and her husband are apart when she travels for fieldwork. When her children were small, she refrained from fieldwork for almost twenty years and still finds it difficult to go because her husband does not like it when she is gone.

Although science, at times, ended up negatively impacting their relationships, overall the women seemed happy with their partners. Indeed, when asked directly whether there was anything that they disliked about being partnered to another scientist, at least two of the women, Jackie and Laura, said no, regardless of whether or not they had expressed any drawbacks earlier. This is particularly interesting given that Laura had said that competition between herself and her partner had led to serious problems in their relationship. Clearly, although there are negatives aspects of being married to another scientist are not major issues in these women's lives.

There were three main ways that the stresses of academic careers negatively impacted the women and their personal lives. First of all, some of the women felt that being partnered to a scientist meant that they were too narrowly focused on science and limits the time that they have for other activities in their personal lives. Some women, however, appreciated that their relationship with another scientist allowed them to narrowly focus on their passion. Secondly, some women felt that their relationship opened the doors for competition with their partner in their professional lives. This included competition both locally and on a larger scale. For some women competition was a significant problem, and for other women it was non-existent. Thirdly, women discussed ways that their career in science meant spending time apart from their partners either because they had jobs in different locations or on account of fieldwork.

The Next Generation

Of the fifteen women interviewed, eleven had children. Three of the four who did not have children were in their thirties: Heather, Frances, and Gwen, and one was older: Denise, who was in her seventies. Heather and Frances both planned to have children in the future. Gwen and her husband had chosen not to have children because their interest in science had resulted in a strong passion about protecting the environment. Gwen said, "We just think population is a huge problem and we don't necessarily need to leave our progeny just to prop us up in the future, our legacy might be something else instead." Gwen's interest in science may have affected her decision not to have children, but for the thirteen women who had or planned to have children, their interest in science affects their relationships with the children that they have or hope to have in the future.

Children's Effects on Their Careers

Not surprisingly, the women that I interviewed who had children talked about how their career in science affected their relationships with their children and vice versa. First of all, they found that their careers impacted when they were able to have children. After having children the women found that they had less time for work and that it was harder to travel for conferences or fieldwork. The women noted that, ultimately, having children had brought them many benefits including broadening the topics they talked about at home and expanding their circle of friends as well as increasing their self-esteem. And, the women's relationship with science impacted

their relationship with their children in one other way: the women often talked about how their children had inherited the "genes" for science.

While not preventing them from having children, interviewees other than Gwen said that their interest in science affected their decisions about when to have children. Anna delayed having children on account of the demands of her career. Unable to secure a tenure track position due partially to anti-nepotism rules, she relied on research grants to support her work. This made it hard to take time to have children. But, by age thirty-two, even though she still felt the pressure of the grants, she decided that she could not wait any longer to have children. Other women also noted that their careers in science meant that there was little time for actually having their children. Anna had a baby on Friday and was back in the classroom on Monday. Beth reported being lucky enough to have a baby during a break from school rather than in the middle of a term.

Nine of the women discussed ways that having children affects whether and how they attend professional conferences. Anna, Laura, Olivia, and Colleen noted that they had to be sure to coordinate their travel schedules with their partners but that did not create too many problems. As Laura said:

> If somebody invites me to a meeting, you know, 'come and give a talk in Italy', I can't just say yes, I have to make sure that he's not going out of the country or out of town the same week and there's no one to take care of the kid.

Isabel restricts her travel because of her child, but her partner does less of that. Kathryn and Nicole also report that they restrict their travel more than their partners do. After giving birth, Kathryn was unable to travel without her children while she

was breastfeeding and, as a result, she tended not to travel. At the same time her husband "was still pre-tenure, so he had to go [to conferences]." To maximize their opportunities to attend conferences Beth and her husband thought creatively. Beth's family would travel together to conferences with someone in tow to provide childcare. When the children were older, they would explore the city while their parents attended the conference. Jackie also tried to take her children along when she could.

Travel for fieldwork is similarly affected after having children. Jackie stopped doing fieldwork for fifteen years after she had children in order to be able to be home with them. Instead, she sent other people to do the fieldwork for her. Kathryn shifted her fieldwork to a site closer to home so that the whole family can go when she needs to conduct fieldwork.

Struggles over childcare remain even when the women are at home. For example, at the time of our interview Nicole found herself without regular childcare for her toddler. She and her husband tried to share care of their daughter. While they were able to take their daughter to departmental meetings when she was an infant, as the child aged, they had to decide which of them attended meetings and which tended to the child. Because Nicole had an administrative role within the department, she was more likely to go to meetings while her husband watches their daughter. Two women, Beth and Anna, took their children to work more regularly. Anna found that having her children in her office did not impact anyone else in the department and it was easy to do since in her field there were no biological or chemical hazards in her office. Because her husband was in the same department, he could take the children as

needed. Beth, who also worked in the same department as her husband, had a similar arrangement for the first couple months of her children's lives. Evelyn and her husband have done similar things on occasion when their daycare was closed or on days where they had to take the baby to a doctor's appointment. When they both had meetings at the same time, her husband took the baby to a meeting.

As parents and non-parents alike know, children take time. For the women I interviewed, that often meant time away from their scientific pursuits. The women expressed the sentiments similar to those of Anna – "You cannot keep up the pace you did before" after having children. Colleen, Evelyn, Marion, and Isabel all worked shorter days after having their children than they did beforehand. Marion said that she cannot "give work quite as undivided attention as" she could previously. Colleen and her husband tried to work the same hours so that they could spend as much time as possible together as a family. Laura, who described her son as "an extremely difficult teenager," suspected that without the demands that her son placed upon her she could have gone further in her career. Kathryn's children also impacted her career as she after having children she found that she and her husband did not have the time to give each other as much feedback on their work as they did before children. Jackie said she would be "really annoyed that [she] wasn't able to spend the time with [her] kids that [she] wanted" when she had to spend time preparing grant proposals. Kathryn similarly felt that it was hard to find balance while working an academic job and said that both she and her husband have considered leaving academia on account of this.

Benefits of Having Children

Although having children negatively impacted women's work hours or travel schedules, at least four of women cited the benefits of children as well. One of the ways that women felt they benefited was through broadening their horizons. Because some of these women felt that being partnered to a scientist narrowed their horizons, having children helped to combat this issue. Anna said, "You know, I like having a broader base. And, for me, that came later, when I had my children, I met all the parents of my children's friends, who were all doing different things." She also talked about her children as being a break from work because they are not as interested as she is in her field of science. Marion also noted that she made friends with parents of her daughter's friends. Isabel said that she enjoyed meeting her daughter's friends' parents because it allowed her a way to meet some nonscientists. Making these friends provided both a different perspective and some balance. Isabel is concerned that she and her husband talk too much about their work and about science at home, which she feels is unfair to their daughter. Isabel ultimately feels that having a child has been good for her because she now has "this whole other life that gives [her] satisfaction." Heather also suspects that once her baby is born their conversation at home will broaden. She said, "You do have to be careful not to talk about work all the time, especially if you don't have children. I think once you have children, you talk about projectile vomit."

Science in the Genes

Four of the women mentioned how their children had science "in their genes." Anna reported that her children now work in science related fields noting that "they tried to escape the science genes, but they couldn't." Heather joked that she and her husband having "pointy-headed babies." She was also excited by the prospect that her baby might be the third generation of her husband's family to go into their research field, remarking, "The odds are genetically high." Laura meanwhile noted that since her son is adopted, "he doesn't have the same genes" and feels discouraged when he has problems in math and science, especially because his parents are engineering professors. This trend to associate science ability with genetics is interesting for a couple of reasons. First of all, it highlights the extent to which scientists see the world through a science lens; they understand their children's interest in and aptitude for science as a result of biology. But, it also underscores the fact that none of these scientists seem to acknowledge the role for socialization in becoming a scientist or engineer. Frances best summed up how women in science manage to have children and still maintain their careers when she said, "It's not easy, but you just do it."

The majority of the women that I interviewed had children. They found not only that their careers impacted when they were able to have children but that their children impacted their careers with regards to fieldwork and traveling for conferences as well as finding time to work more generally. Regardless, the majority of the women described their children as a positive aspect of their lives because of the ways that it broadened their horizons and boosted their self-esteem.

Women Scientists' Friends

The women in this study indicated that their relationship with science affected their friendships. In many ways, their experiences with friendships are similar to their experiences with romantic relationships. Not surprisingly, the women made friends at work. Women said that they befriended scientists, because the time demands of their jobs require them to work long hours, which meant that they (1) spent a lot of time with coworkers and (2) did not have time to make friends outside of work. A couple women who worked in the same departments as their husbands indicated that they felt an obligation to serve as hosts for departmental social gatherings, which in turn helps them form friendships with scientists. When the women had friends who were non-scientists, these friends tended to be people who were parents of their children's friends, or people they met through non-science hobbies, neighbors, or friends predating their careers as scientists.

Scientist Friends

Twelve of the women said that at least some of their friends were scientists. Anna said that throughout her career, both as a student and later, she has socialized with the scientists by whom she is surrounded. Gwen described her group of friends from her department in graduate school as "a large group of people…who did parties or dinners or vacations together." Evelyn said "most of the people that we know… we met and got to be friends with through the [science] community or the scientific community or the university community." Isabel also has many friendships within the

scientific community, which she said is easy because the science community at her institution is so large. Olivia noted that "that's just one of the great perks of doing, or being a scientist, that you end up meeting people from everywhere." When she and her husband travel, they are then able to connect with these friends around the world. Gwen said that she and her husband have many academic friends, and that she likes that. "They're just who I'm drawn to, who I have the most in common with." Frances also likes that most of her friends tend to be scientists because "we just have an analytical way of looking at life, which I actually really enjoy." Rather than seeing her friendships with scientists as an artifact of the structure of science, she feels that the friendships are due to an affinity for like-minded individuals. Most of Laura's friends also tend to be engineers. When asked whether she like that she responded, "Yeah, it's very comfortable."

Beth said that one of the ways that her relationship with her husband impacts her personal life is the impact it has on their friendships. She said "there's always this couples thing, where, because you are a couple, okay well, we invite people over to dinner that, you know, you might not do if you were not married to another scientist." She also said that they tend to invite graduate students over and be more social than she thinks either of them would be if they were single. Similarly, Frances said, "Professional social events are geared towards couples." Denise and her husband have little time for a social life other than "students and postdocs and going out to dinner with speakers." At times they have potlucks for the department at their house in a rural area. Jackie and her husband used to entertain for the department a lot when they

lived closer to her institution. Now, like Denise, they live in a rural area and find that they only entertain once every year or so. Jackie said that she misses all of the interactions with her colleagues that she had when she lived closer.

Non-scientist Friends

Gwen and her husband, meanwhile, devote a lot of their free time to their hobbies and have developed friendships through those hobbies. Similarly, Jackie and her husband have a lot of friends that they have met through outdoor sports and activities. Because Jackie and her husband live far from the university, and because her husband does not work for the university, it makes sense that they have friendships that have developed from other outlets. Nicole and her husband also have made friends through their hobby as well. She noted, however, that the friends that they have made through their hobby still tend to be scientists or in science related fields. Like Frances, Nicole said that she likes this because she likes "being able to talk the same language" as her friends. Kathryn, meanwhile, said that she still has strong ties with many of her friends from college. She values those friendships because she "really [appreciates] hearing very different things." Her husband also has strong ties to old friends.

Little Time for Friends

Kathryn noted that between their children and their careers, they are not able to spend much time with friends. Similarly, Marion said that she and her husband do not have much time for an active social life. When they do socialize, it tends to be either with other scientists or parents of their daughter's friends. Olivia said that she and her

husband have many non-scientist friends, which she has sought out because she enjoys "meeting people who do other things." This is not surprising given her interests in art and other non-science related topics. Denise and her husband, meanwhile, have made friends recently near their vacation home, which happens to be near a university-based lab, where they eventually plan to retire. Heather has worked quite hard to make friends with nonscientists. She said that she and her husband, although they have scientist friends, are more likely to "make an effort" for the non-scientists because of the variety that these friendships bring and because of their interests in topics outside of science.

Many of the women noted that many of their friends are scientists and engineers. If either they or their partners had jobs in different fields, they might find that their friendships were more diverse. As noted earlier, Anna felt that since both she and her husband worked in the same department, their circle of friends was limited. Similarly, Evelyn said that her circle of friends was wider in the past when she dated people who were in different fields. Indeed working in the same area limits the number of places where a couple could meet friends because they have one set of professional contacts rather than two. The women's comments about their friendships are similar to those that they made about dating scientists; they have many scientist friends because of the amount of time that they spend in their job. Just like the said when talking about their romantic relationships, the women noted that their friendships had been more diverse during their undergraduate days when they were less immersed in science.

Like their romantic relationships, many of the women said that their friendships formed either in school or work. Once again, the women said that the demands of their jobs meant that they spent a large amount of time around scientists and that this is how they formed relationships with these individuals. Women met their non-scientist friends in a limited number of settings. Non-scientists friends tended to be the parents of the women's children's friends, or people they met through non-science hobbies, neighbors, or friends from before they started their careers as scientists.

Conclusion

The literature on women in science and engineering often focuses on the careers of women scientists and engineering while ignoring their day-to-day lives. In reality, the careers of such women affect multiple aspects of their lives, especially for women who are married to or partnered with other scientists and engineers. In particular, it is clear that their careers as scientists influence their personal relationships with their partners as well as with their friends and family.

Women in science who are married to scientists are more likely to develop friendships outside of science if they have children or if they engage in hobbies unrelated to science. This suggests that escaping the all-encompassing nature of science requires women to make an effort to have at least one outlet outside of science, and once they have that outlet other opportunities outside of science will develop.

Overall, many of the women describe themselves as different. When the older women talked about being different it was in very concrete ways: Anna or Beth were the first people in their families to go away to college and Denise's friends all got married and had children right after high school. When the younger women talked about being different, meanwhile, they mentioned having felt as if they did not fit into the social scene when they were undergraduates, or not fitting in amongst a family of nonscientists. Some of the women describe themselves in some way as being a "geek" or a "nerd" or a "dork," all keywords in modern day slang for individuals that somehow are not "normal." These feelings may explain why many of them end up marrying other scientists. They feel accepted among scientists.

Women's relationships with another scientist often encouraged them to work long hours while at the same time increasing their number of friendships with scientists. This meant that these relationships increased the already consuming nature of science. Although the women I interviewed did not "marry science" in the same way as Barbara McClintock or Rosalind Franklin are said to have done by remaining single and devoting their lives to scientific pursuits, science became a large part of their personal lives. Perhaps, marrying a scientist is just another way of marrying science.

THE EFFECTS OF WOMEN SCIENTISTS' RELATIONSHIPS ON THEIR PROFESSIONAL LIVES

All of the women interviewed mentioned ways that their relationship with a scientist affected their professional lives. Their relationships had effects on both the structural aspects and the scientific content in their professional lives. Their relationships had effects on their job searches, travel schedules, fieldwork,[27] social integration, both formal and informal collaboration with their partners, and how they are seen as being part of a couple.

Several of the questions during the interview prompted the women to talk about their professional lives. These questions included the following:

- Has being married to/partnered with another scientist affected your professional life? How? What about your research and how you do your research? Has it affected job opportunities? Has it affected your participation in professional societies or conferences?
- Have you ever collaborated on professional projects with your partner? Why or why not? (What was/were the project(s) about?)
- Over the years, has being with a scientist affected your integration into your department? Into your field? Into professional societies? Has having a partner in science helped you meet people? Increased your interactions with other scientists? Changed how people viewed you?

[27] For the sake of confidentiality, I use "fieldwork" to refer to any research that requires a woman to travel away from her home institution to a specific location in order to gather data.

- Do you have tenure? Does your spouse/partner? How did having a scientist spouse/partner affect the tenure process for you?

The women's responses to these questions illuminated their experiences with some issues that have been shown to be relevant for dual career couples, including the job search and formal collaboration. The women, however, also talked about areas that have not yet been studied such as their identity as a couple. Furthermore, the women indicated that their relationships had effects on both the structural aspects of their careers such as the job search, travel schedules, fieldwork, but also on the content of science through their formal and informal collaboration with their partners.

Couples' Departments and Research Fields

The extent to which women's partners impacted their careers and the ways that their careers are impacted depend upon how the women's departments and research fields aligned with those of their partners. The relationships that the women described fell into four categories: (1) four relationships in which the women and their partners were in the same department[28] and same research fields, (2) eight relationships in which the women were in the same department but different research fields from their partners, (3) two relationships in which the women were in different departments and different research fields from their partners, and (4) one relationship in which the woman was in a different department but the same research field as her partner.

[28] I consider a woman and her partner to work in the same department if either (1) they are both primarily employed in the same department or (2) one partner has an appointment in the department in which their partner is employed.

Twelve of the fifteen women worked in the same department as their partners. All twelve of these women met their partners in school, at work, or through professional conferences. Eight of the women described themselves as being in different research fields despite working in the same department as their partners. Among these eight women, four of the women's research fields were close enough to their partners' that they collaborated or planned to collaborate in the future while for the four others their research fields were distinct enough that they did not collaborate with their partners. When asked about collaborating with their husbands, women whose relationships fit this latter category made comments like "No, not really, I mean he, my husband's in a totally different field" (Anna). Similarly, Evelyn said that she and her husband were in "different enough fields" that he had not impacted her research and that neither she nor her partner understood each other's work completely. Likewise, Olivia said, "I know more or less what my husband works on, but I would be hard-pressed to really explain to somebody … all the ins and outs of the project." Nicole said that she and her husband's interests were "in distinct areas within the same discipline." Isabel and Kathryn both described being in a similar research area to their partners, but working with different techniques than their partners. Beth's partner and Frances' partner also fell into this category, working in the same departments but in different research fields.

Four of the women worked in the same departments as their partners and were in similar research fields. This included both Laura and Heather who both met their partners at research conferences. It also included Denise and her husband, who had

been her advisee, and Marion who actively collaborated with her husband. Even when they spoke of the similarities of their interests, the women noted differences between their work and their partners'. For example, Denise and her husband, despite their advisor/advisee relationship and continued collaboration, attended different conferences from each other and applied for grants through different study sections because of the different areas that each of their specific fields of research examine.

Gwen was unique in that while she sees her research as being similar to her partner's, they are in different departments: she is an engineer and he is a scientist. In the remaining two relationships, Colleen's and Jackie's, the women were in different departments and research fields from their partners. Colleen met her partner at school, but was in a different program than he was. Jackie met her husband before he started his degree. The women who met their partners within their professional settings are more closely aligned with their partners professionally than Colleen and Jackie are.

There are some ways that being in the same research field as her partner could affect a women's career with regards to research, colleagues, and conferences. It may be less obvious how working in the same department as her partner might affect a woman's career. Being in the same department as their partners affected the women I interviewed with regards to things like understanding each other's colleagues, working with students together, and competing for administrative positions. Anna said that being in the same department as her husband can be really hard when raises are given. She said, "It's like, well, you give it to one person, it's like well that family already had a raise, then the second person..." As noted in the previous chapter, Evelyn

disliked when raises came out because it caused her to compare herself to her partner. Nicole said that being in the same department is difficult for her with regards to childcare because it means that there are events or faculty meetings that both she and her husband are expected to attend. Regardless of the particular effects, all of the women talked about ways that having a scientist partner impacted their professional lives.

Scientific Couples' Biggest Fear: The Job Search

Three of the women referred to the "two-body problem"[29] by name and said that it is one of the biggest problems that women scientists partnered to other scientists face. Heather referred to it as "an absolute nightmare," and Jackie cites it as one of the reasons that women scientists should think twice about forming relationships with other scientists. Jackie said, "I suggest that it's, hopefully, somebody that's not exactly in the same field so you don't have a two job problem for one thing."

With few exceptions, however, at the time of the interview all of the women and their partners had found suitable positions in the same geographic area. In due time many couples seem to resolve the two-body problem in a way that is acceptable to them. The structure of academic science means that there are relatively few job openings in science. Therefore, it is more difficult for couples to find jobs in the same geographic area in the academy compared to non-academic settings. In this section, I will look at several ways that being partnered with another scientist affects the job

[29] Interestingly, they all referred to it as the "two body thing," which suggests familiarity with the concept.

search process, the various times that they two-body problem arises, and ways that women resolve these problems.

Difficulties with the Job Search

There are many ways in which the job search is not an easy process for dual career couples in the sciences. Among the difficulties that women encounter are: (1) differing advice about the job search, (2) disparate and problematic offers, (3) trailing spouses, (4) grant supported positions, and (5) living apart from their partners. It is these obstacles that add up to mean that finding suitable jobs in the same location is one of the largest challenges that dual career academic couples in the sciences face.

Differing Advice

Not only are couples worried about their prospects of finding jobs in the same geographic area, they are given differing advice about how or when to tell a potential employer about their partner. Frances, for example, told me how people criticized her decision to take her husband along on a job interview. She was told, "they'll see that you're married, and that he's looking for a job and it'll reflect badly on you." Ultimately, she took her husband along because she did not want to work at an institution that had that sort of attitude. Luckily, she was offered the job in question and they were able to find a temporary position for her husband.

Disparate and Problematic Offers

In their job searches, at times the women faced disparate offers wherein their male partners received better offers than the women did. These sorts of situations

were particularly blatant in the past. Anna's partner was already established in his position when she finished her degree in the 1970s. She said:

> If we had finished together then we could have gone out and looked for jobs together, but he was kind of already established by the time I finished. So, then it was me trying to look for a job in the area, which was not easy, not easy.

As a result she took a part-time position and then supported herself on research grants, a situation that lasted decades until she and her husband received an outside offer[30] and their institution countered it offering Anna a full-time permanent position. Beth faced actual anti-nepotism in her job search during the 1970s. When Beth's husband finished his PhD, he got a position and she went along, finishing her PhD from afar. When she graduated, also in the 1970s, his employer offered her a part-time position. It was only when she and her husband received an outside offer, that Beth got a tenured position. Because employing a married couple went against the faculty manual, Beth and her husband had to get the faculty manual changed before she could be tenured.

More commonly, regardless of which member of the couple was more established, the women would receive offers that were worse than those that were being made to their partners. When Denise's advisee/husband finished his degree, also during the 1970s, they both received offers from one institution that wanted to hire her husband as an assistant professor and to hire her as a research associate despite the fact that she had been his advisor. Similarly, when Laura and her husband

[30] An "outside offer" refers to an offer of employment that one institution makes to someone employed by another institution. An outside offer can serve as a tool to recruit experienced faculty.

were on the job market in the 1980s, she was told that "she couldn't be offered a tenure-track position" even though she already had one at her then institution. When she refused, individuals at the institution criticized her for being too prideful. Similarly, when Isabel and her husband finished their degrees at the same time in the early 1990s, he got an offer from an institution that said "we don't think Isabel's ready, we'll consider her again in six months." Given the remote location of the particular institution, however, there would have been nothing for her to do if her husband took the position. At another point during their job search, Isabel and her husband got one offer from an institution that wanted them to split one position between the two of them and another offer from an institution that wanted them to share an office and accept lower salaries than they were offering other individuals.

Only one woman had a particularly recent story about a problematic offer. After finishing her postdoc in the 2000s, Heather was applying for jobs. Since her husband had a tenured position that he wanted to stay in, he was not on the market. Heather had applied for one job without hearing back. She said:

> I was at a conference... people I know well, the field all knows me, and they said, oh, you know, "What happened? What happened to your application? We ended up taking you off the pile" and I was like, "uh, well it was complete" and they said, "well, we never got [your husband's], we took it off the pile because we were waiting for [his]." I looked at them and said, "[my husband] wasn't ever going to apply" and they got white because they suddenly realized that they'd let themselves in for the mother of a lawsuit.

This an egregious example of why the job market continues to be more difficult for couples.

Trailing Spouses

Another difficult situation that the women I interviewed encountered was the issue of "trailing spouses." Seven of the couples that I talked to faced situations that involved so-called "trailing spouses," a situation in which one spouse is offered a position because an institution is highly interested in their partner. Although on the surface, it appears that this sort of offer would resolve problems, these sorts of offers can indeed become problematic because the trailing spouse is not always respected when they arrive at an institution. Anna and Beth were both trailing spouses because their partners took a position while they were still in graduate school. After completing their degrees, they both were offered positions by their partners' institutions. Laura and Marion each identified themselves as a trailing spouse; three women identified their partners as trailing spouses. Before moving to her current institution, Marion followed her husband in order to take a research position while he took a faculty position. Laura, meanwhile, describes herself as being "an also there" when she and her husband applied to her current department. Luckily for Laura, the department chair's wife took a particular interest in having a woman in the department even though she herself did not work at the university and "ran all over town that summer getting votes from people" so that the department could make her an offer. Laura commented, "they were able to recognize that I was good once I was here and they knew who I was." She was able to teach classes that her colleagues could not teach and brought in grant money, making her well accepted into the department.

When Colleen got her job, her husband came along as a "trailing spouse," something she says that they both see as positive. She said that "people see it as a plus, he's actually well-regarded and actually people saw it as a great opportunity to have him come." She felt that he had not encountered the lack of respect that can happen in these positions. Nicole's husband was the "trailing spouse" at their previous institution. She said there were "issues of respect in the department," and it created tension within their relationship. She understood the problems and said that she would not want people to think that she only got a job on account of her husband. Frances is in a similar situation; her husband "has been the one who's been sort of trailing and dealing with it, the fallout of her decisions." When they went on the market she said, "we decided that...we would both apply places and when one of us got a job, we would go and figure it out when we got there." Frances got a job offer and her husband followed, securing a temporary position. She feels guilty about his situation and struggles with the lack of permanency of his position. These women's anecdotes demonstrate the problems that are presented when one member of a couple is a "trailing spouse." Not only do trailing spouses find that they are, at times, disrespected, but these individuals do not necessarily have the same job security as their partners.

Grant-Supported Positions

Other women faced being in "soft money" situations where one partner is supported by grant money rather than in a stable, permanent position. This situation

lacks security and permanency; the position only continues as long as funding continues. After Anna finished her degree she said:

> I taught at [a community college] for, oh, a year and a half and then I started taking these visiting positions... going away for a quarter or six months, because there wasn't much here. And then I started teaching part-time [at her current institution] and got, by that time, I was able to get a grant, so I was supporting myself on grants, so I was a research scientist for many years.

Anna only obtained a full-time position after she and her husband received an outside offer. Being funded on grants was difficult for Anna when she started thinking about having children. She was in her thirties, and she said:

> I felt like I couldn't wait two months longer, we kind of had to [have kids] then, but it was a real struggle for me just to keep going because I had to keep the research grants going because that was my primary source of support.

Beth has found being in a grant-supported position to be less problematic. She left a tenured position to move with her partner when his career needs necessitated a move. She worked in administration briefly after the move, but found that it was not what she was looking for. Ultimately, she found two quarter-time positions, which was enough for her to be eligible for health insurance and said, "I'm totally a soft money person, but I've had no trouble funding myself for the last, what, almost ten years." In other words, despite the supposed problems of supporting oneself on grant money, it is not necessarily a negative situation for everyone.

Living Apart

One serious struggle that couples in science face is being unable to find a position in the same geographic area. It is not uncommon for couples in the sciences

to live apart for some period of time. Of the fifteen women, four of them had lived apart from their partners. None of the women lived apart from her partner for more than five years. Heather and her now-husband were living in different countries when they first met. After finishing her degree, she moved to her partner's institution for a postdoc. They lived apart again after the completion of her postdoctoral position, when she was unable to find a position near her husband and took one a few hours away. At first, she was the one commuting to visit him on the weekends. Later she asked him to commute as well. She said, "once he started doing the commute, he started taking being on the job market as a couple fairly seriously." At that time, she thought "me leaving science was the best thing that could have happened to him," but she was unwilling to do that because she did not want to "close that door." Ultimately Heather and her husband started to look for positions together when they decided to have a baby, something they felt they could not do if they were living apart.

Colleen and her partner were also separated for two years while they were doing postdocs. She ultimately decided to telecommute so that they could live together. Kathryn and her husband also spent time living apart. When he graduated and accepted a position, "We then managed to not be in the same place for more than eight days in, I want to say it's five years, it was a really long time, until I was able to get a job" where he was. She said that having lived apart earlier in their careers means that she and her husband are unwilling to do it again. They have since both made compromises that have allowed them to live in the same city.

Two of the women were particularly concerned about the possibility of living apart from their partners, seeing it as one of the biggest hurdles in their careers. Frances, for example, said:

> We just decided that life was too short and we were not going to split up and our careers were important, but they're just not that important... I don't want to be on other sides of the country [from each other] working a dream job, that just doesn't interest me.

Because of these values, her husband took a temporary position, but she said they feel it is a better option than living apart from each other. Marion echoed this sentiment, saying that she and her husband have "always been really lucky, always found something, never had to live apart or anything. I don't think we'd even really consider that."

Other Transition Points

Issues arise for dual career couples at multiple points in their careers, not just during the job search. The most common time for the two-body problem to arise is when couples look for their first positions after graduate school. For some women this happens even earlier. Kathryn had a relationship with another scientist before she began graduate school. When she and her partner decided to go to grad school, they had a hard time finding a school that fit both of their needs. She said:

> It was hard enough to find it with our slightly different interests in science, to find the right grad program that suited both of us and what we truly did is find some place that suited me terrifically the first time, didn't suit him nearly so well, and then so we moved and for me I still got a huge amount after, out of [the new school], but in some ways, where we had been first... had been absolutely ideal for me, and it was fine because I could take that with me and I came being able to learn new things [at the new school].

Kathryn looks back on the change positively because she was exposed to the resources that both schools were able to offer her.

Denise has reached retirement age before her partner. She said:

> He's much younger than I am. I am to the retirement age, I could retire. [Laughs]. He can't. But, um, then what do I do, but I mean I have grants still til 2010, so, and I have students and... if I retire, I'd like to go out to [where our retirement home is], move everything up there, I mean I could still use the lab up there, but that would make it difficult for him to teach down here, so this is a problem, but I probably will in a year or two.

If her husband were still teaching, however, he would not be able to live that far from the university. As a result, Denise will have to delay moving her lab.

The tenure process is another point of potential conflict for women partnered with other scientists. If one partner received tenure at an institution and the other partner did not, it could present a problem for a couple. When asked about the extent to which being in a relationship affected the tenure process, Evelyn noted that her husband received early tenure after they had received an outside offer. She said:

> [My husband] got slightly early tenure because of this outside offer that we were dealing with. So, I already had tenure at that point, but he didn't. But the offer from the other university included tenure, so our department had to act on his case.

Three other women commented that they were not privy to the conversations about either their tenure or their partners' tenure and so they were unsure about any effect that their relationship had. Laura noted, however, that she and her husband were advised not to co-advise students so that no issues would arise when they came up for tenure. Similarly, Isabel speculated that:

> It's possible someone who wrote a letter for me might have been influenced by knowing him... and it's possible that knowing he was part of the community and [they were thinking] that if I left, he would go, too. That's possible.

Likewise, Nicole said, "I'm sure that it's got to be in people's minds that if he doesn't get tenure then they lose both of us." Olivia echoed that statement saying that "if you are committed to one person, in the couple, that you really want to have in your department, say the chair really wants, then you have to consider seriously keeping the other person because otherwise, they would both go somewhere else." None of the women described the tenure process as being negatively affected by their relationships. If anything, they felt that their relationships had helped assure that both they and their partners received tenure.

Solving the Problems

Undoubtedly, some of the women have faced difficulties in finding positions. Anna, for example, taught part-time after she graduated and then supported herself on research money for years. Kathryn, meanwhile, feels like she has compromised in her current position in order to be in the geographic area that she and her husband wanted to live in. Because the position focuses on teaching, she has had to cut back on her research program, a decision that continues to be hard for her. Regardless, there are several strategies that the women have used in order to find positions and solve the problems that job searches present for dual career academic couples in the sciences. As mentioned above, some of the women benefited from policies that allowed an institution to hire either them or their spouse as a "trailing spouse" so that both members of a couple could have a position at the same institution. Although these

sorts of arrangements can be problematic, they also do help to resolve the two-body problem. Among the other tools that the women utilized were: compromise and outside offers. Some women contemplated leaving science or academia and other women said that they didn't face difficulties.

The key to successfully dealing with job search issues for dual science career couples is often compromise either on their part or on the part of their partners. The women and their partners compromised about issues such as the quality of position that they accepted and the location where they lived. As noted above, Frances' husband moved to her current institution with her even though there was not a full-time position open for him, and Beth moved with her husband to their current institution even though she was already established at her previous institution. Likewise, Kathryn and her husband had made compromises with regard to their positions in order to live near his family; she had taken a less than ideal position, and he spent two years looking for a job when they first moved to their current positions. For Isabel and her partner, finding jobs in the same location meant compromising about where they lived. Anna and Heather noted that because of job situations they were unable to live near other family members. Heather said of her husband, "He was very worried about leaving his dad who was incredibly ill, we were actually incredibly fortunate, but in a sad sort of way, that his dad died two months before we left." This was one of a number of factors that enabled them to leave their previous positions.

Without prompting, five of the women mentioned the role that outside offers had played in their careers. Outside offers are a powerful tool in the case of dual

career couples. They not only give scientists access to a new opportunity, but also provides an opportunity for them to negotiate with their current institution. Both Anna and Beth (in the case of her first position after graduate school) were able to negotiate for full time positions at their schools after receiving offers from other institutions. Similarly, although Evelyn was already tenured, her husband was able to get tenure early after they received an outside offer that included tenure for both of them. Marion and her husband have also received outside offers over the years. She said that there was at least one offer that they seriously considered, but ultimately they turned it down because of its location and because it did not include tenure for her. Likewise, Olivia and her husband have gotten outside offers but are not interested in leaving their positions.

Three of the women have thought about leaving science or academic careers, in part because of the difficulties that accompany the job search. In particular, when Heather had difficulty finding a position, she considered options outside of the academic environment and even outside of science. She said, "I decided, if I didn't get a job by August, that's what I was going to do [start a business], and I got a job in July [laughs]." Kathryn has felt similarly frustrated with the academic system because it's "horribly constraining to real life and also horribly constraining to somebody [interested in applied work]." Kathryn feels conflicted about this, however, because despite the long hours that her academic career requires, she expressed appreciation for the flexibility it affords her. Laura did leave the academic environment briefly. Shortly after becoming involved with her husband, a friend offered them both jobs in

an industry setting. They liked the positions, but left when the company started "falling apart." At that point, they applied for academic positions again and both got offers at the same university. She has not left an academic setting again.

Two of the women did not face the same difficulties with regard to the job search: Jackie and Gwen. When Jackie started her current position, her partner was still working on his undergraduate degree and was able to move with her. When he completed his degree, being an engineer with an undergraduate education meant that he was "more portable" and was able to find a job in the area. Gwen and her husband have also avoided many of the job search problems that the other women faced. When her husband moved to his current position, Gwen found a position working for a government agency. She was able to keep this position while she earned her PhD and resumed working full-time after graduating. She said that in the future, she may consider other careers paths; it is possible that at that time they may face difficulty finding either a position in the area that is appropriate for her or positions for both of them elsewhere.

Except for Frances, all of the other women had found a solution to the two-body problem. Women who find appropriate positions for themselves and their partners feel lucky that it all worked out. As Heather said, "Thank God he likes [where we are now] because otherwise, it would have been horrible. It all worked out!" Nicole, meanwhile, feels lucky that she and her husband were able to find jobs in the same department, particularly since the two of them account for about ten percent of the faculty in their department. Similarly, Isabel said that she and her

husband "were lucky that it worked out." Kathryn, Marion, Nicole, and Olivia all echoed these sentiments about being lucky. These comments overlook both the extent to which many women seem to be able to resolve the two-body problem and the difficulties and compromises that went into staging their current circumstances. Anna spent many years on soft money and Beth has had to go from a tenured position to working part-time on soft money. Frances' husband is still in a temporary position.

Women reported many difficulties with the job search process. These difficulties included disparate and problematic offers, grant supported positions, trailing spouses, and long distance relationships. Tensions around the two-body problem also arose when choosing a graduate school, looking to retire, or in the tenure process. The most common strategies that the women used to resolve the two-body problem were through receiving an outside offer or compromising.

Demands of a Career in Science

A career in science requires long hours doing research and a busy travel schedule to gather information and disseminate your results. As we saw in the previous chapter, these demands can at times take a toll on women's relationships with their partners as well as those with their children. Not surprisingly, however, the women's relationships with other scientists also affect these aspects of their professional lives. In this section, I will look at how women's relationships with other scientists affect their travel, their fieldwork, and other professional demands related to the structure of science.

Conference Travel

All of the women and their partners traveled for conferences on account of their work. Both Anna and Denise remarked that they travel quite a bit. This can often lead to hectic schedules and time away from their partners. In the month before our interview, Anna made five separate trips. Denise, similarly, recalled her previous summer:

> He went off to, to a meeting in [Europe] and then he taught for two weeks and then I met him in the airport behind security, because he came in just about two hours before I was going out. And I went to [different part of Europe] to a meeting and to visit some former students.

Busy travel schedules mean that the women often spend time apart from their partners. This is one way that the experiences of couples in the sciences are similar to those of other academics and other professionals.

Not only does travel mean that women must spend time away from their partners, but for the women who have children it also means they must spend time away from their children. This often meant that it was difficult for the women to travel at the same time as their partners. Before Olivia's children went off to college she and her husband "didn't want to be gone at the same time." Anna and Colleen made similar comments about having to coordinate their schedules around childcare. Laura said:

> If somebody invites me to a meeting, you know, 'come and give a talk in Italy,' I can't just say yes. I have to make sure that [my husband's] not going out of the country or out of town the same week and there's someone to take care of the kid.

Isabel and her husband face this as well. There will be conferences where, she said:

> Both of us want to go to, but we have a child. So we have to either split it [and each attend half the conference] or decide one's going to go and not the, and usually, I, I would say that, he has gone more than me because of that. Because, he seems to care more, if that makes sense. I'm more willing to compromise on that.

As in the job search, sometimes partners have to compromise. Because Isabel would rather be home with their child, she is less likely to travel than her partner. Nicole and her husband also face childcare problems when they travel together. Although sometimes they find someone to care for their toddler-aged daughter at home, they often take her with them.

One might predict that women, particularly the women who were in the same departments as their partners, would often travel with their partners either because they attended large meetings together or because they sought out meetings that their partners were attending. Heather and her husband do most of their travel together because of the similarity of their research interests. Eight of the other women that I spoke to, however, said that they rarely or never went to conferences with their partners. Anna and Olivia rarely travel to conferences with their husbands because of their different research interests. When I asked Olivia whether she and her husband travel together, she said, "No, not at all because we belong to different societies. We go to different meetings." Likewise, Gwen said very few conferences she would go to overlap with ones her husband would go to. Kathryn said "we both have found more value in smaller meetings. So, we will both bias our choices about where we go to those smaller meetings. So that will take us to our differences rather than our

commonalities." As a result, they rarely travel together. Anna and her husband are in a similar situation and tend to travel apart to the smaller, more "productive" meetings.

The women are divided about whether their partners influence their travel schedules. At least six of the women, including Jackie, Colleen, Gwen, Kathryn, Anna, and Evelyn say that they do not choose which conferences to go to on account of their partners. Jackie and Colleen never travel with their partners because of the differences in their fields. For the other women, it may happen that they travel with their husbands, but they do not decide whether or not to go to a meeting on account of whether or not their husband is planning on attending. At least five of the women said that their partners influence them. Beth said:

> I probably go to more conferences [than my husband]. [Laughs]. In other words, I might go to something that I might not have otherwise because [my husband] is going. Yeah, and, same, he might go to something that I'd go to, that he might not have off hand thought.

Nicole said:

> There'd be an... interesting place to go, or you know, it wouldn't be my primary area, but if he was going to go, I'd rather be with him and so I would submit a paper, too, and then we would both go. Definitely.

Frances and her husband might travel with each other, but they do not go to the academic part of each other's conferences. Denise has done something similar; she said, "Sometimes I would tag along, if I wasn't teaching at the time, because I thought well, I might [partake in leisure activities] or something, and I actually enjoyed the meetings, so." For Marion, being partnered to a scientist increases her participation in conferences in another way. She said, "I hear about more conferences because of

him." As a result, her relationship with her husband creates more opportunities for her.

Interestingly, Nicole said that traveling together to conferences is not always the best decision for her professionally. She said:

> When we go to conferences together, we are usually together in the evenings, we don't, you know he goes off with his friends and I go off with my friends, whereas if I'm there by myself, I probably go, I have more after conference activities with people, than I would when we're together or it's with a more limited group when we're together. And, it's extremely limited now that we have a daughter and she's there, too.

In other words, because her husband is with her, she is less likely to engage in networking even though networking is a major focus when attending conferences.

Fieldwork

Travel for fieldwork also is affected by being partnered to another scientist. Kathryn uses her summer to do fieldwork. Although in the past, she would travel to far-flung locales, she no longer travels to those places and now does most of her fieldwork at the same nearby site that her partner uses. Even this amount of fieldwork has been significantly curtailed; since the birth of their children, she has "done exactly three days of field work." She said:

> So, one of the things that we're actually hoping to do in our next sabbatical is, um, spend, divide it up and spend a significant block of time in a site that suits each person and, and allow that person to have a chance to do some real field work somewhere.

As a result, they will be able to travel as a family and will each still each be able to do fieldwork at their preferred site. This is an interesting compromise, but it still limits

the amount of time that either of them has at their own field site. As mentioned in the previous chapter, Jackie curtailed her fieldwork while her kids were younger. Isabel does not do fieldwork herself, but her husband does. When he travels, she finds herself to be like a "single mom," which can affect the amount of her own work that she can get done.

The two main ways that women talked about their relationships affecting the demands of their careers was about travel and fieldwork. In large part, the women, especially those with children, found that because both they and their partners needed to travel, they had to make sure to coordinate their travel schedules with their partners. Some of the women chose which conferences to attend or changed the site of their fieldwork so that they would be able to better coordinate their travel with their partners. Although I asked whether their relationships had any affect on their participation in professional societies, no one indicated that it did.

Formal and Informal Collaboration

Given that all but one of the women worked in the same department or a similar field to their partners, it is not surprising that they talk about the content of science together. These interactions focused on scientific content constitute formal collaboration with their partners as well as informal collaborations. I consider formal collaboration to be work that involves both partners' names being on the same paper or research grant whereas informal collaboration refers to other interactions focused on scientific content that is not formally recorded. Informal collaboration might

include brainstorming with a partner, asking for their help with their area of expertise, or reading your partner's work. When I asked the women whether they collaborated with their partners, those who said that they did told me about the sorts of formal collaborations in which they were involved. In reality thirteen of the women collaborated informally with their partners and referred to this throughout their interviews.

Formal Collaboration

Eight of the women formally collaborated with their partners. Nicole and her now-husband collaborated before they were a couple, but they have not collaborated since. Indeed, this collaboration inspired their relationship. She said, "We actually collaborated on a paper together and then went to a conference to present that paper and started dancing together at the evening of the conference and we really hit it off well." They plan to collaborate again soon, assuming that a grant proposal that they collaborated on is funded. Isabel has written one paper with her husband. Beth and her husband published "half a dozen papers together," and she said they enjoyed doing it and did not have "any real fights about it together or disagreements." Marion estimates that she has written about twenty percent of her papers jointly with her husband. She admits, "It's kind of stressful, doing this, because then we have to argue about every little detail." This may be due to the dynamics of her relationship with her partner because she said that this stress does not happen in her other collaborations.

Because Denise was her husband's advisor, it is not surprising that their research would continue to be closely related. She said they do "some research

together and some research independently." Similarly, Heather describes her lab with her partner as a Venn diagram[31] where they each have some independent research but they also do research together. Heather's husband is on a lot of her papers as second author for his "technical help, clearing up bugs, helping with presentations, helping the way, clarifying the way you think about things." She said that having different areas of expertise is beneficial for collaboration. "There are things that will take me eight hours to do and it just so happens that that's something that he can do in twenty minutes, so I can say, can you do this for me." Although working together brings these benefits, she indicated that she tried to publish apart from him in particular when she was a postdoc so that she could establish her own reputation.

Heather has faced problems in collaboration with her husband, however. For example, on one paper on which she was listed as the corresponding author, the editor sent all of the correspondence to her husband instead. This pattern continued even though her husband passed all of the correspondence along to Heather without responding himself. At this point in their careers, however, she feels that her husband would like "to keep the labs more separate than [she does] and is worried about losing his identity."

Laura and her husband also had lots of collaborative efforts – papers, grants, and a book. Anna has one joint paper with her husband. Interestingly, however, the collaboration was not tied to scientific content but rather than the structure of science. Anna said that "he paid for the paper because he had funds then, so that was our sole

[31] A Venn diagram is a type of diagram used in mathematics that portrays the relationships between sets. They often contain overlapping circles.

paper." He was an author on the paper not because of a scientific contribution that he made but rather because he was able to use his research funds to support the research for the paper.

Two of the women, Gwen and Kathryn, talked about the possibility of formally collaborating with their partners in the future. Gwen and her husband work together a lot in their personal lives, particularly with regards to their hobbies. She feels that their good working relationship would carry over into any professional collaboration. She said, "I think a lot of other couples are worried about bickering or stepping on each other's toes, but I don't think that will be an issue for us." Kathryn said that the barrier to collaboration with her husband has been that they "both have so many things already in motion and [they] try to work on those." But she said that they have talked about collaboration and hope to do it in the future.

There were two different mindsets among the women who have not formally collaborated with their partners. Both Jackie and Colleen said that they had not collaborated with their husbands and would not in the future because their fields were too different. Evelyn, Frances, and Olivia, all expressed an aversion to collaborating with their partners. Evelyn's concern about collaboration with her husband is having too much of their lives overlap, "I don't think that I'd ever thought wouldn't it be nice if we collaborated because I think, you know, we spend enough time together as it is and I think that's plenty." Olivia, likewise, said that her name may be on one of her husband's papers, but that she preferred to keep their work separate because "it's more interesting" if they have separate interests at work and allows them to "bring

something different" into their personal relationship. These comments mirror comments we will see in the next chapter about separating personal and professional lives. Frances was more concerned about the potential disagreements that could result from formally collaborating with her husband. "I'd like to [collaborate], but then part of me feels like, is that like lending money to friends, is that like one of those things that you shouldn't cross or something?" This is a real concern as some couples, like Marion and her partner, face tension and disagreements when they collaborate.

Informal Collaboration

One of the ways that the women engaged in informal collaborations with their partners was by filling in each other's gaps in knowledge. Marion, for example, describes her husband as "a resource, a really great resource." Anna referred to her husband as her "local expert" on his area of expertise, which she finds particularly useful when she teaches classes. Frances, Laura, and Gwen describe how their partners' interest in a different field means that they have someone who can help them with those fields. Kathryn said because her husband's research has a different focus:

> There are ways in which he has helped me conceptualize what I'm trying to work on, both, technically, but also the holistic picture of it. There's no question that his expertise and his way of looking at things has altered how I look at it.

Heather actually describes her husband as her other brain:

> If I want to know an equation, it's easier to phone [my husband] than to look it up. And, I remember once, this was really, you know I can dial his number with one hand so fast it's unbelievable, and at one point I was talking to a graduate student and we were talking about some variable thing or some data thing and I say you know, I'm going to have to think about that and I dialed [my husband], and it was like, I'm

> going to have to consult my other brain. So, yeah, I actually think of him as one of those external hard drives of my own brain.

At least three of the women described their partners as not just filling in gaps in their knowledge but causing shifts in the way they think. Beth said that because her husband has a different specialty than she does, "he caused me to think a little differently than I would have otherwise." She finds him to be "a broadening influence, to understand more of the big picture than [she] would have otherwise." Her partner helped her "to think about different methods of approach to problems." Likewise, Isabel said that "I've been influenced by him in that I think about larger scale problems than I used to" and Nicole said that her husband has "made her interests a little broader or my abilities and skills a little broader than they would have been otherwise."

Six of the women said that it was useful to have a partner with a different perspective. A partner with a different perspective was able to give them feedback that helped them think about their own work. For example, Colleen said:

> You know, I talk about my science with him even though he's not in the same field, and sometimes, you know, he has interesting perspectives on, um, on what I work on… I wouldn't say it's a big influence; he's just a sounding board that I have at home.

At least three of the women described these interactions as reciprocal where both partners talk about their work. Frances, for example, said that when she and her husband talk, because of their different backgrounds, they are both able to "bring a neat perspective" to each other's work. Gwen and Marion both said that their husbands' unique views made them great to "bounce ideas off of." Similarly, Jackie

said that when your partner is in a similar field, "you can tell them something about [a problem] and they kind of understand about it a little bit [and] sometimes the other person even has some ideas and you go 'Whooo! That's crazy'," but that ultimately those "crazy" ideas could be useful in helping you see the problem in a different way. Kathryn and her husband talk about problems in similar ways, where one of them is the expert and one of them is the non-expert and that this helps them clarify their thoughts about a problem.

In addition to the women who formally collaborated with their husbands, at least four of the other women also described having their partners read their work or reading their partners' work. These women indicated that having their partner read their work was less about the technical knowledge in the document and more about making sure that the paper was understandable to scientists with different areas of expertise. In particular, Gwen and Olivia do not exchange technical work with their partners, but they read each other's grant proposals. Frances said that her husband reads everything that she writes because "he's a really great editor" and that they often give each other practice talks. Kathryn and her husband used to read everything that each other wrote serving as "a voice that didn't understand things." Since having her children, however, it has been more difficult for them to find the time to do this. All of the women other than Olivia who said that they read their partner's work are still relatively early on in their careers. This may be an indication that as scientists mature they utilize their partners less for this type of support.

Only two women did not report ways that they informally collaborated with their partners. One of these women was Denise who formally collaborated with her husband. The other women was Evelyn, who said:

> I kind of know what he does because we talk about it over dinner or stuff like that, but we don't really take a professional interest in each other's work. I've never proofread a paper for him or vice versa. So, it's because we're in different enough ends of the department.

Although many of the other women who are in different research fields than their partners reported talking about their work with them, Evelyn and her husband do not do this.

Other Forms of Collaboration

Women collaborated with their partners in more structural ways as well. At least five of the women worked with their partners in advising students. Kathryn and her husband have served on a graduate student supervisory of committees together, and Laura and her husband have worked with students together as well. Similarly, Heather and her husband work together to advise students. Although they each ask that their students go to their primary advisor to talk about big decisions, for more day-to-day concerns either Heather or her husband will help them. Anna and her husband can take over each other's classes if needed. Finally, at least four of the women mentioned attending department meetings together.

Other than Evelyn, all of the women reported collaborating with their partners either on a formal or an informal level. The majority of women had collaborated, or planned to collaborate, with their partners of both of these levels. This is a natural outcome of the amount of time that their careers require, the passion that many of

them feel about their work, and the similarities between the women's research and their partners' fields.

Mentoring and Social Integration

The existing literature on women scientists also suggested that being partnered to a scientist might help women by giving them a mentor and helping them to become better socially integrated. A mentoring relationship is one wherein one or more partners in the relationship receive guidance and support from the other partner. Within a relationship, either partner can serve as a sort of peer mentor, helping their partner to navigate their career. Laura was the only woman to describe her relationship as a mentoring relationship (she said that during the early stages of her career, "he was the senior mentor to me"), but mentoring focused on either partner's professional life was evident in the women's relationships. Furthermore, either partner can also help the other partner to become better socially integrated. Being socially integrated refers to the extent that someone is a part of a particular community. For the women in my study, being socially integrated into their field or department means being included in the professional community. Being socially integrated is important because of the extent to which being socially integrated gives them access to information and resources that can benefit them in their careers.

Mentoring

The previous chapter on relationships discussed how the women felt that being understood by their partners was a benefit to being partnered with another scientist. In

addition to being an important part of their personal relationships, being understanding is also a form of mentoring. Colleen said "It has been very helpful for me professionally, to be married to a scientist just because of the support and him knowing what I go through on a day-to-day basis." Colleen's partner helps her think through scientific ideas but also helps her work through "interpersonal relationships with, you know, graduate students or postdocs." Similarly, Heather can call her partner for a quick chat when she had had a meeting that upset her or was unsure what the next step in a project should be. Anna and her husband talk about problems they encounter at work and Gwen feels that she can "relate to what [her husband] was dealing with." Beth said that she likes having "a mate that understands where [she's] coming from professionally." Because of that, Beth said

> You know, there's never any like, what do you mean you have to [work] from midnight to six o'clock, kind of thing, we're always very tolerant of each other's... schedules that way or desire to do something. You know, if he wants to go to a meeting, okay, you know, 'bye bye,' I don't feel neglected or anything like that.

Kathryn finds that when she and her partner share colleagues, they can help each other to understand that person and work with them better. She said, "It's a neat, a neat... a neat relationship to be able to know more directly about colleagues because we also work with that person." Nicole said that she and her husband are able to debrief after departmental meetings. She said, "Because we're often together in situations, that he can, I think, actually explain to me sometimes the 'male' perception of what's happening that I wouldn't otherwise get." Hearing another perspective on issues has helped her to find ways to resolve disagreements with colleagues. On the

other hand, Colleen finds that having a husband in a different department means that she can get a better perspective on department politics because she sees how another department handles issues that hers might be dealing with. She said, "I can see, sort of, through him I hear about how other departments function, how the promotion process works in different departments, how communication works in other departments, how faculty meetings work."

In many of the women's relationships, the women and their partners were on somewhat equal footing and both partners mentored the other. For other women, the mentoring was as more uneven. Jackie was the one woman who talked about being senior to her husband and serving as his mentor. When Jackie's husband began working on his bachelor's degree, she "was able to help him because he hadn't done science or anything for years." Four women, however, reported primarily receiving mentoring from their partners. Colleen noted, "He's older than I am, so I saw him go through that job search process and become faculty. And I thought, if he can do it, I can do it, too." Likewise, Gwen said while she was working on her PhD, "it just really helped to have someone who'd been through it," and Heather said it helped to have a senior scientist around who could give her advice. Similarly, in Laura's marriage, her partner was senior. She said, "At the time we met, he was a full professor and I was an assistant professor, and I learned a lot of techniques from him on writing papers, guiding the research, on writing proposals, and so on." Being closely connected to someone who has already been there means they have a resource who can give them career advice.

Social Integration and Networking

Twelve of the women talked about the extent to which their partners have helped them to network, a large part of social integration. In particular, their relationships with their partners can help them in their interactions with specific people. Isabel, for example said, "[My husband] is sort of one of these people who was sort of an old boy from day one and so it makes me kind of on the edge of that" and helps her to gain respect. She also said that it is easier to approach someone if she knows that someone knows her husband because it gives her "a common point of contact." Similarly, Frances said that being partnered to a scientist can sometimes help her get an in with people because it means that she can more easily talk to people in her partner's research field. Finally, Kathryn said that their relationship means that other people on campus are more familiar with each of them. She said:

> For example, [my husband] is one of the few people teaching [a class on a particular skill] on the whole campus... So, people will want to have their grad students take one of these classes, well there's not hardly anything for them to take, and it will be noticeable that somebody will try to be thinking about this, I'm frankly just there. And, before I can even say anything about it, they'll just say, well, gosh have you thought about [Kathryn's husband's] course. So, it's just, I'm a reminder of what my spouse does.

Nine of the women said that because their partner had a different set of contacts that he was able to introduce them to new contacts. Beth said, when she and her partner met "there were people that I didn't know that he knew, but now I know them and same with me." Likewise, Gwen and her husband have both introduced each other to their own sets of contacts. She said that they know different sets of people and that "I think that's helped, kind of merge the two sets of people." Marion

has been able to meet a new set of contacts when she goes to conferences with her husband. She said, "he goes to various meetings and sometimes he can bring his wife and I get to meet people I wouldn't otherwise meet at various professional functions." Frances, meanwhile, said that her husband helped her to meet people by pulling her into conversations about her subfield.

A couple of the women said that their partners helped them to meet people outside of their specific fields. Colleen's said:

> Through my husband, I've met other faculty on campus whom I wouldn't have met because they're not in my field. So, it's basically broadened my network of other people I know on campus and that's been useful... it's has been good, for example, to meet other women scientists on campus.

Likewise, Laura has been able to make contacts at her institution in other research fields through her husband. At least three of the women of the women including Denise, Nicole, and Evelyn talked about meeting people from other institutions who are in their partners' research fields. Frances said her husband is "kind of known in [her subfield] because he often comes to me with things, so people always ask where he is if I go without him." Since Gwen and her husband work in different institutions, they are able to introduce each other to people from their separate institutions.

Six of the women credited their partners as being outgoing or having other characteristics that were particularly useful in helping them to network. Evelyn, for example, said that her husband's "outgoing" nature helped her to engage in more social events. Similarly, Olivia said, "You know, my husband knows a lot of people, he's way more outgoing than I am, I'm kind of more quiet, and, you know, through

him I met, I met a lot people." Both Frances and Heather described their partners as being likeable, which they both said had helped them to meet people. Isabel and Marion both depicted their partners as being prominent in their fields, which had helped them to network.

Three of the women said that their partners did not help them to network. Jackie, whose partner is in a different field and in a non-research position, said that her husband had not helped her to network because their areas were too different. Likewise, Anna said that her partner had not helped her to network in her field "because we're in different fields." Heather said that because she and her husband work in small field, she pretty much knew everyone before they were together. As a result, he did not introduce her to very many people. But, her personal relationship still helped her credibility in the field. Once she got a job and started her relationship with her husband, she had enough respect from men in her field that they stopped flirting with her.

In addition to helping a woman network, being partnered to someone in her own department might increase her participation in departmental social activities. Both Denise and Evelyn said that their relationships did not increase their participation in professional events like conferences but did increase their participation in departmental social activities. The week that I interviewed Denise, she was invited to dinner with a speaker to which she would not have otherwise been invited. She said:

> We'd had a speaker ... I had talked with her during the day, but they'd asked him to go to dinner because they had to you know, spending department funds and so forth, and so I was going to eat dinner here that was fine, you know and [her work was more closely related to his

> field], it made all sorts of sense, it didn't bother me at all. [Laughs]. And then suddenly at like five o'clock, several people had pulled out of their dinner so they said, "Oh, do you want to go?" I said sure. [Laughs]. So, I went.

Similarly, Evelyn said:

> People in the department have gotten to know me as a person, not so much just as a colleague and I think it helps that my husband is more outgoing than I am. So I tended to get sort of pulled into the, you know, the department oriented social things that I might previously have not gone to or gone briefly to. So because he's part of the department, I tend to go to more things. More dinners with faculty, visitors, things like that.

Being more involved with activities either because your partner is able to help you garner invitations or because your partner encourages you to be more active, can help with social integration. Evelyn said that her relationship with her husband has helped her to obtain professional invitations as well. She said, "When we are at conferences together, I will often meet his colleagues. And then we'll start talking about research and sometimes that'll generate an invitation for me to go and give colloquium some place." In other words, the networking that she has done through her partner has generated professional opportunities for her.

Marion was the only woman to say that she thought that being partnered to someone in her department made her less well integrated. Whereas she said that her partnered helped her to "hang in there when [she] might have given up the field," and that he helped her to network, she was also curious about the extent to which being with him might have held her back. She said "maybe I would have developed more if I was on my own." She also felt that her relationship with her partner affected her relationships within her department as indicated in the exchange below.

> Marion: Here, we only just got here, but I can see where there's a possibility where, in fact, I might be less integrated into the department because of him being there.
>
> Brianna: Why do you say that?
>
> Marion: Because, well, because, people will have some idea and just come to him instead of to me, or something like that. Or they might think of us as a sort of unit and not really think of me as an individual scientist with something different to contribute.

Throughout the interview, Marion had stated that her husband was the more prominent scientist of the two of them. As a result, it may be that she feels as though colleagues value her husband's contribution more than hers and hence do not seek her out.

For the most part, however, women the mentoring and increased social integration that they receive as a result of being partnered to a scientist helps them in their careers. The majority of the women noted that they received some sort of mentoring from their partners as well as help with networking. Often the women reported that their partners also benefited in these same ways.

Being Seen as a Couple

For the women who worked in the same department as their partners or in similar research fields, their partnership affected their identity within their profession. Many of the women noted that their professional identity is tied to that of their partners. Sometimes, being known as a couple can be a benefit to these women but other times, it does mean that they are treated unfairly with regards to everyday aspects of their professional lives, including issues such as raises, office space, or even

communicating information to them. At times, the women indicated that having other couples around could help to mitigate these issues.

Identity as a Couple

Isabel and her partner were already known as a couple when they were in graduate school. She said, "It's such a small field that everybody already knew us [when we were on the job market]. There was somebody at each institution that knew that we were a couple." Heather echoed this sentiment. Marion said that this sort of identity has been problematic for her. She said, "People don't entirely differentiate us, and of course it's always been really hard, well, I can, it's been a little hard." As noted above, she felt that because she and her husband are seen as a "unit," colleagues seek out her more prominent husband more than they seek her out. As a result, being partnered to another scientist has been harmful for her own reputation because rather than being seen as a scientist with her own merit, she is looked at as her more prominent husband's wife.

The extent to which a woman's identity is tied to her partner's may vary based on whether or not they share a last name. Anna kept her last name, partially because she liked her last name and partially because she had already published using it. She likes having a different name from her husband because "it's good to have your own little space." She said that a lot of colleagues actually are unaware that she and her husband are married. She said:

> I feel like I have my totally own identity and I've done it totally on my own and I don't have to think that I've done it, because he's older and already established, I don't want to feel like I, I made it because of him,

> so this way, I know that I made it on my own. So that way gives me some, boosts my confidence in some ways.

Having her own name and identity has been a very positive thing for Anna. Gwen and Olivia also maintained their original names and noted that many people did not know about their relationship with their partner. Olivia said, "I think a lot of people [outside our department] don't realize necessarily [that we are married], and don't treat us any differently." As Olivia's comment makes clear, couples who work in the same department cannot avoid being seen as a couple within their department.

Benefits and Disadvantages of Being Seen as a Couple

A few of the women said that being seen as a couple benefited them. The main benefit that the women reported is that it helped them network as noted above. Isabel said that it helped her to gain credibility. She said:

> He has pretty high visibility in the field and he got the visibility before I did. So I could introduce myself to people and say that I was married to him and they would know who he was and then I would gain credibility from that.

As Isabel earned her own reputation, however, she said that the credibility boost was no longer as important. Marion made similar comments about how her husband's position in their field helps her to gain credibility. Frances said that she liked being known as a couple because "it makes [her] seem a little more grown up sometimes" by giving her credibility as a part of the scientific community, particularly when she meets new people.

At least four of the women reported that being part of a couple meant that they were treated differently in a negative way. As we have seen, many negative issues arose with respect to the job search. These problems were especially prevalent for women in the same departments as their partners. Heather found that when she was looking for a job, others assumed that she would not move across the country from where her husband was already established. She also suspects that departments "don't want to hire a couple, especially powerful couples, because they become a real [voting] block." She also felt that some institutions might have been particularly leery of her and her husband because "[we] have some big grants, so we have two thirds of the money at the table. Right. So all we have to do is agree in a situation and we've won." In other words, Heather felt that a department might not want a powerful couple who would control a large portion of the grant money in the department. Beth was expected to share an office with her husband when she took her first job after graduate school because there was no other available space, but, as soon as an office became available she was given her own.

Anna said that being a couple in the same department might affect her and her husband with respect to raises. She suspects that if one member of a couple is given a raise, then it looks like that "family" already has a raise and the second person might not be treated fairly. Nicole said that she felt that negotiating a better package was harder when people knew you had a spouse who would also need a job because of the difficulty for a couple to move and negotiate for better start-up packages. On a different level, she also felt that "when people know you're a couple, they start to

interact with you a little different, and maybe talk with you about the other person a little differently." She was bothered by the extent to which it meant that personal issues became public and "it's not necessarily anybody's business."

For Heather and her husband, being seen as a couple is not a problem with regards to how others treat them. But, they do struggle to be seen as separate researchers. Although she feels that she has been able to keep an identity separate from his, he is worried about his own identity as a researcher. She said:

> He worries more than me about kind of being sucked into my worldview. He at the moment is a little intellectually lost actually and, I'm not. Um, and so I think, you know, he wants to keep the labs more separate than I do and is worried about losing his identity more than, because you know, he's got these great technical skills [sucking noise] – I would love to suck them up, and so, no I, I was senior enough and the things that interest me are enough, are such that I haven't been sucked into his identity.

Their differing feelings about the separation between their identities may affect how closely they work together in the future.

Nicole finds that being married to a colleague affects her professional relationship with her husband. She said that as a result of this, "all barriers are dropped, so we'll have heated discussion about one topic or another, and we're comfortable disagreeing with one another." As a result, she said that they have had colleagues who were surprised to discover that they were married because of the differing positions Nicole and her husband held on various scientific issues.

Other Couples

Five of the women talked about how useful it was to have other couples around once they were in faculty positions. Having other couples around help to mitigate the

disadvantages presented by being seen as a couple. This was especially true for the women who entered academia earlier. Anna said that, "being a couple within the department, it hasn't been a barrier at all. Because we have other, we have this other couple that was in the department before us, so for us it wasn't any different." Having another couple in the department before them helped to assure that they were not treated any differently. Beth and Denise, two of the other older women, made similar comments about how having other couples around had normalized their situation. At Nicole's previous institution, there had been four other couples in the department. She said "[It] was actually really nice, because it didn't make us weird." Being the only couple in their current department, they have run into problems.

> Nicole: Uh, there's been one particular staff person that I've had huge trouble with this issue and I've brought it up with him repeatedly and his boss and everything else. And, that's treating us as one person. So, it's saying something to me and assuming that he knows it and vice versa or worse yet, thinking that if he expresses his opinion, that my opinion is going to agree with that or that both of our votes don't count because, obviously, it's like – [pauses]
>
> Brianna: Having a voting block.
>
> Nicole: Right, right. So, a lot of those kinds of issues, that he, uh, the staff person, has been vocal about and outspoken about which are extremely irritating and frustrating.
>
> Brianna: Right. And do other faculty seem to disagree with him or?
>
> Nicole: Um, it's hard to tell. Certainly the issue of tell-one-person-one-thing seems to happen a lot. And, you know we do talk about some things aloud with each other, but you can't assume that everything that you say to one person is going to be translated to the other person – there are other things in our life! So that seems to happen a lot, across the board, um, the other issue, I don't think happens quite as much, but, but yeah it can be frustrating.

Not only did having other couples in a woman's department help to mitigate the extent to which being a member of a couple was problematic for women, couples in who worked different fields or different departments did not face the same challenges about being a couple in the workplace. Neither Colleen, whose husband works in a totally different field, nor Jackie, whose husband is not in the academy, mentioned anything about these sorts of issues. These issues affect women whose professional life is tied in some way to their partner's. As a result of being known as a couple, these women find that part of their personal life, their relationship with their partner, is on display in their professional lives. This serves to blur the boundaries between the two arenas and at times means that people treat them differently. As we have seen, sometimes the women benefited from differential treatment, but often it was problematic for them.

Conclusion

Dual career couples in the sciences are seen as being particularly at risk for finding positions together that allow them to both use their skills. This is the one aspect of these women's lives that has really been researched in depth. This focus has created a narrative about how problematic these relationships are because of the effects they have on career options. I do not mean to discount the problems that the women have encountered throughout their careers, particularly in the case of Anna where she was unable to obtain a permanent position for decades. The stories of the women that I interviewed suggest that these issues are resolved for many women,

either because they relocate as needed to get into better positions, are able to negotiate due to outside offers, or decide to compromise with respect to their professional lives.

In reality, many of the women in my study reported benefiting from their relationships with regards to social integration and through both informal and formal collaboration. Despite these benefits, the women were concerned of the negative ramifications of their relationships. Some of the women offered advice for younger scientists who might be considering starting relationships with other scientists and engineers. These comments speak to the issues that the women saw as being particularly pertinent for their relationships. Heather, for example, jokingly said about younger women scientists, "tell them all to marry car mechanics." Similarly, when I asked Isabel what she would say to younger women scientists contemplating a relationship with another scientist, she said, "I would say to them, recognize that if you do that, you're going to have to make compromises about what you do with your career and in particular where you will be." Both of these women's comments reinforce the notion that women scientists partnered with other scientists are concerned about the difficulties that these sorts of relationships cause for the women in them. As noted above, women are concerned about the negative implications that these relationships have for the job search without necessarily seeing the ways that they can benefit from these relationships through formal and informal collaboration, mentoring, and increased social integration.

Relationships that formed when both partners are settled in their careers may create fewer of the job search related stresses, provided that both partners live in the

same area. For example, Evelyn and her husband were both already settled into positions before they met. Individuals who are already settled into their careers but do not live in the same areas as their partner still may face disruptions. For example, although Heather's husband was already established when they met, their relationship affected his job situation because Heather was unable to get a permanent job at his institution. They ultimately relocated as a couple so that they could both be in permanent, tenure track positions.

As noted earlier with regards to the job search, compromise is an important strategy for these women to use with respects to multiple aspects of their careers. If Heather and her husband had stayed in her previous position, she would have been getting "half a million dollars in grant money a year." In the move, she lost her access to those funds, but she said, "I've got enough money, I'm having a baby, I don't need to run a half million dollar grant a year." Through giving up the grant money, she is able to live with her partner and they will be able to raise their child together. Kathryn and her husband, have compromised with regards to fieldwork, as described above, they are going to split their sabbatical between her field site and his. It may mean that they each get less field time, but they are both able to go to their preferred sites.

Some of the women said that they were more likely to compromise than their partners were. For example, Nicole said that she has "been more willing to give up going to conferences or being as strong a participant" in order to care for their daughter. Similarly, Isabel and her husband at times want to go to the same meeting, which would leave their child at home. Isabel said that she is the one who is more

likely to stay home while he goes "because he seems to care more." Describing their positions, however, she said, "I make the little compromises, but I think that he has actually made a big compromise." At times, he notices a position that he would like to apply to, but he ultimately chooses not to because Isabel does not want to leave her position.

I think it is particularly interesting that among the women in my study, the majority of the women, including all of the older women, had overcome the dreaded two-body problem. As noted in the literature review, there has been a trend in recent years for institutions to work to recruit women scientists and engineers, as well as to be more accommodating in hiring couples. It is possible that the reason so many of the women I interviewed were in suitable job situations is that they had benefited from these sorts of policies. On the other hand, it may be that women who were experiencing problems may have been less interested in talking to a researcher or had left academic careers. Regardless, even though my research suggests that couples are able to resolve the two-body problem, this does not mean that institutions should abandon these policies, especially because some of the women I talked to may have benefited from these sorts of policies. Furthermore, as discussed above many of the women in my study who had "resolved" the two-body problem had done so by making compromises. In the future, policies to help dual career couples could help to lessen the extent to which couples compromise with regards to such things as the quality of their jobs and the geographic location of their jobs.

One other issue that arose in this chapter is the extent to which traveling for fieldwork and for conferences can be problematic for dual career couples in the sciences. This is another arena into which policies could be effective in improving the situation for these couples as well as for scientists partnered to non-scientists. Although some larger conferences may already provide childcare, this is not necessarily the norm, particularly among smaller meetings. If institutions help employees to find childcare solutions when they need to travel, scientists, and scientist couples in particular, may be able to travel more readily without concerns about childcare or to fully participate in conferences rather than tending to a child that they have brought with them.

The women that I talked to described multiple ways that their relationships had affected their professional lives. With regards to the structure of science, it affected their job searches, their professional networks, and their ability to travel as well as provided them with peer mentoring relationships. Their relationships also affected the content of science, however. All of the women, regardless of how close their research interests were to those of their partners described ways that their partner had influenced their research either through formal or informal collaboration.

SCIENCE AS A LIFESTYLE

The women that I interviewed see science as being a way of life; they are passionate about science and they enjoy thinking "like a scientist." Given this, it is not surprising that they like to have science in both their personal and professional lives. As a result, science becomes a sort of lifestyle for them. Indeed, the ways that their work and travel schedules affect their partners and their children as well as the ways in which they and their partners collaborate and mentor each other speaks to the extent to which science becomes a lifestyle for these women. There were also other ways, however, that the women approach science as a lifestyle. For example, when speaking about their personal lives, they talked about the ways they use scientific thought and the scientific method to think about all aspects of their lives. In addition, they participate in science-based hobbies and activities in their leisure time. Finally, the women's dilemma concerning balancing their work and their personal lives also speaks to the extent that science is a lifestyle for these women and shows some of the negative ramifications of this.

Several of the questions during the interview prompted the women to talk about science as a part of their lifestyle. These questions included:

- Does the fact that you are married to/partnered with another scientist affect your personal life? How?

- What role does science play in your personal life? Do you talk about science a lot? Attend science events in your personal life? Take your kids to science museums? What aspects of science do you talk about?
- Are there styles of doing your work that you apply to your everyday life? Do you do these sorts of things with your partner/spouse?
- What do you like about being partnered to another scientist? Dislike?

The women seemed to enjoy that science was not merely their profession but was a part of other aspects of their lives as well. They talked about their passion for science and their excitement about having science as a part of their personal lives. The women spoke directly about how they appreciate being able to share their professional lives with their partners. Anna said, "His office is down the hall. So, I mean, it's nice in that we, you know, we can have lunch together." Anna also went on to say that having her husband around means that he is able to support her. Thinking about graduate school, she said, "We had support from each other because we were both there." Other women echoed that sentiment. Frances said that in graduate school, having her partner was "great because it was like a family where he could be at lab meeting and he could, he was there all the time." As noted previously, Evelyn said, "it's very convenient to be married to somebody in the same department because, you know, we have a similar set of references and we can talk about the politics that are going on in the department and it's helpful." It may not be surprising that women are happy to be able to spend time around their partners, but these sentiments speak to

the extent to which these women view their relationship with another scientist as a positive aspect of their lives.

Science as a Way of Life

In their interviews, the women talked explicitly about ways that they see science not just as their profession but also as a way of life. This is unsurprising given the extent of their training in science and the amount of time that they spend working. The women describe their passion for science, as well as the ways that they and their partners "think like scientists" in their personal lives. Science and scientific activities are just simply a part of what they do. For the most part, the women seem to enjoy having science pervade multiple aspects of their lives.

Passion for Science

It may be that one of the reasons that so many women scientists partner with other scientists is because they are attracted to scientists' passion for their work. Beth talked about this. She said:

> I certainly was attracted to [people in my field] because, you know, it's partly the passion about the work thing and, yeah, and, well, the closeness of being within the same department just throws you together for a lot of hours.

Frances made a similar comment in that it was only other scientists who understood her passion and excitement for her research. When she dated non-scientists, at times they were dismissive of science.

Throughout the interviews, the women talked about the passion that both they and their partners felt for their chosen field. Gwen, for example, talked about being an

engineer as something that defines her and the way that she thinks. She said, "My friends, they just know I'm an engineer and they know that's the way I approach life." Likewise, Colleen describes herself and her husband as being "very focused on [their] work, so it sort of penetrates many aspects of [their] lives" and Denise said, "I like science and I like to do it all the time." Similarly, Laura said, "I'm still after thirty something years excited about [my field.]." Olivia and Nicole also said they were passionate about their work. Anna also expressed her excitement for her work; as mentioned previously, she and her husband were excited to be working like graduate students again since her children were grown and gone from the home.

Jackie again described her husband, an engineer with a non-research-based career, differently than how their other women described their partners had research-based careers. Jackie said:

> He's unusual in that he's not married to his career in the same way that I am. If I said, "Let's sell everything and move to Panama tomorrow," he'd say, "Okay, fine. Let's start packing." [Laughs]. So, I have to be kind of careful about what I say.

Jackie's husband was the only partner who did not have a research job. This may underlie his lesser commitment to and passion for his work.

Thinking Like Scientists

Seven of the women also described science as being something that guided their thoughts throughout their lives. This was evident, for example, in the ways that they talked about science being in their genes and in those of their family members. As mentioned in the previous chapter on relationships, some of the women talked about scientific ability as being genetic. Using science to describe their strengths is

indicative of how the women see the world through a scientific lens. Five of the women talked about how they used scientific thought around the house. Beth also talked about how her training to think about problems as a scientist carry over to tasks in her daily life. She said:

> I'm not conscious of it, but the way that I approach, oh, take Christmas shopping [laughs] is probably governed by my style that I get, that I approach research problems or stuff like that, I think it just translates over. Because science is in the way I try to, think about, societal issues or things like that.

Frances said that she and her husband "have an analytical way of looking at life." They enjoy thinking about the world around them as scientists. For example, she describes being at a wedding on a ship and discussing the forces governing the ship's movement as well as of using their background in science to understand their dog's behavior. Kathryn feels that, as scientists, she and her husband are "innately curious people." They like to make and test hypotheses to understand both their relationship and their children.

> Kathryn: You know, I construct hypotheses, I test hypotheses, I draw conclusions, I may not do it as formally, but in some cases, I do, do it as formally... I will sit there and construct my hypotheses about what's going on and then I will test my hypotheses...
>
> Brianna: What kinds of hypotheses?
>
> Kathryn: Well, one of the things that I've found really interesting is that it's really difficult for my spouse, as with many people, to move on from an issue... And, one of our sons is exactly like this and I, very early on was trying to deal with something, and I realized, you know I am going no where until I just resolve this thing with him, so I sat there and it suddenly goes "ding! [My husband] is just like this." And, so, when he came home I said, "you know, I just realized this thing about how [our son] is and I think you're just like this and I think we're not going to go anywhere until we deal with this" and this happens in

> various ways, but, and so, then we sort of tried it in a sense and just said let's work with this… So, that's a very specific example, but I think that it's um, that whole hypothesis-testing framework, you know, I feel like we're very conscious about it.

Laura and her husband, meanwhile, used science in a legal document. She said:

> [This] document had in it an algorithm, a formula, for deciding the value of our house – it was an equation, with variables. And the lawyer couldn't handle it, he couldn't understand what it meant, it wasn't a very difficult equation, but he didn't understand it. He talked to us about it exceedingly, and then he wrote it out in words so that it would be clearer. But, actually, the formula was the clearer thing, because it said according to these variables, the house value will be that much.

Because science was a big part of how Laura and her partner thought, it was natural to them to use it to describe the value of their home.

Just because the women and their partners used scientific knowledge to complete tasks at home does not mean that the women and their partners approached problems similarly. Gwen, for example, said that the difference between her background in engineering and her husband's background in science affects how they do things around the house. She said "I'll be more likely to just clean stuff up and just good enough whereas if he's going to do it, he's going to do it the whole way." She had a similar story about when they were looking for a ceiling fan. While Gwen was happy with the first ceiling fan they saw that met their requirements, her husband wanted to methodically consider all their ceiling fan options. Gwen sees these differences as being attributable to their differences in their fields of study.

Some of the other women expressed their strong feelings about thinking like a scientist. For example, Marion said:

> I really like being a scientist and being married to a scientist because I like the scientific method and approach and thinking like a scientist and all that. You can think like a scientist about anything and it's kind of rewarding.

She and her husband like to work through problems like this one she described:

> You're walking along and there's some mud and it's a certain consistency and you can start thinking about why is this mud like this but that mud over there it like that, that other way, so why are they different.

Nicole also likes thinking like a scientist and said, "It's hard to imagine being around somebody who doesn't understand the scientific method."

There are other ways in which science is a way of life for the women in this study. For example, three of the women that I talked to matter-of-factly described fieldwork as being a part of their families' lives. Anna, Beth, and Jackie all told stories about taking their family members with them to do fieldwork. They describe their partners and children as being active participants in data collection. Because science is part of their way of life, data collection is a part of family life for them. Anna also said science is a part of what she and her husband do and what they did as a family when their now-grown children were younger. Denise said that she does not want to do other things and would find it difficult if her husband was interested in a lot of things outside of science. Indeed, Denise has no interest in retiring from her position. She asks, "but then what do I do?" Marion also said that science carries into their home life, but she expresses concern about it. As mentioned earlier, she said, "My professional life never entirely turns off because… there's this scientist there who's very intense and interested, he's not intense, but he's very focused, on, um, the

science." In other words, at times having science as a lifestyle can be problematic for these women.

One of the ways that science becomes a lifestyle for these women is that they see it as being integral to their way of life. This happens because of their passion for science and because of the ways that they are trained to "think" like scientists. As a result, science and scientific activities are just simply a part of their lives, something that they seem to take pleasure in. This is not to say that the women and their partners necessarily take the same approach to every issue. Jackie, for example, described her husband as being less passionate about his work and Gwen described ways that she and her partner approach problems differently based on the differences in their training.

Science at Home

All of the women mentioned some way that they used science at home. This is another way in which science is a part of their lifestyle. They all said they talked about science at home regardless of their other hobbies or activities. Beyond that, the extent to which science was a part of their life at home varied among the women. The women described both science-related hobbies and non-science related hobbies. They described ways that they tried to make sure that their children were exposed to science and ways that they tried to make sure that children were exposed to things other than science. A few of the women described other ways that they use science at home in order to do chores and other tasks around their home. But, some indicated either that

they tried to limit the amount of science at home or that their husbands were more interested than they in having science play a larger role in their lives.

Talking about Science

All of the women said that they and their partners talked about science at home. Isabel said it is the most common conversation topic between herself and her husband. She said, "Sometimes we talk too much about it ...we can talk about that instead of talking about other things we need to talk about." Kathryn, meanwhile, said that they talk about science "all the time...pretty much every day." The ways that the women and their partners talked about science and home varied and included topics such as their research, their workplaces, the politics of science, and general science. Six of the women said that they talk with their partners about science and current events. Anna and her husband talked about the current administration's effect on science policy and the ways in which that impacted their funding agency. Likewise, Evelyn and her husband talk about science that is in the news. She said:

> We tend to talk a little bit of science when it's in the news. So, we would talk about, um, federal government budget with regards to science funding, we would talk a little bit about other things in the news that have to do with science. If there's a big thing in the news about evolution or stem cells research, then we talk about that more than we probably would if we didn't have strong opinions about science and science literacy and the importance of science to society.

Beth and her husband talk about "global warming, environmental issues, [and] stuff like that." Frances and her husband also like to talk about such topics. Colleen and her husband talk about science things that they read about. When I asked Gwen if she and her husband talk about science, she said, "We do talk about it a lot. We're just

nerds at heart. [Laughs]. And it is mostly when we're reading the newspaper over breakfast or something like that or you see a news report or a documentary."

Seven of the women said they talked about science in ways that related more closely to their careers. Colleen and her husband, for example, talk about work. Gwen and her husband talk about the politics of science, "mostly relating to funding for the type of work [she works] on for the government or academics are likely to get to support different fundamental research." Marion and her husband also talk about funding and other science "gossip." On the other hand, Denise said that she and her husband tend to talk about the content rather than the politics of science. Heather said she and her husband debrief about their days on the ride home, "I love that time because you go and you're not just talking about science, but you're talking about what happened in the faculty meeting or what to do." Likewise, Kathryn said she and her husband talk in the evenings about what happened at work that day and that they try to include their children in the conversation. Laura likes to talk to her husband about problems she encountered such as those that arose when she was organizing a professional meeting. Jackie and her husband also talk about work. She said that her husband mentioned work more often when he was happy with his job. Nicole said, "a lot of our conversations at home relate to work in one way or another... I would say we talk about science a lot." She explains this by saying that it "pervades [their] way of thinking about things."

Hobbies, Activities, and Interests

Nine of the women participated in hobbies or other activities that they engaged in during their free time that were related to science. Both Gwen and Nicole subscribe to science-related magazines. Nicole and her husband also have a membership to a science museum. Anna said:

> We like, I like a lot of other science things. My husband's a big fossil collector and I like to do that, those kinds of things. So, you know, we go to the beach, we're looking at rocks... We love lava flows in Hawaii, you know. So, I guess it's just the kinds of things we're interested in.

Denise and her husband watch Nova, a science program on public television, and Denise enjoys gardening and uses her knowledge of science to help control pests in her garden. Beth said she and her husband have a general interest in science:

> I enjoy going to American Association for the Advancement of Science meetings, which is a much more general thing, we belong to Sigma Xi, which is a science honorary thing, which, they have a general magazine we get and, and, because of my husband's interest in meteorology, we'll go to, there's a meteorological society thing here, which has, uh, interesting talks or we'll go to the geological society banquet or something like that. So, we're sort of science nerds, and, so we'll go to the American Museum of Natural History in New York, or stuff like that.

Frances and her husband have numerous science related hobbies – they like to read popular science magazines, see movies with a science connection, and belong to a natural history museum. In their free time, they have volunteered to help out researchers who work on nature related topics. They also enjoy using field guides to identify the fish that they have bought to cook.

At least four of the women, Gwen, Isabel, Kathryn, and Olivia, mentioned an interest in the environment and described it as an interest they pursued in their free time. As I mentioned before, Gwen and her husband's had a passion for the environment that led them to choose not to have children. Similarly, Isabel's husband restricts his travel schedule to reduce the amount that he flies. Isabel has been leading discussion groups on Al Gore's movie about global warming, *An Inconvenient Truth*. She said, "I'm just very interested in that and I take any opportunity I can to educate." Olivia, meanwhile, said, "I'm very interested in one part of science, which is climate. I've forever been interested in climate and climate change, so I follow that pretty closely." Because of the large amount of attention that environmental concerns have received in recent years, an interest in the environment may not be unique to scientists. Nonetheless, a concern for the environment is related to science.

At least five of the women had hobbies that were unrelated to science. These ranged from outdoor sports to dancing. Others were involved in civic or charitable activities. When asked whether she and her partner had any science-related hobbies, Heather said, "No, we're not completely sad... We basically watch DVDs and have pets." She was quick to point out that she and her husband had a life outside of their scientific work. Denise said that travel and animals are their main forms of recreation.

Other Science Around the House

Three of the eleven women with children mentioned ways that they had encouraged their children to pursue science. Kathryn and her husband talked to their children about science concepts and bought them books related to science. Evelyn

noted, "Once our daughter gets a little bit older, I picture us taking [her] to the Science Center and things like that." She went on to say that their family activities "will have more of a science flavor when [they are] trying to indoctrinate the little one." Likewise, Nicole said that she planned to restrict her daughter's TV viewing to science-related content. Heather and Frances, neither of whom had children yet, were both excited about the prospect of having "geeky" children who enjoyed science. Frances said, "We want to have kind of freaky, geeky kids and teach them all this stuff and have kids who like know all their animal names and know all their rocks and are interested in that kind of thing."

The women used science in their home lives in other ways as well. Heather and her husband were looking forward to watching their baby's development and relating it to their knowledge of human development. Laura and her husband used jargon specific to their field in order to describe things around the house, and her husband used his engineering skills to fix things. Olivia said that her husband's background in the life sciences was helpful, "If there was a problem, a health problem with the kids or something, he could, I felt relieved that he could deal with it, be knowledgeable about it." Nicole and her husband "use a lot of techie tools to do everything [they] do – taxes and the nanny's fee schedule." Because these sorts of tools were easy for each of them to understand, they found them useful at home.

Some of the women described ways that they explicitly tried to limit the amount of science in their houses. Marion said there's, "just a limited amount of time… so if we have some time, um, we like, we might rather go hiking than look into

a science museum." Similarly, Jackie said science played no role in her personal life. She said "Not at all! I'm done with it! I don't even like, I don't play on computers." While she might use the Internet at home, that she did not "want to talk about work." Kathryn was concerned about exposing her children to other things. She said:

> I'm very conscious of how science heavy our household is, so I'm also for my kids, trying to model a lot of other things... so, I'm, you know, doing things on geography, trying to talk about different cultures, trying to talk about differences and approaches.

Colleen and her family did not do many science related activities at home either. She said, "we do go to science museums, but we don't do that every weekend." Likewise, Gwen and her husband tended to have friends from outside of science, particularly people that they met through their involvement in sports. Laura preferred to have non-science related hobbies and Olivia liked to do things like go to art museums in her free time.

Five of the women felt that their partners were more interested in science than they were. Although Jackie said that she wanted to be done with science when she came home, her partner was more interested in trying to figure out how things around the house worked. Kathryn said, "[my husband's] world isn't as large in terms of his span of interests as mine is" so she has to be the one who works to expose their children to non-science topics. Laura's husband liked to continue to think about his work at home, but she avoided doing this. Olivia said, "More often my husband will read something related to science whereas I will read a novel." Olivia did this not only to have an outlet other than science, but also to maintain language skills. Denise's husband liked to read science fiction, but she preferred novels and Frances

said that her husband was more likely than her to read science-related magazines because she tended to "get a little bit burned out sometimes." Each of these women describes science as being a larger part of her husband's life than her own.

Gwen said, "[science is] a bigger part of our lives than if I weren't married to an engineer." Many of the women I talked to might have expressed similar sentiments regardless of whether they had science-related hobbies or tried to avoid science in their personal lives. Indeed, for the women that I interviewed, the extent to which science is a part of their home life through their conversations, their hobbies and activities, and daily life around the house speaks to the extent to which science is a part of their lifestyle.

Finding Balance

Almost all of the women mentioned the difficulties in finding balance between their personal and professional lives. Balancing work and life is one of the biggest concerns for women scientists in general, not just those married to or partnered with other scientists (Rosser, 2004a; Rosser and Daniels, 2004; Sears, 2003). Finding strategies and coping mechanisms to better achieve balance becomes part of the lifestyle of a scientist because of the tension that exists between their personal and professional lives. As Anna said, "When you're here [at work] you want to be with your kids, and, when you're at home, you're think of all the things you should have been doing." The women spoke about the demands of their jobs and the narrowness of their lives. They also talked about the difficulty that they had in carving out time to

spend with their families as well as the coping mechanisms and strategies they used to address these issues of balance.

Demanding Careers

The women repeatedly mentioned the demanding hours that research careers in science and engineering require. Anna said that, as a scientist "you don't have a lot of free time per se." Similarly, Olivia said that her job was "a very busy job, with a lot of commitments" so it ended up impacting her life outside of work as well. Marion said that she always had work to do and had a hard time keeping up with it. Colleen felt that outsiders do not always understand how teaching just a couple classes a week can take so much time. She said, "You know, fifty minutes a day is not that much work, that's what I'm paid for you know... the hours you teach does not mean the hours you work." Both Jackie and Isabel felt that their partners had different attitudes towards work because they have jobs that tend to be 9 to 5. This encouraged Isabel to limit her hours working and her husband was able to help at home because of his shorter hours. Kathryn said, "I think the biggest thing is that we don't have much time. Our jobs are big." She sees this as one of the disadvantages of being partnered to another scientist. She laments that the demands of their jobs combined with the demands of everyday life prevent them doing things such as spending time with their friends.

There was not a lot of time for the women to do things other than their jobs. Even monumental events like giving birth are fit into busy schedules. Anna recalled, "I had [my daughter] on Friday and I was teaching my classes again on Monday, so [it was] that kind of environment." Job demands also present problems for more day-to-

day activities. As Laura said, "someone needs to take out the garbage" even among families of scientists and engineers. Having a baby has affected the hours that Evelyn works. She said:

> So, I used to be able to rely on getting a lot of work done on evenings and weekends and that has been very much restricted since she has been born. So, I'm hoping to be able to figure out how to work that in a little bit better, but so far, it's been hard to get anything done.

Finding balance is a real struggle for Frances who said:

> We weren't going to get trapped by academia and we wanted to like spend time together, we wanted to start a family, we wanted to have hobbies and we wanted to, you know, cook – we cook, but it's like a real effort.

She added:

> My friend had a baby and I didn't get a gift out to her for like two months and I didn't see the kid, like I didn't go, I wasn't there, like I wasn't involved in things because we're both so career driven right now.

Frances feels that making time for any activities outside of work requires a significant effort and that she and her husband are often harried. It's also causing health problems for Frances. She said, "I'm having these chronic migraines and I'm on a lot of medication for it and I can't get off the medication because I'm on this sort of treadmill of this stress problem." The demands of their careers severely restricted the women's ability to accomplish things in their personal lives, and at least in Frances' case, created medical problems.

Isabel, on the other hand, saw an upside to the demands of their careers. She felt that it made her more efficient than some stay at home moms. She said:

> Like, I'm able to be on the parent council and organize a party by sending a few emails and making decisions about it and I can see them saying, 'oh, I don't possibly have time to do that.' So, I think I'm more efficient. Especially when you're a faculty member, you know, at my stage in my career, you have to be efficient because there are so many demands on your time.

Although she might prefer to be less busy, she feels that it has made helped her to do some things more efficiently.

Narrowly Focused

For at least three of the women, problems with balance arose from the ways in which science had narrowed their focus in life. Anna said that she thought that scientists might be more narrow-minded than non-scientists and that there was a lack of breadth in her life. She said, "I don't think it really bothers my husband that we don't know many people outside of [our field], but it bothers me because I like, you know, I like having a broader base." Likewise, although Frances expressed a lot of enthusiasm for science, she had some reservations about the narrowness of her life. She said, "[Science is] all you know and all the people around you do that. I'm not sure that's super healthy." She and her partner are concerned with leading a balanced life, but she feels that they really have been unable to do it thus far. Heather said that she and her husband "do have to be careful not to talk about work all the time," especially because they do not have children to change the subject once they are at home. Marion said that she enjoyed being able to talk about science with her husband at any time, but she also said, "At this point, I just want to sort of be the best scientist I can be, but still have a sort of life, you know, like once in a while be able to do

something else." Although she could devote more hours to her career, her personal life would suffer.

At least two of the women were more positive about this narrowness. When asked about any disadvantages of being partnered to another scientist, Evelyn said:

> The downside? I think maybe my horizons aren't as broad as they would be if I were married to an architect or something like that where you're really intersecting with a completely different walk of life. That's a relatively small downside.

Having science play such a large role in her life was not a problem for her. Denise similarly said, "I like science and I like to do it all the time." She noted that she and her partner did not have much of a personal life, but the narrowness does not seem to bother her either.

Limited Time

Demanding hours at work coupled with their passion for science can, in some ways, limit the time that the women have for their families. However, having children can also broaden women's lives. As mentioned in the chapter on relationships, children broadened the types of friends that scientists have and made them limit their work hours. Frances said, "I'd like to have a child and I'd like to have dinner with my child every night and possibly more than that, probably more than that and weekends and all of those things." Given the demands of their careers, she and her husband felt as though making time for that might require changes with respect to at least one of their careers. Jackie's husband wanted her focused on home when she was at home. She said this is helpful because it helped to "pull you away from being, your whole life focused on your job." She did get frustrated, however, with her job. She said:

> When my kids were small, when I would write proposals, I would just, I would be, really annoyed that I wasn't able to spend the time with my kids that I wanted. It used to strike me every time I would write a proposal.

Likewise, Isabel said the extent to which science was a part of their conversations at home was not fair to her daughter, especially at dinner or when they needed to talk about other topics. Olivia felt that she and her partner did not have enough time for each other.

Strategies and Coping Mechanisms

Over the years, the women have used different strategies to combat these problems. At least three of the women try to create separation in their professional lives in order to keep their work life separate from their personal life. Frances limited any displays of affection at work when she first became involved with her partner because she was concerned about being seen as professional. Two of the women talked about not wanting to collaborate in order to avoid work from seeping over into home life. Evelyn never thought it "would it be nice if we collaborated because I think, you know, we spend enough time together as it is." Likewise, Olivia and her husband tried not to talk about work at home so that their professional life does not carry into their home life. Other women take a different approach to this, however. Frances' story (See Chapter 3: Women Scientists' Relationships) about how her partner brought a Memorial Day barbeque to her in the lab is an example of this. Instead of trying to find balance by creating a separation between her personal and professional lives, at least on special occasions, she and her partner looked for balance by bringing their personal life into their professional lives.

Other women talked about hiring help for household tasks as a way to ease the tension. Olivia said, "I kept being jealous of people, of scientists, of male scientists who have a wife who'd be at home and do everything whereas I didn't have a wife. So I kept saying, jeez, I need to have a wife." Six of the eleven women with children mentioned hiring help with childcare. At the time of our interview, Nicole had run into problems after her nanny quit. She said:

> We are frantic trying to find somebody else and it looks like we're probably not going to find somebody else before she leaves us, which means that we're going to be frantically trying to rearrange all out meetings and all that kind of stuff to keep out work going and take care of her.

Others got help from their families. Jackie's mother once helped out when she was doing fieldwork and Nicole's partner's mother helped out when they both went to the same conference, although this turned out to be a less than satisfactory solution. She said, "Neither one of us liked the way that she was watching our daughter, so that didn't work out." Frances and her partner had recently hired a cleaning service. She said:

> I swore we'd keep it between the two of us, and I've of course I've been telling everybody, we've decided that we have two incomes coming in and I'm going insane, once a month we're getting a cleaning service to come into our house and we're buying back a day a month that we do not have to clean. Today was the first day we did it, and we came back and... oh my god, the house was clean for one time this quarter. Um, and that, in terms of quality of life, is huge.

Hiring a cleaning service was a strategy that Frances was using in order to mitigate the problems created by the demands of being in her first year as a tenure track professor.

At least five of the women also talked about how the flexibility of their jobs has helped them to balance their personal and professional lives. After the birth of Beth's first child when she was in graduate school, she was able to take a reduced load of classes. When her husband graduated, she was able to move with him to his new institution and work on her thesis from afar. After her partner's career needs dictated that he move to a new institution, Beth was able to spend time with him while on sabbatical. She said "I was due for a sabbatical, so guess where I took it?" It was after that sabbatical that she took a full time position at her partner's new institution. After living in separate cities for a while, Colleen was able to tele-commute in order to be able to live with her partner. This speaks not only to the flexibility of Colleen's position, but also the flexibility of her particular research, as many sorts of scientific research would make this difficult. Nicole noted that the flexibility of her work schedule allowed her to be flexible with regards to childcare. Likewise, Jackie said, "I had a lot of flexibility because of my particular career so that I could spend more time with my kids at the critical times." Kathryn similarly felt that she continued to benefit from a flexible schedule. In a more rigid job structure, she noted, "I couldn't go pick up my kids at 3pm, I like being able to do that." Furthermore, her position, a tenure track position focused on teaching, gave her additional flexibility. She said "having placed myself out of the grant race and doing my research gives me a lot of flexibility." As a result, she was able to make more time for herself rather than maintaining as rigorous of a research schedule as her husband who had a more traditional academic science appointment.

Four of the women noted that their partners demonstrate even less flexibility or willingness to change schedules for issues outside of work. Isabel's husband was a less flexible person than she was with regards to their child. She said:

> He is just less able to say, "okay, I'm going to take off an hour early to go to her school speech" or whatever, he's just psychologically less able to make those kinds of adjustments on a day-to-day basis.

She was also more likely to restrict her travel in order to stay home with their child than he was. Likewise, Colleen was more likely to stay home with their children when the children were sick and Olivia was more likely than her partner to take her children to the doctor when they were young. Kathryn notes that chores are not split evenly in their household, but it has gotten better over the years.

Many of the women that I talked to cited difficulties creating balance between work life and their home life. This pattern cut across the different age groups represented in my study. The main ways that the women talked about the problem of balance was the demands of their careers, the narrowness of their lives, and the limited time they had to spend with their families. The women talked about three things that helped them to cope with these problems: trying to create separation between themselves and their partners at work, hiring people to help with childcare or housework, and utilizing the flexible schedule that an academic career allows. Because of the large effects that their careers have on their time for their personal lives, this issue of balance becomes a part of the lifestyle of a scientist.

Conclusion

The literature on women in science talks about the problems that these women encounter with regards to balance, but it does not talk about other ways that their professional life affects their personal life. As I have shown in this chapter, at least for women scientists and engineers married to and partnered with other scientists and engineers, their careers affect their lifestyles in other ways as well. These women see science as a way of life and find that science is incorporated into their home life. In this way, there are positive ways that their professional life affects their personal life.

In some ways, the women benefited from the ways in which science became a part of their lifestyle. The women seemed to enjoy sharing science hobbies with their partners or thinking like a scientist and at times benefited from talking about science with their partners. Regardless, the ways in which their professional lives come to affect their personal lives and lead to science becoming a lifestyle for these women is not necessarily a good thing. This is particularly evident when the women discussed the topic of balance. These issues surrounding work/life balance particularly distressed some of the women. At times, these issues were compounded by the fact that the women were partnered with another scientist. For example, many of the women said that their lives were narrowly focused on science. If a woman had a partner in another field, she might be less likely to make this sort of statement.

Each of the issues that I have talked about in this chapter related to how the women see science as a lifestyle affected women in different age groups. In other words, both the older and younger women whom I interviewed talked about their

passion for science, ways that they use science at home, and the issues that they encounter with balance. Like other issues for women scientists and engineers, although it initially seems like a woman's relationship with another scientist would negatively affect her personal relationship because of what is known with regards to work/life balance, the women's personal relationships also benefit because of the ways that science becomes a part of their personal life.

DISCUSSION

Historically, many women scientists and engineers have been married to and/or partnered with other scientists. Marie Curie, arguably the most well known of all women scientists was married to fellow Nobel-Prize winner Pierre Curie. Historically, through such marriages/partnerships, women scientists and engineers gained access to the world of science (Creamer, 2001; Ogilvie, 1989). But, these relationships have also created problems for women, most notably through anti-nepotism rules that forced many women to give up their jobs upon marriage (Rossiter, 1982, 1995; Tolley, 2003).

Today, there are still many women scientists and engineers who marry and partner with other scientists and engineers. Like women of the past, women today continue to benefit from these relationships. As the women interviewed for the qualitative portion of this work indicate, being partnered with a scientist has given women scientists a number of advantages. It has provided for them a professional mentor and has helped them establish solid scientific networks. The women also report that their partners understand them and their passion for science and that they enjoy having science-related hobbies and interests in common with their partners. Like women of the past, many women scientists today point to ways that these relationships prove difficult either because of the ways that these relationships limits job opportunities or because science looms too large in their lives.

Despite women scientists' and engineers' propensity to partner with other scientists and engineers, there are many unanswered questions about these

relationships. My analysis of Census data allowed me to ask which women scientists and engineers were more likely to partner with other scientists and engineers. My interviews with women scientists and engineers allowed me to address several other questions including: why these relationships form, and the implications these relationships have for scientists' lives at work and at home. My research also allows me to speak to the culture of science and the interactions between scientists' personal and professional lives.

Looking for Patterns

Analysis of the sub-sample of the 2000 US Census data showed that among partnered academic women scientists, women who were not US citizens were 176% more likely to be partnered with other academic scientists than women who were native-born US citizens. Among female, native-born US citizens those in life science occupations were most likely to be partnered with other academic scientist partners, followed by women in physical science occupations. Women in all other science occupations (computer science, mathematics, engineering, social science, and technician occupations) were significantly less likely to partner with academic scientists than women in physical science occupations. Women with master's degrees or professional degrees were less likely to partner with academic scientists than women with doctorates. Among female US born citizens, there were no significant differences between women in different age groups. Partnering with another scientist was not influenced by the race or ethnicity of the women. The probability of marrying

another academic scientist did not differ between Hispanic women and non-Hispanic women or between white women and either black or Asian American women. Likewise, partnering with another scientist was not influenced by whether the women were married or cohabitating with their partners. Women residing in metropolitan areas were more likely to partner with academic scientists than were women scientists residing outside of major cities.

In some ways, the characteristics of the women in my interview sample were consistent with the patterns evident in the Census data. One third of the women my interview sample (five of the fifteen women) were non-US born citizens. This is in line with the finding from the analysis of Census data that non-US citizens were likely to partner with scientists. In the interview sample, seven of the women were in physical science fields, five were in life science fields, and three were in engineering or computing fields. This is also consistent with the Census analysis that indicated that women in physical sciences and life sciences were most likely to partner with other academic scientists. Likewise, all of the women in my interview sample had PhDs, the group that, according to the Census analysis, is most likely to be partnered to other academic scientists.

The differences with regard to partnership between women based on their citizenship status suggest that cultural differences between women scientists from varied cultural backgrounds affect their likelihood of partnering with other scientists. Future research may need to be done to determine the reason this pattern exists. It could be related to cultural differences, visa issues, or some other issue. The

internationalization of graduate education has received a significant amount of attention in recent years (Nerad & Heggelund, 2008). My findings suggest that it is important for research on non-US-born citizens in the US academic workforce to consider the differences with regard to family and work/life balance issues between women scientists from different nationalities and citizenships. My finding that non-US citizens working in the US are more likely to be partnered to other scientists than US-born citizens suggests that the two-body problem and dual career issues for non-US citizens may need to be taken into account when hiring non-citizens.

The finding that women academic scientists living in metropolitan areas are significantly more likely to partner with other academic scientists is also particularly interesting. This may indicate that academic couples in the sciences have an easier time finding employment within metropolitan areas or that they seek out opportunities in metropolitan areas because they perceive that it will be easier to find two positions in these areas. Indeed, research indicates that PhD recipients are limited with regards to where they can live (Kulis & Sicotte, 2002; Rosenfeld & Jones, 1987). This may result from the fact that there are more varied employment opportunities within metropolitan areas than there are in non-metropolitan areas.

Women Scientists' Relationships

The scientists interviewed for my study noted that their interest in science affected a variety of their personal relationships, not just their relationship with their partner. Relationships affected included those with their parents and grandparents,

with people they dated, with their current partners, with their children, and with their friends. The overall impression is that their interest in science has influenced the lives of these women in very fundamental ways, not just in terms of their professional lives.

Historically, many women scientists have had family members who were also scientists (Rossiter, 1982). The women that I interviewed were divided with regards to whether or not there were scientists among their families. Sixty percent of the women had scientists in their families and the other forty percent did not. The women's relatives who were scientists included their parents, grandparents, and one uncle. Only a couple of the women who had scientists in their families recalled science playing much of a role in their home lives while they were children. Although their family members may have influenced their decision to study science, none of the women, even the woman whose parents were both scientists, indicated that their relationships with their family members affected their decision to partner with a scientist. The older women who did not have scientists in their families were pioneers of sort, being the first in their families to attend college or to go away to college. Although these pioneering women did not describe themselves as having difficulty fitting in with their families due to a lack of shared interests, a couple of the younger women who did not have scientists in their families did. However, other younger scientists without scientists in their families of origin described their families as supportive of their career choices nonetheless. A couple of women spoke of older female family members who were interested in science but unable to pursue those

interests. These scientists described their foremothers' interest in science as something that encouraged them in their own scientific pursuits.

Echoing reports in various biographies (Abkemeier, 2006; Wells, 2006), several of the women interviewed noted that their interest in science affected whom they dated. All of the women recalled dating classmates or coworkers either in their current relationship or in past relationships. At few of the women indicated that non-scientists' perceptions of scientists, particularly with regards to their intelligence, made it difficult for them to date non-scientists. Although a scientist could partner with a non-scientist with the same level of education, women scientists' experiences with non-scientists intimidated by their intelligence resonates with Elaina Rose's (2006) assertion that women have tended to partner with men who have at least as much education.

Almost half of the women had previous relationships with non-scientists, three of these relationships occurred when the women were undergraduates. These women described their undergraduate years as a time when they engaged in more diverse interests and interacted with more non-scientists, increasing the likelihood that they would develop relationships with non-scientists. A couple of the women who had dated non-scientists before meeting their partner described such relationships as difficult because the non-scientists did not understand the women's interests or science-imposed schedule. As has been reported previously, it was hard for the women to communicate about their interests in science to non-scientists (Gusterson, 1996) or to feel accepted by them (Levine, 2006; Wilson, 2005).

Eighty percent of the women interviewed had relationships with other scientists before they became involved with their current partner. The women suggested four reasons that relationships form between scientists. Partnering between scientists may occur because of the amount of time that scientists spend at work both during graduate school and after entering the workforce. This time allotment simply means that many of the scientists' waking hours are spent in proximity to other scientists. Others suggested that scientists tend to befriend each other because of common interests. One woman suggested that scientists tend to partner with individuals in their departments due to aspects of the structure of graduate education in science that cause them to spend time around other scientists such as the hierarchical classes and the extent to which science graduate students are funded within their departments. Other women specifically referred to the appeal of sharing a passion for science with one's partner, while still others noted that women scientists just want a smart partner. Male scientists may want some of the same things in their relationships; one woman said that her husband was looking for a relationship with another scientist.

All of the women, except for one, met their partners either through school, in an academic work setting, or at a professional conference. Many of the women who met their partners through school or a work setting had known their partners for a while before they began dating. The women who met their partners at conferences all started their relationships with their partners while they were living in different geographic locations. The one remaining woman met her partner when he was in the

military, before he began his training as a scientist. The high proportion of women scientists meeting their partners at work or school may be peculiar to science careers given that, overall, only about one quarter of all married couples meet either at school or at work (Whyte, 1990). Although scientists may spend more years in school than non-scientists, this does not account for this difference because Whyte's research looks at couples who met *either* at school or at work. Indeed, the difference may be due to scientists' passion for their work and the long hours that their careers require.

The women all described being understood by their scientist partners in a way that a non-scientist might not understand them, a sort of understanding I would label as "informed understanding." In other words, the women's partners were not merely empathetic with regard to the women's passion for and careers in science, but rather had an understanding informed by their own experiences with science. As a matter of fact, despite describing themselves as having difficulty dating or fitting in with non-scientists or being "nerdy," the women felt understood by their partners. Many of the women talked about ways that their partners understood their general interest in science or their interest in their specific research topics. Indeed, similarity of interests is often a reason for attraction (Mainiero, 1993). Given that some of the women wanted partners who were passionate about science, it is not surprising that some of the women said that their partners understood their passion. Women also said that their partners understood the demands of their careers including things like the reasons that they work long hours and their need to travel for work.

In relationships with two academic scientists, the partners reinforced each other's behavior with regards to working long hours, because they both "understood" that long hours were necessary to be successful scientists. As a result, they both came to accept long hours and demanding travel schedules more than they might if they were partnered to someone with different professional demands. One woman said that, for the most part, she and her husband did not work outside of regular business hours. The two women whose husbands had 9-to-5 jobs also tried to limit their hours. By working together to contain the number of hours that they work, couples may be able to better combat issues related to the demands of their careers.

Another woman talked about the extent to which she valued the fact that her partner understood that she was an intelligent woman. Because of this, she did not feel a need to change her behavior when she was around him. The way that the women talked about their partners as understanding speaks to the extent to which their partners both accepted them for who they are and provided them with a support network.

The ways that the women described their scientist partners' informed understanding raises some questions about the experiences that women scientists partnered to non-scientists have in their relationships. It may be that women scientists partnered to non-scientists spend at least some time educating their partners about scientific topics or at least trying to explain the demands of an academic career in science.

Regardless of the fact that most of the women in my study described their partners as understanding, their professional demands led to stress in their personal lives. The women described four main ways that this happened: (1) science was too large of an aspect of their lives, (2) they felt competitive with their partners, (3) they lived apart from their partners and (4) their careers demanded too much of their time and energy. The all-encompassing nature of science, especially when combined with having an academic partner, meant that the women's lives narrowly focused on science with regards to family activities and conversations. Science naturally played a role in their personal lives because it was an interest that they shared with their partners. Some of the women enjoyed the fact that science played such a large role in their lives, but many others described this as problematic.

The science professions are highly competitive. Despite this, the majority of the women that I talked to did not express concern over the role of competition in their relationships. Those who did express concerns about competition talked about competition in two different arenas. One woman talked about competing with her partner to be a better scientist and another mentioned competing with her partner about who was more knowledgeable. Others talked about competing at a departmental level for positions in their department or with regards to raises.

About a quarter of the women described times when they lived in different geographic locations from their partners. All of these women acknowledged that living apart was difficult, but one woman also noted that it allowed her to be particularly focused on her work both while she was finishing graduate school and in

the early stages of her career. She felt that one of the reasons she and her partner were ultimately able to find positions in the same city was because they had spent this time apart developing their own research. In other words, despite women's trepidation about living apart from their partners and the difficulties that it presents, living apart from a partner might actually help scientists in some ways.

The majority of the women that I talked to had children or planned to have children. Only two women had chosen not to have children. One of these women said that she and her partner made their decision based on a concern about the environment and overpopulation. A few of the women with children noted that they had difficulty finding the right time to have children because of the demands of their academic positions or their need to maintain grant funding. The women said that having children affected their ability to travel to conferences and to do fieldwork. Many of the women also reported fewer hours for work and leisure after having their children. Indeed, this is consistent with findings that one's personal life can influence their academic career (Nerad, Rudd, Morrison, & Picciano, 2007). Children affect women in non-science professions in similar manners (Orenstein, 2001). Nonetheless, the women benefited from having children because it broadened their personal lives and increased their self-esteem. After having children, some women formed friendships with the nonscientist parents of their children's friends or found that their conversations at home were more varied.

Finally, many of the women that I interviewed reported that their interest in science affected their friendships. Almost all of the women had at least some scientist

friends. The women reported that their demanding careers meant that they formed friendships with other scientists for some of the same reasons that they formed romantic relationships with other scientists: because they spend significant amounts of time with their coworkers, because they have little time to make friends elsewhere, and because they enjoy spending time with people who understand them. The fact that the women report having little time to meet friends and partners outside of science is in line with Hochschild's (1997) assertion that people have little time for leisure. A few of the women described departmental functions as serving a prominent role in their social lives. If the women had non-scientist friends they were either the parents of their children's friends, neighbors, people they met through hobbies, or friends they made before they were scientists.

Women Scientists' Relationships' Influence on Their Professional Lives

The women talked about five different manners in which their relationships affected their professional lives in ways related both to the structure of science and the content of science. First of all, being partnered to another academic scientist affected the women's job searches throughout their careers. Secondly, being partnered to another scientist affected their ability to attend conferences and travel for fieldwork. Because the women were partnered to other academic scientists, they collaborated both formally and informally with their partners. The women also reported that their partners helped them to become better socially integrated into professional and

departmental circles. Finally, being partnered to another academic scientist meant that the women's professional identities were tied to those of their partners.

The women I interviewed talked about difficulties they had with the job search. This is consistent with the research that shows that women scientists are concerned about the two-body problem (Ivie, Czujko, & Stowe, 2001). Only the older women in the study worked for decades on soft money, or directly battled anti-nepotism rules, or faced departments that made blatantly uneven offers to husbands and wives. It is likely that the younger women have been more likely to benefit from policies designed to recruit dual career couples. The issues related to the job search for dual-career couples have changed over time as university policies have been developed to address these issues.

The improvement of conditions for academic couples does not mean that the younger women have not faced difficulties related to the job search. For example, one woman applied for a job and was not even considered because the search committee was waiting for an application from her husband. At times, the younger women found that offers they received as a couple offered one partner a lower level position than they might have received had they applied separately or they found themselves living apart from their partner for extended periods before two positions became available in same locale. For many of the women, problems arose because they and their partners were at different points in their career trajectories such as when one partner made a transition to a postdoc while the other partner finished graduate school.

Unlike Sara Majetich, who was profiled in *No Universal Constants*, and her husband who have lived apart for twenty years (Ambrose et al., 1997), all of the women in my study found positions in the same locations as their partners after relatively short periods of time living apart. The longest time that any of the women in my study spent apart from her partner was five years. Compromise was the key to finding two positions in the same location. Most of the compromises the women talked about dealt with where they lived: being willing to move for partners or being willing to live away from their families of origin. Indeed, compromise about where they live is important for academic couples because of the ways that academic careers require geographic mobility (Kulis & Sicotte, 2002; Rosenfeld & Jones, 1987). Women also made other sorts of compromises as well. One woman and her partner compromised about the types of positions that they took in order to live near family.

The only women who did not express concerns about the job search were those in relationships where one partner did not have a research-based career or those whose relationships formed after they had established their careers. Indeed, a later forming relationship allows one to escape the "two-body problem" (Fort, 2005). Although almost all of the women I interviewed were in positions commensurate with their skills and education, many of them felt fortunate that they were able to find such positions. This speaks to the extent to which scientists have accepted that the job search situation is very difficulty for dual career couples in science and engineering fields.

In order to find positions in the same geographic area, the women and their partners had to endure some problematic situations. Some of the women described problems that they had encountered when either they or their partners were "trailing" spouses. At times, trailing spouses were accepted into departments and other times they were not. Other women have had problems when they supported themselves on grant money rather than securing a permanent position. It is not uncommon for academics to spend time in temporary positions before they find secure positions (Nerad, Rudd, Morisson, & Picciano, 2007).

Women in my study found that supporting themselves on grants at the beginning of their careers created a lack of stability and made it difficult to find time to start a family. Others have noted that women scientists tend to delay pregnancy until they find a stable academic job (Grant, Kennelly, & Ward, 2000). Situations like these may be one of the reasons that women scientists say that balancing career and family is one of their most significant challenges (Rosser, 2004; Sears, 2003). One woman, however, ended up supporting herself on grant money after her husband's career needs dictated a move. Because she had not had problems finding funding, she did not find supporting herself on grants to be problematic. Indeed, rather than creating problems, it allowed her the flexibility to find a position in the same city that her husband moved to for work. In other words, although there are problems inherent in grant funded positions, these positions also have benefits for some women.

Women's relationships also affect their professional lives during other transitions over the course of their careers including graduate school choices and

retirement decisions. Women's relationships also played a role in mid-career transitions; about a third of the couples had used an outside offer to switch jobs or to improve their positions at their home institutions. These offers included positions for both members of the couple regardless of which partner was more prominent. Although at the beginning of their careers, it was hard for the couples to find jobs together, once couples were more established it strengthened their ability to find positions together or to negotiate with their own universities. Several women speculated that their relationship might have affected the tenure process. Some of the women noted that their departments may have given thought to the notion that denying tenure to one partner in a couple would likely lead to both partners leaving an institution.

The women's relationships also affected the day-to-day aspects of their professional lives like their travel schedules and their fieldwork. Many of the women described their busy travel schedules and how these schedules often prevented them from spending time with their partners and children. Some of the women also noted that because both they and their partners traveled, they had to coordinate their travel schedules. The majority of the women did not travel to conferences and meetings with their partners. Most of the women reported being more likely to attend smaller meetings that were not necessarily of interest to their partners because of the differences between the women's research interests and their partners'. Some of the women noted that their partners' travel schedules influenced their own schedules but other women said that they did not choose which meetings to attend based on where

their partners traveled. When women did choose to travel with their partners, it introduced an added complication with regards to childcare. As Perricone (2007) points out, problems with childcare affect all women, but for women scientists the issues can be more complicated. A few women had curtailed the amount of fieldwork they did after having children. One woman said that when her husband travels for fieldwork she is like a "single mom." This supports Crane's (2003) suggestion that a romantic relationship complicates a scientist's ability to do fieldwork.

Over half of the women talked about formally collaborating with their partners on research projects and others talked about the possibility of collaborating with their partners on future projects. The tendency for women scientists partnered with other scientists to collaborate with their partners has been documented (Bellas, 1997; Creamer, 1999; Ferber, 2003). Some of the women had ongoing collaborations with their partners, whereas others had only collaborated once. Only one woman said that she had difficulties collaborating with her partner; the other women seemed to enjoy it. Those who had not collaborated with their partners said that had not done so because they had not been able to fit it into their schedules, because their research interests were too disparate from their partners', or because of a concern about keeping separation from their partners in their professional lives. Despite research that indicates that women's collaboration with their spouses is often devalued (Reskin, 1978), the women who collaborated with their partners did not indicated that this was the case. As a matter of fact, even though the women talked about their partners' intelligence and the importance that played in their attraction, in my readings of the

women's statements, their significance in their field seems to be about equal to that of their partners.

Although not all of the women formally collaborated with their partners, they all described ways in which they informally collaborated with their partners. Almost half of the women talked about ways that their partners served as resources for them by having an area of expertise different from their own. Some women described their partners as not just filling gaps in their knowledge but also as causing shifts in the way they think after exposing them to different research fields. Another way that women described informal collaborations with their partners was through reading each other's work and offering each other different perspectives on issues. Women also worked with their partners in other ways: a couple of women talked about working together with their partners to advise students while others mentioned taking over classes for each other or attending department meetings together.

Not unlike the women profiled in biographies of women scientists (Ambrose et al., 1997; Hatch, 2006), many of the women described ways in which mentoring occurred within their relationships. One of the ways that women's partners served as mentors was by being able to understand events in their professional lives and helping them to navigate these issues. Many of the women described a sort of peer mentoring in their relationships where both partners mentored each other. One woman, meanwhile, reported mentoring her less-senior husband and three of the women described being mentored by their more senior partners. A mentoring relationship with a partner might increase the women's chances for success in their profession.

Earlier research showed that women art historians with academic spouses are more likely to receive tenure than those with spouses in business, government, or non-profit sectors (Sadrozinski, Nerad, & Cerny, 2003).

Social integration within the scientific community is important in scientists' careers (Eisenhart & Finkel, 1998; Etzkowitz, Kemelgor, & Uzzi, 2000; Lovitts, 2001). All of the women talked about ways that their partners had helped them to become better integrated socially, particularly by helping them to network. As noted by Astin and Milem (1997) and Tang (2006), many women reported that being partnered to another scientist increased the size of their networks. Their relationships helped the women with networking not only because their partners introduced them to people but also because their relationships gave them an "in" with certain individuals. Almost half of the women noted that their partners helped them to make contacts outside of their own research fields. A couple of women reported ways that being partnered to someone in their own department had increased their attendance at departmental events. Only one woman reported that her relationship with her partner made her less well integrated into her department. She said that because her partner was more prominent, colleagues were more likely to seek him out than her. It might be that scientists whose partners are more prominent do not benefit with regards to social integration in the same ways that other scientists do.

A few of the women remarked that their professional identity was tied to that of their partners and that their relationship affected how people treated them within professional settings. A few of the women said that they and their partners were

known as a couple within their fields. Although Ferber (2003) suggests that women, especially those with senior partners, are likely to be seen as riding their partners' coattails, only one woman implied that people saw her as less competent than they would if her partner was not a scientist. In contrast, another woman was more concerned about her husband being able to keep his own identity. Furthermore, several of the women said that having their professional identities linked to their partners' benefited them because it helped them to network or gain credibility.

Four of the women did describe ways that they had been treated differently because they were known as a couple. This included how people saw them during the hiring process and when raises were given as well as with regards to office space. One woman thought that colleagues might worry that she and her husband were a voting block within the department. Similarly, Robin Wilson (2001) describes a backlash against academic couples in the same department because it creates a "buddy system that disrupts the university's "meritocracy." These sorts of identity issues, however, only affected women who worked in either the same field or the same department as their partners. Women in both a different field and a different department did not express these concerns.

Science as a Lifestyle

Elizabeth Creamer (2001) argues that the boundaries between one's personal and professional lives are artificial. As a result of the ways that their interest in science affected their personal lives and the ways that their personal relationships with

scientists affected their professional lives, many of the women described blurred boundaries between their personal and professional lives. Indeed, for the women whom I interviewed, science was not merely their profession but was a part of their lifestyle. I found three ways that the women described science as a sort of lifestyle: (1) the ways that the women talk about science as a way of life rather than their profession, (2) the ways that they use science at home, and (3) their concerns about achieving work/life balance.

The women frequently described science as being a way of life rather than just their profession. Creamer (2001) suggests that collaboration can become a way of life for scientist couples by blending together their personal and professional lives. Many of the women interviewed here described their interest in science as being a way of life for them and their partners. Indeed, a couple of women described their passion for science as one of the reasons that they partnered with another scientist. The majority of the women described their passion for their work in some way during their interviews. Only one woman described her partner, an engineer with a bachelor's degree, as being less passionate about his career than she was. Because he was the one individual among all of the women and their partners without a research-based career, this may point to a difference between scientists with research-oriented careers and those with non-research-oriented careers.

Not only did the women talk about science as being something that they were passionate about, but they also described science as something that guided them in multiple aspects of their lives. They described themselves as being people who

"thought like scientists." A couple of the women also noted that they especially valued that their partners "thought like scientists" as well. Several of the women described ways that they used science in other areas of their lives from legal documents to cooking dinner. Other women matter-of-factly described fieldwork as a part of their families' lives. The extent to which science guided the women's thought patterns and became a part of their lives is indicative of their passion for science. Because these women are partnered to other scientists, they may be more likely to have this sort of relationship with science than scientists who are partnered to non-scientists. Alternatively, these women may have sought out relationships scientists because of the extent to which they have a passion for and their thoughts are guided by science.

Another way that science became a lifestyle for the women was through the extent to which they engaged in science-related activities at home. Every woman described some way that she and her partner used science in their home lives. All of the women said they talked about science at home, some of the women had science-related hobbies or interests, and others engaged in science-related activities with their children.

One of the ways that science became a part of women's home lives was by talking about science at home. All of the women reported talking about science with their partners. This is not unlike Maria Goeppert-Mayer and her husband who enjoyed talking about science (Dash, 1973). The conversations that the women had with their partners touched on both the content of science and the politics of science. Two thirds

of the women described science-related hobbies or activities in which they took part. The most common science-related activity that the women discussed was a concern for the environment. Similarly, many women described ways that they had exposed or planned to expose their children to science. Some women described other ways that they used science at home, ranging from watching their children's development with interest to using engineering knowledge to fix things.

Although all of the women described ways that science played a role in their home life, some of the women tried to limit the role of science in their personal lives. A third of the women, for example, described non-science related activities and hobbies in which they and their partners engaged. Other women described trying to limit the amount of science in their personal lives in order to lead more balanced lives. One woman was concerned about exposing her children to non-science related topics and another said she liked to go to art museums. Several of the women described their partners as more interested in science than they are and more interested in pursuing science-related activities at home. This is interesting given that research indicates that at least among children, females tend to engage in more categories of activities than males (Jacobs, Vernon, & Eccles, 2005). Furthermore, these women are not the first scientists to have non-science interests: Marie Curie liked to bicycle and Albert Einstein played the violin (Hall, 2007).

Finally, the women also described balancing their personal lives and their professional lives as part of their lifestyle. Indeed, this was problematic for the women and, for at least one woman, these problems were severe enough to cause

some health issues. The women talked about the demands of their jobs, the narrowness of their lives, difficulties finding time to spend with their families, and strategies they used to address these issues of balance. One woman described a tension between wanting to spend time with her children while she was at work and thinking about her work when she was at home. Just over a third of the women talked about the extent to which their positions required them to spend long hours working. Women said that these demands made it hard to find time for other activities whether it be taking out the trash or giving birth. The women whose partners did not work in academic settings said that their partners were better able to confine their work to traditional work hours than they were.

Many of the women commented that working long hours coupled with having a scientist-partner made their lives narrowly focused on science. For some of the women, this was a problem and they craved more outlets. Other women were not as bothered with it. Yet other women felt conflicted about this as an issue. One woman, for example, at one point during her interview remarked that she was happy to be working with the intensity of a graduate student again once her children were raised, but then later said that she would have liked more breadth in her life, especially with respect to friendships. Just as women viewed the amount of science in their personal lives differently, they expressed different opinions about the narrowness of their lives.

Literature shows that many women scientists are concerned about balance (Jacobs, 2004; Rosser, 2004; Sears, 2003) and that science tends to be a "greedy institution" taking as much time as the scientist will give (Grant, Kennelly, & Ward,

2000). Indeed, one study of social scientists found "careers limited family life and family lives limited careers" (Nerad, Rudd, Morrison, & Picciano, 2007, 14). The term balance can evoke the image of a seesaw wherein at times, a woman's life is more focused on her home life and at times her life is more focused on her professional life. For the most part, when the women I interviewed talked about balance, they talked about ways that their professional lives intruded into their personal lives. Occasionally, however, the women mentioned ways that the demands of their personal lives affected their professional lives such as the woman who compromised with regards to her job in order to live near family. In other words, with regards to work/life balance seesaw, their lives lean towards the work side. This is often the way that the literature tends to talk about balance. Many of the women expressed frustration that the demands of their careers meant that they had little time to spend with their families. Some of the women talked about feeling as though they did not have enough time to spend with their children. Others, whose children are older, talked about not having enough time for their relationships with their partners.

Some women talked about trying to alleviate the issue of balance by creating greater separation between their personal and professional lives. Women in the past also created this sort of separation. Agnes Fay Morgan, for example, "solved the problem of combining her private life as wife and mother with her public life as scientist and department chair" by hiding her pregnancy from others in her department (Nerad, 1999, 77). Other women hired individuals to help with childcare or house

cleaning. At least a third of the women talked about ways that they used the sorts of flexibility that exists in an academic schedule to alleviate their issues with balance.

For some of the women, their issues with balance are compounded by the extent to which they faced demands at home and from their careers. As a matter of fact, some of the women in my study said that they did more childcare and housework than their partners, both aspects of the stereotypically feminine gender role. This supports Rubin's (1983) assertion that men identify themselves with their careers whereas women identify themselves by both their careers and their home lives. This means that women might be more likely to view balance as a problem than their partners who are less invested in home life and participate in less childcare and housework. These issues of balance are not unique to women scientists or even to women scientists partnered to other scientists but the demands of these women's careers combined with the demands of their partners' careers may intensify the issue of balance for them.

Implications of the Project

The research reported here has given us new, more nuanced information about women scientists and their relationships with other scientists. Previous research on academic couples focused on how to achieve and sustain two successful careers (Sweet & Moen, 2004) and little is known about how PhDs in general "integrate their career with their personal life and family" (Nerad, Rudd, Morrison, & Picciano, 2007, 7). This work adds an important contribution by compiling a comprehensive literature

review on the subject, by using Census data to explore which women scientists are more likely to partner with scientists, by asking questions about how these relationships form and how these relationships affect women's personal and professional lives. There are four themes that emerged from this research: the ways that women benefit from these relationships, the problems that their jobs create with respect to balance, the extent to which the women try to create separation between their personal and professional lives, and the role of compromise in scientist couples' lives. In addition, throughout the work it is evident that there are both differences among the women and similarities between these women and other groups.

The women talked about several ways that they benefited from their relationships. As a matter of fact, when I asked women at the end of their interviews what they liked and disliked about their relationships, all of the women mentioned aspects of their relationships that they liked, but several did not mention any aspects that they disliked. On a personal level, the women benefited from their relationships through having a partner who not only understood their interests but also with whom they were able to share their scientific interests. Women benefited on a professional level through both formal and informal collaborations with their partners and with regards to mentoring and social integration. Arguably, the women also benefited professionally from having a partner who understood the demands of their careers. Despite the commonly held assumption that relationships with other scientists are problematic because of the two-body problem, women do report benefits from these relationships. Indeed, the fact that the majority of the women in my study had been

able to secure appropriate positions in the same geographic location as their partners may indicate as a result of the policies to help dual career academic couples, some women benefit from relationships with other academic scientists. In the future, these benefits, including the impact of policies on couples' ability to resolve of the two-body problem, should be explored more systematically. Such research has important implications for the research on women in science because it could change perceptions of the impact of the two-body problem and enrich our understanding of women in science.

One way that balance creates a problem for these women is with regards to the lack of time they have outside of work. Two women noted that the academic system requires such a time commitment because the system was set up for and by men who had wives at home. Indeed, according to Hochschild (1974), a university career depends upon the type of support that a husband stereotypically receives from his wife. As a result, female academic scientists like those in my study, as well as male and female academics more generally, have a difficult time balancing their personal and professional lives. The women in this study noted that this makes it difficult to find time to spend with their children or even to do small things like take out the trash. It also means that it is more difficult for them to participate in activities that are part of an academic career, such as traveling to conferences. The demands of academic careers with respect to the difficulties that they create in terms of work/life balance is a significant problem that needs to be addressed in order to make academic careers more appealing.

The issue of balance also arises with regards to the division of labor within the women's homes. Overall, the majority of the women described their partners as men who helped raise the children and take care of their homes. None of the women indicated that their partners failed to help out at home. Nonetheless, some of the women made comments suggesting that they did more of the stereotypically female tasks than their partners did. For example, women said that they did more chores around the house, took off work to take the children to doctor appointments, or were less likely to travel on account on the children. This indicates that the women and their partners fall to some extent into stereotypical gender roles. If the women are the ones who are more likely to make the time for these tasks while facing pressures at least equal to those faced by their partners at work, it places even greater demands on their time. As a result, it might serve to increase their stress levels, create health problems, and make finding balance a larger problem. This also points to the ways that these relationships may affect men and women differently.

Another context in which the theme of balance arose over the course of the interviews was the extent to which academic scientists find their work to be demanding yet flexible. The women noted that their jobs require them to work long hours and that it is not uncommon for them to work on evenings or weekends. In any case, their jobs are also flexible with regards to the times of day that they work or where they do their work. Indeed the flexibility is a major benefit for these women and they use it for a strategy to address issues with work/life balance. Indeed, Arlie Hochschild (1997) argues that flexible careers are important in terms of helping

individuals create balance between their work and home lives. One of the reasons that one of the women in my study and her partner stayed in academic careers was because of the flexibility that academic careers offer. She noted that she liked to pick up her children after school. Although an academic career allows one to choose which hours to work, it does not allow one to choose how many hours to work. As a result, flexibility in academic careers is limited. It would be particularly interesting to explore this notion of flexible jobs further and other ways that the women use flexibility as a strategy for coping with problems related to work/life balance.

The final context in which the issue of balance arose was with regards to the role of the women's career in both their romantic relationships and in their friendships. When talking both about why women scientists are partnered with other scientists and talking about their own relationships and friendships, the women talked about the ways in which the demands of their careers limited their time to meet individuals outside of their professional lives. As a result, they not only partnered with other scientists, but many of their friends were scientists as well. Work/life balance was a significant problem for the women in my study and impacted various arenas of their lives. This suggests the importance of continuing to research these issues and develop policies that can help to relieve these problems.

Another theme that arose in the interviews was that of separation. One way the theme of separation arose was the extent to which some of the women tried to create separation from their partners in their professional lives. Doing this helped the women to create their own professional identity. Many of the women who worked in the same

departments as their partners were quick to argue that their research was very different from their partners. In the course of the study, however, this theme arose in many ways. Among the ways that the women created separation between themselves and their partners in their professional lives was by keeping their graduate students separate in order to improve their cases for tenure, choosing not to collaborate with their partners, not traveling with their partners, or keeping their maiden names. Other women tried to separate their personal life from their professional life. For example, some of the women talked about limiting the extent to which they talk about work or science more generally at home or trying to limit their work time to a more traditional workweek. In this way, separation became a way to cope with problems related to issues of work/life balance.

Both of these sorts of separation, creating separation from their partner in their professional lives and creating separation between their personal and professional lives, served to create division between their personal and professional lives. In the first sort of separation, the women's actions aim to ensure that their professional life is not impacted by their personal life. In other words, the women are trying to ensure that they are able to develop their own reputation in their fields or ensure that sharing graduate students with their partners does not create difficulty with regards to tenure. This also is a way to ensure that they, rather than their husbands, receive credit for the work that they have done. In the second sort of separation, the women's actions aim to ensure that their professional life does not bleed into their personal life.

Throughout the study the women talked about various forms of compromise. Compromise was an effective strategy that the women used to navigate the job search as well as find balance in their daily lives. The women talked about several compromises with regard to their professional lives. For example, women said that in order to have jobs in the same geographic area as their partner they had compromised with regard to the sort of position that they took or where they lived. Women also made compromises with regards to their travel schedules and their fieldwork. One woman and her partner, for example, agreed to split their sabbatical so they could spend it together and visit both of their field sites. Women also compromised about work in order to spend time with or care for their children. Although some women said that they were more willing to compromise about conferences to take care of their children than their partners were, the women were not the only compromisers. Although perhaps less often, their partners also made compromises about where they lived or the sorts of positions they accepted.

Some of the issues discussed over the course of this project affected couples in which both partners worked in academic or research settings differently than those in which only one member worked in such a setting. For example, the two women whose households had a member with a non-research based career were among the few women who did not mention problems with regards to the job search. Furthermore, the two women who had partners who worked 9-to-5 jobs both said that their partner's shorter hours encouraged them to work shorter hours as well. Finally, one woman's partner, an engineer with a bachelor's degree, was less understanding of

her work and its demands than the other women's partners. Her partner also seemed to be less committed to and passionate about his work. These findings suggest that the issues that women in academic scientist careers partnered to other academic scientists face may be different than those that occur among other scientist couples. These differences should be explored further in the future.

Finally, it may be that some issues talked about in this research are not unique to either scientists or to academics. For example, many of the women talked about the problems that their travel schedules create. Clearly, this issue is likely to affect both academics in other fields as well as high-level professionals outside of academia as these groups are also likely to travel a significant amount. Women in such positions are likely to face the same issues with regards to demanding jobs and balancing their personal and professional lives.

Limitations

There are always many ways in which a research project could be improved. This study is no exception. The sample of women interviewed for this work lacked diversity across some characteristics. The women interviewed covered a variety of ages, disciplines, and countries of origin. But the group did not include any women of color or women in same sex relationships. Analysis of the Census data showed that women of color partner with other academic scientists at rates similar to those of white women. As such, scientists of color would have been as likely to qualify for inclusion in this research as white scientists. Unfortunately, the absolute numbers of women of

color in science (whether across the US or in this specific geographic locale) are low, making the likelihood that a member of this category would volunteer to be part of this project low. The Census analysis also suggested that very few women scientists in same sex relationships are partnered with other academic scientists eliminating many lesbian scientists from inclusion in this study. It would be interesting to learn about these women's perspective on relationships with other scientists.

On the other hand, because of the small number of women scientists in these groups, if I had interviewed these women it would have added complexity to my study with regards to confidentiality. Although it is important to study women of color, the small number of them in the science and engineering workforce (Nelson & Rogers, 2004) makes them particularly identifiable (Ginorio, 2005). Nonetheless, this is an issue that should be addressed in future research on these issues.

The women interviewed for this work tended to be positive about their relationships with other scientists and engineers and overlooked the negative aspects of these relationships. This may be because women scientists partnered with scientists, as a group, are in highly positive interpersonal relationships. Or it could be that women who are unhappy in their relationship did not volunteer to take part in this work or did not share these sorts of feelings with me. Thus, it is possible that the current results might express an overly positive view of women's relationships with other scientists. Not only might the sample be biased toward women who are overall happy in their relationships, but also the women who did take part may have chosen to reveal only more positive aspects of their relationships. Studies conducted in a more

impersonal fashion (e.g., questionnaire studies as opposed to face-to-face interviews) and studies using larger, less personally identifiable samples might be better at uncovering negative outcomes that result when women scientists partner with other scientists.

Furthermore, it should also be noted that I was only able to interview women who stayed in their science careers *and* in their relationships. As a result, I may have been less likely to talk to women who suffered from fewer problems due to these relationships. Women who had encountered more significant problems due to competition or related to the job search than the women in my study would have been more likely to either end their relationships or to leave academic careers. Because I limited my sample to women currently partnered to another academic scientist and working in an academic science career, I was unable to capture women who had left due to either of these situations.

One woman commented about how it was hard for her to reflect on how her life might have been different if she were not partnered to another scientist. As a result, she had a hard time answering questions about how her partner's occupation affected her relationship. Indeed these sorts of questions can be difficult to answer and there may be better ways to address them in the future. Both of these issues mean that there are ways in which my research may not accurately reflect the experiences of all women in science.

I noted previously that the interviews took place in multiple locations. Most of the interviews were completed in women's offices, but I interviewed four women in

conference rooms and one woman in a coffee shop. On average the women who were interviewed in their offices did not talk as long as the women interviewed elsewhere. My original intention in offering to meet women in their offices was to create fewer barriers to participation in my study. However, the women who met me at other places may have been willing to talk longer because they had already made a greater investment of time. Furthermore, the women who I interviewed in their offices were surrounded by their research, a fact that might have made them feel eager to complete the interview in order to get back to work.

Future Directions for Research

Many questions about the lives and careers of women scientists and engineers partnered to other scientists and engineers remain. This research could be extended with regards to both the quantitative and the qualitative components of the work. First of all, both parts of the study could be done with male scientists married or partnered to other scientists in order to determine whether men's experiences with relationships with scientists are similar to women's relationships. Even though a lower proportion of male scientists partner with other scientists, research on the extent to which they benefit from or suffer from these relationships would enhance our knowledge of work/life balance and family issues and would be an interesting comparison to my research on women.

There are several ways that the quantitative component of this research could be expanded. First of all, the analysis of Census data could be expanded to include

women scientists and engineers in general rather than focusing on academic scientists and engineers and by looking at multiple years of data. This could answer questions about which industries have more or fewer scientists partnered to other scientists and questions about the extent to which the proportion of women scientists and engineers partnered to other scientists and engineers has changed over time.

There are some problems, however, with the Census data. As noted previously, among women in colleges and universities, academic scientists and engineers could have been either coded as working within their field of study or as an instructor. Furthermore, Census data makes it impossible to obtain information about the spouses of married individuals living apart from their partners. As a result, in the future, this study could be repeated using NSF's SDR data in order to verify the findings from the Census data. Although the SDR only has information about whether partners' jobs require at least a bachelor's degree in science or engineering, the SDR identifies scientists and engineers better than the Census data. Furthermore the SDR includes questions specific to a scientists' career such as primary work activity (e.g., teaching, basic research, etc.) and satisfaction and importance of various aspects of job that are not included in the Census data.

In the future, I would also like to expand the group of women that I interviewed. I would especially like to interview more women with an eye toward recruiting more diversity in the group with regards to race and ethnicity as well as same sex relationships. Interviewing additional women would clarify the results that I am presenting here as well as present an opportunity to expand upon them.

I would like to further explore the extent to which women feel they have been helped by policies developed to alleviate the two-body problem and the role of outside offers in their career trajectory. I would also ask them about the extent to which they feel the two-body problem has worked out for them. In other words, do they feel satisfied with the positions that they were in, how long did that take to happen, and what sorts of compromises do they feel that they made.

Finally, this research could also be extended with a quantitative survey. With the information gained from the interviews, a survey could be developed that addresses issues surrounding the personal and professional lives of women scientists and engineers. Such a survey could be widely distributed electronically and would allow for the collection of information from a larger group of women.

Recommendations and Conclusion

Partnering with an academic scientist introduces complications to a woman academic scientist's career. The main complication is the so-called two-body problem, i.e., the problem of finding two academic jobs in the same geographic location. This work, however, suggests that not only do many women resolve the two-body problem, but that they benefit in multiple ways from their relationship with another scientist. On a personal level, these relationships provide them with someone who shares their passion for science and understands the demands of their career. On a professional level, they find someone who can extend their professional networks and serve as a peer mentor. Indeed, even though the experiences of the women in my

study indicate that they benefited in many ways from their relationships with other scientists, they seemed to lose sight of the ways that they have benefited from partnering with a scientist and instead concentrated on the fact that they were fortunate to be working in the same location as their partners.

This research addressed the questions that I posed in Chapter 2: Methods. My findings include:

- Among partnered women scientists, non-US citizens are more likely to partner with other scientists than US-born citizens. I also found that women in the life sciences and physical sciences were more likely to partner with other scientists than women in other science fields.
- Women scientists form relationships with other scientists because of the amount of time that they spend around scientists, because they are attracted to scientists' passion for science, and because they feel understood by other scientists.
- The primary impact that these relationships have on women's professional lives is by complicating the job search process. Women also tend to collaborate with their partners, form mentoring relationships with their partners, find greater social integration, and have a combined professional identity with their partners.
- These relationships impact women's personal lives through the demands they place on the women's time, thereby creating problems with balance. Women

also report that science becomes a part of their home life, but at times they feel as though science plays too large of a role in their lives.

- These relationships also speak to how science is practiced in several ways. These relationships highlight the demands that an academic science career places on women and how this is amplified if their husband also has a demanding career. It also sheds light on the importance of relationships overall. It is possible that other women scientists can use friendships and networking to gain some of the same benefits that these women gained through their romantic relationships.
- Finally, this study highlights the ways in which science becomes a lifestyle for academic scientists partnered to other academic scientists. Some women like this and others find it to be problematic.

In order to help ease the anxiety that scientists feel about the two-body problem, the positive implications of relationships between scientists need to be emphasized. In addition to assuring women that the two-body problem is not an insurmountable issue, more positive messages could address ways that couples could be proactive in their job searches or compromises that couples might be prepared to make. Since beginning this project, I found that when I have told a group of scientists about my research, I am commonly asked whether I would dissuade women from pursuing relationships with scientists. Likewise, the women in my study who offered advice to women considering relationships with other scientists were careful to warn women about the problems these relationships present, but, in the context of offering

advice, they did not mention the ways they benefited from their relationships. In light of this, as well as my research findings, the message that these relationships have benefits needs to be disseminated.

Based on the Census data, several recommendations can be made with regard to dual career academic couples. Because women in metropolitan areas are more likely to be partnered to other academic scientists than women in non-metropolitan areas, this might be an indication that it is particularly important for academic institutions in non-metropolitan areas to implement policies that allow them to attract dual career couples. Doing so (and making sure that these policies are publicized) may help them to recruit more women scientists to their faculty. Secondly, it is particularly important for institutions to recognize that women who are non-US citizens are particularly likely to be affected by dual career issues. This needs to be taken into consideration when designing policies designed to assist dual academic career couples. Finally, these issues may be increasingly important in the coming years as a larger proportion of academic scientists are women. In the coming years, in order for institutions to attract new female PhDs in science and engineering fields, they may need to be particularly sensitive to dual career issues.

As noted previously, many universities within the US have developed policies that help dual career couples find appropriate employment together (Wolf-Wendel, Twombly & Rice, 2000). Given the problems that childcare presents for these couples, particularly with regards to attendances at professional conferences, universities and organizers of professional conferences could help dual career couples

in the sciences by addressing this issue as well. Although some larger conferences might offer childcare to attendees, smaller meetings are less likely to do this. The need for childcare is particularly important given that the women I interviewed indicated that they were more likely to attend these small meetings rather than the larger ones. This is particularly important because the women said that they were more likely than their partners to compromise and stay home from conferences on account of childcare. If childcare was taken care of, women might be more likely to travel. Emergency childcare for women to use when their other childcare arrangements fall through could also help these women. Institutions would benefit from both of these strategies because of the increased visibility or productivity that this would bring to their faculty.

The issues related to the job search for dual-career couples have changed over time as university policies have been developed to address these issues. Indeed, the experiences of the younger women in this sample coincide with major shifts in policies at universities with regard to dual career academic couples. Whereas the older women faced more problems obtaining positions at institutions that had decided to hire their partners, the younger women *and* their partners benefited from policies designed to recruit and retain academic couples. These policies acknowledge the prevalence of couples within the academic workforce and the importance of working with couples in order to recruit and retain faculty in general. Women who made mid-career transitions or who obtained more secure positions at their institutions also benefited from policies designed to recruit and retain couples. Indeed, when the

women talked about outside offers, they talked about receiving outside offers as a couple rather than as one partner or the other receiving an offer. The policies that women so desperately needed thirty or forty years ago when their husbands were able to more easily secure employment now benefit all scientists in relationships with other scientists. It is important that institutions continue to use these policies because of the ways that a significant portion of the academic workforce is able to benefit from them.

One issue that was apparent for the women in my study and that speaks to the issues that scientists and academics in general face is the ways in which their careers are "too big." This issue came up repeatedly when the women spoke about how balance and its effects are not minor. Not only do the women report that it affects minor tasks in their lives, but at least one of the women talked about ways that the stress in her job led to some health problems. This is an issue that affects scientists more broadly rather than just being an issue for women scientists partnered to other scientists. Furthermore, it speaks to a way in which science careers in general may need to be reformed. Of course, this sort of reform would require a cultural change that might be hard to make. Nonetheless, if science careers are unattractive because of the sorts of demands that they place on scientists, then it will be hard to recruit new scientists, particularly among individuals interested in having time for a life outside of science.

Repeatedly, the women I interviewed cited science as being a large part of their lives. Not only did they work long hours at their jobs but they recognized ways that science played a role in her home life as well. Some women liked this and others

felt that their lives were too narrowly focused. Although the women I interviewed did not marry science in the way that women who never married have at times become like "nuns of science," science became a large part of their lives. Because of this, marrying a scientist becomes another way of marrying science.

BIBLIOGRAPHY

Abkemeier, K. (2006). Job security. In Newitz, A. & Anders, C. (Eds.), *She's such a geek: Women write about science, technology, and other nerdy stuff* (122-134). Emeryville, CA: Seal Press.

Allan, G. (1980). A note on interviewing spouses together. *Journal of Marriage and the Family*, 42(1), 205-210.

Allen, A. (2005). The dual-career divorce. *The Chronicle of Higher Education*, 51(48), C2.

Ambrose, S. A., Dunkle, K. L., Lazarus, B. B., Nair, I., & Harkus, D. A. (1997). *Journeys of women in science and engineering: No universal constants*. Philadelphia: Temple University Press.

Ashcraft, C. & Breitzman, A. (2007). Who invents IT? An analysis of women's participation in information technology patenting. Retrieved October 6, 2007 from http://www.ncwit.org/pdf/Full_Patent_Report_wAppendix.pdf

Astin, H.S. & Milem, J.F. (1997). The status of academic couples in U.S. institutions. In M.A. Ferber & J.W. Loeb (Eds.), *Academic couples: Problems and promises* (128-155). Chicago: University of Illinois Press.

Bellas, M.L. (1997). The scholarly productivity of academic couples. In M.A. Ferber & J.W. Loeb (Eds.), *Academic couples: Problems and promises* (156-181). Chicago: University of Illinois Press.

Bernard, J. (1982). *The Future of Marriage* (2nd ed.). New Haven: Yale University Press.

Blackwell, Debra L. (1998). Marital homogamy in the United States: The influence of individual and paternal education. *Social Science Research*, 27, 159-188.

Blackwell, Debra L. & Lichter, Daniel T. (2000). Mate selection among married and cohabiting couples. *Journal of Family Issues*, 21(3), 275-302.

Boston Women's Health Book Collective. (1998). *Our bodies, ourselves for the new century: A book by and for women*. New York: Touchstone.

Bottorff, J.L., Kalaw, C., Johnson, J.L., Stewart, M., & Greaves, L. (2005). Tobacco use in intimate spaces: Issues in the study of couple dynamics. *Qualitative Health Research*, 15(4), 564-577.

Brainard, S.G. & Ailes-Sengers, L. (1994). Mentoring female engineering students: A model program at the University of Washington, *Journal of Women and Minorities in Science and Engineering,* 1(2): 123-135.

Brewer, J.D. (2000). *Ethnography.* Philadelphia: Open University Press.

Brown, S.V. (2000). The preparation of minorities for academic careers in science and engineering: How well are we doing? In Campbell, Jr., G., Denes, R., & Morrison, C. (Eds.), *Access denied: Race, ethnicity, and the scientific enterprise* (239-269). Oxford: The Oxford University Press.

Broverman, I.K., Vogel, S.R., Broverman, D.M., Clarkson, F.E., & Rosenkrantz, P.S. (1972). Sex-role stereotypes: A current appraisal. *Journal of Societal Issues*, 28(2), 59-78.

Brown, S.L. & Lewis, B.P. (2004). Relational dominance and mate-selection criteria: Evidence that males attend to female dominance. *Evolution and Human Behavior*, 25, 406-415.

Burt, S. & Code, L. (1995). Preface. In S. Burt & L. Code (Eds.), *Changing methods: Feminists transforming practice* (7-11). Ontario: Broadview Press.

Chadwick, W. & deCourtivron, I. (Eds.). (1993). *Significant others: Creativity and intimate partnership.* London: Thames and Hudson.

Collins, P.H. (1998). *Fighting words: Black women and the search for justice.* Minneapolis: University of Minnesota Press.

Collins, P.H. (2000). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment.* Second Edition. New York: Routledge.

Committee on Maximizing the Potential of Women in Academic Science and Engineering & Committee on Science, Engineering, and Public Policy. (2007). *Beyond bias and barriers fulfilling the potential of women in academic science and engineering.* Washington, D.C.: National Academies Press.

Conefrey, T. (2000). Laboratory talk and women's retention rates in science. *Journal of Women and Minorities in Science and Engineering*, 6(3), 251-264.

Coontz, S. (2005). *Marriage, a history: from obedience to intimacy or how love conquered marriage.* New York, Viking.

Crane, K. (2003). *Sea legs: Tales of a woman oceanographer.* Cambridge, MA: Westview Press.

Creamer, E.G. (1999). Knowledge production, publication productivity, and intimate academic partnerships. *Journal of Higher Education*, 70(3), 261-277.

Creamer, E.G. & Associates. (2001). *Working equal: Academic couples as collaborators*. New York: Routledgefalmer.

Curtin, J.M., Blake, G., & Cassagnau, C. (1997). The climate for women graduate students in physics. *Journal of Women and Minorities in Science and Engineering*, 3(1&2), 95-117.

Daniell, E. (2006). *Every other Thursday: Stories and strategies from successful women scientists*. New Haven: Yale University Press.

Dash, J. (1973). *A life of one's own: Three gifted women and the men they married.* New York: Harper & Row.

de Wet, C.B. & de Wet, A.P. (1997). Sharing academic careers: An alternative for pre-tenure and young family dual-career faculty couples. *Journal of Women and Minorities in Science and Engineering*, 3(3), 203-212.

Dudnik, N.S. (2006). Sex and the single (woman) biologist. In Newitz, A. & Anders, C. (Eds.), *She's such a geek: Women write about science, technology, and other nerdy stuff* (106-113). Emeryville, CA: Seal Press.

Eglash, R. (2002). Race, sex, and nerds: From black geeks to Asian American hipsters. *Social Text* 20(2), 49-64.

Eisenhart, M.A. & Finkel, E. (1998). *Women's science: Learning and succeeding from the margins*. Chicago: The University of Chicago Press.

Epstein, D. (2006). Sex and the single scientist. *Inside Higher Ed.* Retrieved February 21, 2006 from http://insidehighered.com/news/2006/02/16/science

Etzkowitz, H., Kemelgor, C., & Uzzi, B. (2000). *Athena unbound: The advancement of women in science and technology*. Cambridge: Cambridge University Press.

Fassinger, R.E., Scantlebury, K, & Richmond, G. (2004). Career, family, and institutional variables, in the work lives of academic women in the chemical sciences. *Journal of Women and Minorities in Science and Engineering*, 10(4), 297-316.

Ferber, M.A. (2003). Women's uneven progress in academia: Problems and solutions. In Hornig, L.S. (Ed). *Equal rites, unequal outcomes: Women in American research universities* (281-309). NY: Kluwer Academic/Plenum Publishers

Ferber, M. A., & Loeb, J. W. (Eds.). (1997). *Academic couples: Problems and promises*. Urbana: University of Illinois Press.

Ferreira, M.M. (2003). Gender differences in graduate students' perspectives on the culture of science. *Journal of Women and Minorities in Science and Engineering*, 9(2), 119-135.

Firlik, K. (2006). *Another day in the frontal lobe: A brain surgeon exposes life on the inside*. New York: Random House.

Fletcher, J. K. (1999). *Disappearing acts: Gender, power, and relational practice at work*. Cambridge, MA: The MIT Press.

Fort, D.C. (2005). *A hand up: Mentoring women in science*. Washington, DC: AWIS.

Fox, M.F. (2000). Organizational environments and doctoral degrees awarded to women in science and engineering. *Women's Studies Quarterly*, 28(1&2): 47-61.

Fox, M.F. (2003). *Georgia Tech ADVANCE survey of faculty perceptions, needs, and experiences*. Retrieved April 1, 2008 from http://www.advance.gatech.edu/ADVSURV_NSFREPORT.pdf

Fox, M.F. (2005). Gender, family characteristics, and publication productivity among scientists. *Social Studies of Science*, 35(1), 131-150.

Franks, S.E. (1998). One woman's life in science. In Pattatuci, A.M. (Ed.). *Women in science: Meeting career challenges* (116-135). Thousand Oaks, CA: Sage.

Franks, S.E. (2006). Suzy the Computer vs. Dr. Sexy. In Newitz, A. & Anders, C. (Eds.), *She's such a geek: Women write about science, technology, and other nerdy stuff* (82-95). Emeryville, CA: Seal Press.

Gabor, A. (1995). *Einstein's wife: Work and marriage in the lives of five great twentieth century women*. New York: Viking.

Gappa, J.M., Austin, A.E., & Trice, A.G. (2007). *Rethinking faculty work: Higher education's strategic imperative.* San Francisco: Jossey Bass.

Gibbons, A. (1992). Key issue: Two-career science marriage. *Science*, 255, 1380-1381.

Ginorio, A. B. (2001). Proud to be an oxymoron! From schizophrenic to (un)disciplined practice. In M. Mayberry, B. Subramaniam & L. H. Weasel (Eds.). *Feminist science studies: A new generation* (14-21). New York: Routledge

Ginorio, A.B. (2005, Jan). When N = 1-2: Justice, privacy and women of color in science and engineering. Women, Science & Technology Distinguished Lecture at Georgia Institute of Technology, Atlanta, GA.

Ginorio, A. B., Marshall, T., & Breckenridge, L. (2000). The feminist and the scientist: One and the same. *Women's Studies Quarterly*, 28 (1 & 2), 271-295.

Ginther, D.K. & Kahn, S. (2006). Does science promote women? Evidence from academia 1973-2001. NBER Working Paper No. W12691 Retrieved May 1, 2008 from: http://ssrn.com/abstract=944179

Glazer-Raymo, J. (1999). *Shattering the myths: Women in academe*. Baltimore: The Johns Hopkins University Press.

Goldman, B. (2006). In sickness and in health: Making marriage work at the job can be challenging for couples as well as colleagues. *The Scientist*, 20(9), 80-81.

Granovetter, M.S. (1973). The strength of weak ties. *The American Journal of Sociology*, 78(6), 1360-1380.

Grant, L., Kennelly, I., & Ward, K.B. (2000). Revisiting the gender, marriage, and parenthood puzzle in scientific careers. *Women's Studies Quarterly*, 28(1&2), 62-85.

Greaves, L. & Wylie, A. (1995). Women and violence: Feminist practice and quantitative method. In S. Burt & L. Code (Eds.), *Changing methods: Feminists transforming practice* (301-325). Ontario: Broadview Press.

Gusterson, H. (1996). *Nuclear rites: A weapons laboratory at the end of the Cold War*. Berkeley: University of California Press.

Hall, L.E. (2007). *Who's afraid of Marie Curie? The challenges facing women in science and technology*. Emeryville, CA: Seal Press.

Hammersley, M. & Atkinson, P. (1995). *Ethnography: Principles in practice*. New York: Routledge.

Hamon, R.R., & Ingoldsby, B.B. (Eds.). (2003). *Mate selection across cultures*. Thousand Oaks, CA: Sage.

Hanson, S.L. (1996). *Lost talent: Women in the sciences*. Philadelphia: Temple University Press.

Haraway, D.J. (1989). *Primate visions: Gender, race, and nature in the world of modern science*. New York: Routledge.

Haraway, D.J. (1997). *Modest_Witness@Second_Millenium.FemaleMan©_Meets_ OncoMouse™: Feminism and technoscience*. New York: Routledge.

Harding, S. (1991). *Whose science? Whose knowledge? Thinking from women's lives*. Ithaca, NY: Cornell University Press.

Harding, S. (1998). *Is science multicultural? Postcolonialisms, feminisms, and epistemologies*. Bloomington: Indiana University Press.

Hartsock, N.C.M. (1998). *The feminist standpoint revisited and other essays*. Boulder: Westview Press.

Hatch, S.E. (2006). *Changing our world: True stories of women engineers*. Reston, VA: ASCE.

Hertz, R. (1986). *More equal than others: Women and men in dual career marriages*. Berkeley: University of California Press.

Herzig, A.H. (2004). Becoming mathematicians: Women and students of color choosing and leaving doctoral mathematics. *Review of Educational Research*, 74(2), 171-214.

Heylin, M. (2001). Early careers: It's mostly good news from a poll that probes careers of ACS members under 40 years of age. *Chemical & Engineering News*, 79(52), 39-45.

Hochschild, A.R. (1974). Inside the clockwork of male careers. In Howe, F. (Ed.) *Women and the power to change* (47-80). New York: McGraw Hill.

Hochschild, A.R. (1997). *The time bind: When work becomes home and home becomes work*. New York, Metropolitan Books.

Hoffer, T.B. & Welch, V., Jr. (2006). Time to degree of U.S. research doctorate recipients. *InfoBrief*. Retrieved April 17, 2008 from http://www.nsf.gov/statistics/infbrief/nsf06312/nsf06312.pdf

Hoffmann, L. & DeSole, G. (Eds.) (1976). *Careers and couples: An academic question*. New York: Modern Language Association of America.

Hout, Michael. (1982). The association between husbands' and wives' occupations in two-earner families. *American Journal of Sociology*, 88, 397-409.

Hunt, Thomas C. (1940). Occupational status and marriage. *American Sociological Review*, 5, 495-504.

Ivie, R., Czujko, R., & Stowe, K. (2001). *Women physicists speak: The 2001 international study of women in physics*. AIP Statistical Research Center. From aip.org

Jacobs, J.A. (2004). The faculty time divide. *Sociological Forum*, 19(1), 3-27.

Jacobs, J.E., Vernon, M.K. & Eccles, J.S. (2005). Activity choices in middle childhood: The roles of gender, self-beliefs and parents' influence. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (235-254). Mahwah, NJ: Lawrence Erlbaum.

Jaschik, S. (2006 Apr 5). The Gen X professor. *Inside Higher Ed.* Retrieved April 5, 2006 from http://insidehighered.com/news/2006/04/05/genx

Jordan, D. (2006). *Sisters in science: Conversations with black women scientists on race, gender, and their passion for science.* West Lafayette, IN: Purdue University Press.

Kalmijn, M. (1991). Status homogamy in the United States. *American Journal of Sociology*, 97(2), 496-523.

Kalmun, M. (1991). Shifting boundaries: Trends in religious and educational homogamy. *American Sociological Review*, 56(6), 786-800.

Kane, C. (2005). Mother truckers: Tales of life in the driver's seat from some true queens of the road. *BUST*: Jun/July 2005, 72-77.

Kaufman, P.W. (2006). *National parks and the woman's voice: A history, update edition.* Albuquerque: University of New Mexico Press.

Keller, E.F. (1977). The anomaly of a woman in physics. In S. Ruddick & P. Daniels (Eds.), *Working it out: Twenty-three writers, artists, scientists, and scholars talk about their lives and work* (77-91). New York: Pantheon Books

Kohlstedt, S.G. (2004). Sustaining gains: Reflections on women in sciences and technology in 20th-century United States. *National Women's Studies Association Journal*, 16(1), 1-26.

Kubanek, A.M.W. & Waller, M. (1996). Women's confidence in science: Problematic notions around young women's career and life choices. *Journal of Women and Minorities in Science and Engineering*, 2(4), 243-253.

Kulis, S. & Sicotte, D. (2002). Women scientists in academia: Geographically constrained to big cities, college clusters, or the coasts? *Research in Higher Education*, 43, 1-30.

Lancaster, J. (2004). *Making time: Lillian Moller Gilbreth – A life beyond "Cheaper by the Dozen."* Boston: Northeastern University Press.

Laurence, L., & Weinhouse, B. (1994). *Outrageous practices: The alarming truth about how medicine mistreats women*. New York: Fawcett Columbine.

Levine, I.S. (16 May 2006). Scientific success: What's love got to do with it? Retrieved June 15, 2006 from http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/2006_05_26/scientific_success_what_s_love_got_to_do_with_it

Lobel, S.A., Quinn, R.E., St. Clair, L., & Warfield, A. (1994). Love without sex: The impact of psychological intimacy at work. *Organizational Dynamics*, 23(1), 15-16.

Loeb, J.W. (1997). Programs for academic partners: How well can they work? In M.A. Ferber & J.W. Loeb (Eds.), *Academic couples: Problems and promises* (270-298). Chicago: University of Illinois Press.

Long, J.S. (Ed.) (2001). *From scarcity to visibility: Gender differences in the careers of doctoral scientists and engineers*. Washington, DC: National Academy Press.

Lovitts, B. E. (2001). *Leaving the ivory tower: The causes and consequences of departure from doctoral study*. Lanham, MD: Rowan and Littlefield.

Mainiero, L.A. (1993). Dangerous liaisons? A review of current issues concerning male and female romantic relationships in the workplace. In E.A. Fagerson (Ed.), *Women in management: Trends, issues, and challenges in managerial diversity* (162-185). Newbury Park, CA: Sage.

Mare, R.D. (1991). Five decades of educational assertive mating. *American Sociological Review*, 56, 15-32.

Margolis, J., & Fisher, A. (2002). *Unlocking the clubhouse: Women in computing*. Cambridge, MA: The MIT Press.

Mason, M.A., & Goulden, M. (2004). Do babies matter (part II)? Closing the baby gap. *Academe*, 90(6), 10-15.

McGrayne, S.B. (1998). *Nobel Prize women in science: Their lives, struggles, and momentous discoveries*. Washington, DC: Joseph Henry Press.

McNeil, L. and Sher, M. (1998). *Dual-science-career couples: Survey results*. Retrieved January 6, 2007 from http://www.physics.wm.edu/~sher/survey.pdf

Mermin, D. (1984). The domestic economy of art: Elizabeth Barrett and Robert Browning. In Perry, R. & Brownley, M.W. (Eds.). *Mothering the mind: Twelve studies of writers and their silent partners* (82-101). New York: Holmes and Meier.

Merrick, E. (1999). "Like chewing on gravel": On the experience of analyzing qualitative research findings using a feminist epistemology. In E.B. Kimmel & M. Crawford (Eds.), *Innovations in feminist psychological research* (47-58). New York: University of Cambridge Press.

Messer-Davidow, E. (2002). *Disciplining feminism: From social activism to academic discourse*. Durham, NC: Duke University Press.

Messing, K. (1995). Don't use a wrench to peel potatoes: Biological science constructed on the male model systems is a risk to women workers' health. In S. Burt & L. Code (Eds.), *Changing methods: Feminists transforming practice* (217-263). Ontario: Broadview Press.

Miller, D.C. & Skeen, A. (1997). POSSLQs and PSSSLQs: Unmarried academic couples. In M.A. Ferber & J.W. Loeb (Eds.), *Academic couples: Problems and promises* (106-127). Chicago: University of Illinois Press.

Miller-Loessi, K. & Henderson, D. (1997). Changes in American society: The context for academic couples. In M.A. Ferber & J.W. Loeb (Eds.), *Academic couples: Problems and promises* (25-43). Chicago: University of Illinois Press.

Monosson, E. (2008). Introduction. In E. Monosson (Ed.) *Motherhood, the elephant in the laboratory: Women scientists speak out* (1-20). Ithaca, NY: ILR Press.

Moran, L. (2005). *Blowing my cover: My life as a CIA spy*. New York: G.P. Putnam's Sons.

Naples, N.A. (2003). *Feminism and method: Ethnography, discourse analysis, and activist research*. New York: Routledge.

National Science Board. (2008). *Science and Engineering Indicators 2008*. Arlington, VA: National Science Foundation.

Nelson, D. J., & Rogers, D. C. (2004). *A national analysis of diversity in science and engineering faculties at research universities*. Washington, DC: National Organization for Women.

Nerad, M. (1999). *The academic kitchen: A social history of gender stratification at the University of California, Berkeley*. Albany, NY: State University of New York Press.

Nerad, M. (2004 Mar 12). The intersection of family and career for women PhDs in the sciences. Unpublished lecture presented at the University of Washington, Seattle, WA.

Nerad, M. & Cerny, J. (1999). Widening the circle: Another look at women graduate students. *Communicator*, 32(6), 1-7.

Nerad, M. & Heggelund, M. (2008). *Toward a global PhD? Forces and forms in doctoral education worldwide*. Seattle: University of Washington Press.

Nerad, M., Rudd, E., Morrison, E., & Picciano, J. (2007). *Social science PhDs – Five+ years out: A national survey of PhDs in six fields*. Seattle: University of Washington.

NobelPrize.org (2007). Nobel Laureates facts. Retrieved October 6, 2007 from http://nobelprize.org/nobel_prizes/nobelprize_facts.html

Nokes, S.E. (1998). Because I did not know I was different. In Pattatuci, A.M. (Ed.). *Women in science: Meeting career challenges* (89-98). Thousand Oaks, CA: Sage.

Ogilvie, M.B. (1989). Marital collaboration: An approach to science. In Abir-Am, P.G. & Outram, D. (Eds.) *Uneasy careers and intimate lives: Women in science, 1789-1979* (104-125). New Brunswick: Rutgers University Press.

O'Neill, B. (1995). The gender gap: Re-evaluating theory and method. In S. Burt & L. Code (Eds.), *Changing methods: Feminists transforming practice* (327-355). Ontario: Broadview Press.

Orenstein, P. (2001). *Flux: Women on sex, work, love, kids, and life in a half-changed world*. New York, Anchor.

Ouellette, J. (2007). Scientists in love: When two worlds collide. *Nature*, 445, 700-702.

Patton, M.Q. (1980). Qualitative interviewing. In *Qualitative evaluation methods* (195-254). Beverly Hills: Sage.

Pelham, B.W., Mirenberg, M.C., & Jones, J.T. (2002). Why Susie sells seashells by the seashore: Implicit egoism and major life decisions. *Journal of Personality and Social Psychology*, 82, 469-487.

Peril, L. (2006). *College girls: Bluestockings, sex kittens, and coeds, then and now*. New York: W.W. Norton.

Perkins, L.M. (1997). For the good of the race: Married African-American academics – A historical perspective. In M.A. Ferber & J.W. Loeb (Eds.), *Academic couples: Problems and promises* (80-105). Chicago: University of Illinois Press.

Perricone, M. (2007). And they lived in physics bliss forever after… *symmetry* 4(1), 20-27.

Popović, M. (Ed.). (2003). *In Albert's shadow: The life and letters of Mileva Marić, Einstein's first wife*. Baltimore: The JHU Press.

Qian, Z., & Preston, S.H. (1993). Changes in American marriage, 1972-1987: Availability and forces of attraction by age and education. *American Sociological Review*, 58, 482-495.

Reed, C.M., & Bruce, W.M. (1993). Dual career couples in the public sector: A survey of personnel policies and practices. *Public Personnel Management*, 22(2), 187-199.

Reskin, B. (1978). Sex differentiation and the social organization of science. *Sociological Inquiry*, 48, 6-36

Ridker, P.M., Cook, N.R., Lee, I.M., Gordon, D., Gaziano, J.M., Manson, J.E., Hennekens, C.H., & Buring, J.E. (2005 Mar 7). A Randomized Trial of Low-Dose Aspirin in the Primary Prevention of Cardiovascular Disease in Women. Retrieved March 22, 2005 from http://content.nejm.org/cgi/content/short/NEJMoa050613

Rose, E. (2006). Education, hypergamy, and the "success gap." Retrieved October 10, 2007 from: http://www.econ.washington.edu/user/erose/hypergamy_solew.pdf

Rosenfeld, R. & Jones, J.A. (1987). Patterns and effects of geographic mobility for academic women and men. *The Journal of Higher Education*, 58(5), 493-515.

Rosser, S.V. (2004a). Using POWRE to ADVANCE: Institutional barriers identified by women scientists and engineers. *National Women's Studies Association Journal*, 16(1), 50-78.

Rosser, S.V. (2004b). *The science glass ceiling: Academic women scientists and the struggle to succeed*. New York: Routledge.

Rosser, S.V., & Daniels, J.Z. (2004). Widening paths to success, improving the environment, and moving toward lessons learned from the experiences in POWRE and CBL awardees. *Journal of Women and Minorities in Science and Engineering*, 10(2), 131-148.

Rossiter, M.W. (1982). *Women scientists in America: Struggles and strategies to 1940*. Baltimore: The Johns Hopkins University Press.

Rossiter, M.W. (1995). *Women scientists in America: Before affirmative action 1940-1972*. Baltimore: The Johns Hopkins University Press.

Rubin, L.B. (1983). *Intimate strangers: Men and women together*. New York: Harper & Row.

Ruggles, S., Sobek, M., Alexander, T., Fitch, C.A., Goeken, R., Hall, P.K., King, M., & Ronnander, C. (2008). *Integrated public use microdata series: Version 4.0.* Minneapolis, MN: Minnesota Population Center. Retrieved March 11, 2008 from: http://usa.ipums.org/usa/

Russell, G.M. & Bohan, J.S. (1999). Hearing voices: The uses of research and the politics of change. In E.B. Kimmel & M. Crawford (Eds.), *Innovations in feminist psychological research* (401-416). New York: University of Cambridge Press.

Sadrozinski, R., Nerad, M., Cerny, J., & La, S. (March 2003). *PhDs in art history: Over a decade later*. Retrieved from http://www.educ.washington.edu/COEWebSite /Cirge/HTML/ArtHistory.html on May 25, 2004.

Salk, J. (1979). Introduction. In Latour, B. & Woolgar, S., *Laboratory life: The social construction of scientific facts* (11-14). Beverly Hills: Sage Publications.

Schapiro, M. (1977). Notes from a conversation on art, feminism, and work. In S. Ruddick & P. Daniels (Eds.), *Working it out: Twenty-three writers, artists, scientists, and scholars talk about their lives and work* (283-305). New York: Pantheon Books.

Schiebinger, L. (1999). *Has feminism changed science?* Cambridge, MA: Harvard University Press.

Schiebinger, L. (2008). Introduction: Getting more women into science and engineering– Knowledge issues. In Schiebinger, L. (Ed.), *Gendered innovations in science and engineering* (1-21). Stanford: Stanford University Press.

Schoenewies, J. (2006). Dial-up desire. In Newitz, A. & Anders, C. (Eds.), *She's such a geek: Women write about science, technology, and other nerdy stuff* (14-25). Emeryville, CA: Seal Press.

Scholer, A.M. (1998). Issues of gender and personal life for women in academic biology. *Journal of Women and Minorities in Science and Engineering*, 4(1), 69-89.

Schuster, J.H. & Finkelstein, M.J. (2006). *The American faculty: The restructuring of academic work and careers*. Baltimore: The Johns Hopkins University Press.

Sears, A.L.W. (2003). Image problems deplete the number of women in academic applicant pools. *Journal of Women and Minorities in Science and Engineering*, 9(2), 169-181.

Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.

Selvin, P. (1992). Profile of a field: mathematics; heroism is still the norm. *Science*, 255(5050): 1382-1383.

Seymour, E. & Hewitt, N.M. (1997). *Talking about leaving: Why undergraduates leave the sciences*. Boulder, CO: Westview Press.

Shepherd, L.J. (1993). *Lifting the veil: The feminine face of science*. Boston: Shambhala.

Sipher, D. (2007 Jul 29). Nancy Hopkins and Dinny Adams. *New York Times*.

Smith, L.T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. London: Zed Books.

Sniper, F. (2003). Hardware review: Xbox controller S review. Retrieved May 6, 2005 from http://www.talkxbox.com/hreview7.html

Sonnert, G. & Holton, G. (1995). *Gender differences in science careers*. New Brunswick, NJ: Rutgers University Press.

Sorcinelli, M.D. & Near, J.P. (1989). Relations between work and life away from work among university faculty. *The Journal of Higher Education*, 60(1), 59-81.

Soukup, E. (2005 Feb 14). Surveys: Happy V-Day! Just not in Pittsburgh. *Newsweek*, 145(7), 11.

Spertus, E. (2006). Professor in a circuit-board corset. In Newitz, A. & Anders, C. (Eds.), *She's such a geek: Women write about science, technology, and other nerdy stuff* (40-49). Emeryville, CA: Seal Press.

Stein, B.R. (2001). *On her own terms: Annie Montague Alexander and the rise of science in the American west*. Berkeley: University of California Press.

Steinke, J. (2005). Cultural representations of gender and science: Portrayals of female scientists and engineers in popular films. *Science communication* 27(1), 27-63.

Stevens, M. (1977). My work and my working-class father. In S. Ruddick & P. Daniels (Eds.), *Working it out: Twenty-three writers, artists, scientists, and scholars talk about their lives and work* (103-116). New York: Pantheon Books.

Strauss, A. & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Second edition. Thousand Oaks, CA: Sage.

Subramaniam, B. & Wyer, M. (1998). Assimilating the "Culture of no culture" in science-feminist interventions in (de)mentoring graduate women. *Feminist Teacher*, 12(1): 12-28.

Swarbrick, A. (1997). Survival in a gendered domain: The strategies of women technologist returners. *Journal of Women and Minorities in Science and Engineering*, 3(1&2), 77-93.

Sweet, S., & Moen, P. (2004). Intimate academics: Coworking couples in two universities. *Innovative Higher Education*, 28(4), 252–274.

Tang, J. (2006). *Scientific pioneers: Women succeeding in science*. Lanham, MD: University Press of America.

Tavris, C. (1992). *The mismeasure of woman*. New York: Touchstone.

Taylor, M.D., Hart, C.L., Smith, G.D., Whalley, L.J., Hole, D.J., Wilson, V., & Deary, I.J. (2005). Childhood IQ and marriage by midlife: The Scottish Mental Survey 1932 and the midspan studies. *Personality and Individual Differences*, 38(7), 1621-1630.

The Earth Institute ADVANCE Working Group on Science & Technology Recruiting to Increase Diversity. (2005). *A proposal for recruiting and retaining dual career couples*. Retrieved January 2, 2006 from http://www.earthinstitute.columbia.edu/advance/documents/STRIDE_dual_career_final.pdf

Thompson, C. (2003 Aug 17). Do scientists age badly? A researcher says marriage ruins a beautiful mind. *The Boston Globe*. Retrieved May 4, 2005 from http://www.boston.com/news/globe/ideas/articles/2003/08/17/do_scientists_age_badly?mode=PF

Tinto, V. (1993). Toward a theory of doctoral persistence. In *Leaving college: Rethinking the causes and cures of student attrition* (282-297). Chicago: University of Chicago Press.

Tolley, K. (2003). *The science education of American girls: A historical perspective*. New York: RoutledgeFalmer.

Traweek, S. (1988). *Beamtimes and lifetimes: The world of high energy physicists*. Cambridge, MA: Harvard University Press.

Trubek, A. (2004). From spousal hire to single mom: What happens when an academic couple breaks up, and the one who works part time needs a full-time job? *The Chronicle of Higher Education*, 50(24), C1.

Tucker, M.B. & Mitchell-Kernan, C. (1995). *The decline in marriage among African Americans: Causes, consequences, and policy implications*. New York: Russell Sage Foundation.

U.S. Census Bureau. (2001). Technical note on same-sex unmarried partner data from the 1990 and 2000 Censuses. Retrieved November 30, 2007, from http://www.census.gov/population/www/cen2000/samesex.html

Valentine, G. (1999). Doing household research: Interviewing couples together and apart. *Area*, 31(1), 67-74.

Valian, V. (1998). *Why so slow? The advancement of women*. Cambridge, MA: The MIT Press.

Wasserman, E. (2000). *The door in the dream: Conversations with eminent women in the sciences*. Washington, DC: Joseph Henry Press.

Weibe, N. (1995). Farm women: Cultivating hope and sowing change. In S. Burt & L. Code (Eds.), *Changing methods: Feminists transforming practice* (137-162). Ontario: Broadview Press.

Weitekamp, M.A. (2004). *Right stuff, wrong sex: America's first women in space program*. Baltimore: The JHU Press.

Welch, S. (1975). Sampling by referral in a dispersed population. *The Public Opinion Quarterly*, 39(2), 237-245.

Wells, K. (2006). Really good for a girl. In Newitz, A. & Anders, C. (Eds.), *She's such a geek: Women write about science, technology, and other nerdy stuff* (2-13). Emeryville, CA: Seal Press.

Werbel, J.D. & Hames, D.S. (1992). Are two birds in hand worth more than one in the bush: The case of paired employees. *Human Resource Management Review*, 2(4), 317-328.

Whyte, M.K. (1990). *Dating, mating, and marriage*. New York: Aldine de Gruyter.

Williams, J. (2000). What stymies women's academic careers? It's personal. *The Chronicle of Higher Education*, 47(6), B10.

Wilson, R. (2001). The backlash against hiring couples. *The Chronicle of Higher Education*, 47(31), A16.

Wilson, S. (2005 Nov 28). Love in (and out of) academe. *Inside Higher Ed.* Retrieved November 28, 2005 from: http://insidehighered.com/views/2005/11/28/wilson

Wokhlu, N. (1998). My first experience as a woman scientist. In Pattatuci, A.M. (Ed.). *Women in science: Meeting career challenges* (137-139). Thousand Oaks, CA: Sage.

Wolf-Wendel, L.E., Twombly, S.B., & Rice, S. (2000). Dual career couples: Keeping them together. *Journal of Higher Education*, 71(3), 291-321.

Wolf-Wendel, L., Twombly, S.B., & Rice, S. (2003). *The two-body problem: Dual-career-couple hiring policies in higher education*. Baltimore: The Johns Hopkins University Press.

Wolkenbreit, R. (1997). In order to form a more perfect union: Applying no-spouse rules to employees who meet at work. *Columbia Journal of Law and Social Problems*, 31(1), 119-165.

Xie, Y. & Shauman, K.A. (2003). *Women in science: Career processes and outcomes*. Cambridge, MA: Harvard University Press.

Yalom, M. (2001). *A history of the wife*. New York: Perennial.

APPENDIX A: METHODOLOGICAL CHOICES

General Methodological Issues

Including multiple parts data sources in this study allows me to both address different questions about women scientists and speak to multiple audiences. Whereas the Census data part of my project allows me to ask questions about which women scientists and engineers are more likely to partner with other scientists, the interviews allow me to ask questions about women scientists' day-to-day lives that could not be addressed through any established data set. Combining quantitative methods along with qualitative methods allows me to speak to multiple audiences – scientists, feminists, and policymakers alike. Whereas the qualitative methods can be used to learn about scientists' day-to-day interactions within their relationships, the quantitative methods may speak more powerfully to the scientific community and to policymakers. Using mixed methods allows me to best answer and address all of my questions. (Etzkowitz, Kemelgor, and Uzzi, 2000).

One of the difficulties with my work is trying to speak convincingly to both the feminist community and the scientific community within the same text. Whereas scientists are not always familiar with the language used by social scientists, social scientists are not always familiar with the science community. Feminists have long argued about the importance of making sure that research is accessible to the group being studied in addition to other researchers (Burt & Code, 1995). Patricia Hill Collins (1998, 2000) makes similar arguments and has taken a unique approach to this

in her own work by providing glossaries of terms in the back of the books. Doing this, she argues, allows her to be accessible to multiple audiences, including both the academic feminist community and those who do not have the privilege of higher education. Similarly, I have tried to make my work accessible by making my language accessible to multiple audiences. Doing this means that my project is approachable accessible by both social scientists and scientists.

Furthermore, feminist research has often been committed to making sure that the participants feel that their story is accurately presented. This can also take the form of keeping the group studied active in the work throughout the life of the project (Burt & Code, 1995). The authors of *Journeys of Women in Science and Engineering* (Ambrose et al., 1997), for example, passed profiles of women back and forth between the authors and the scientists until both parties were satisfied. In this, and in other ways, research can be interactive. Greaves and Wylie (1995), for example, suggest ways that the questions they asked on their intake form at a battered women's shelter changed as they learned from women who came in. Doing this not only empowered the women, but it also meant that the research better spoke to the women's experiences. Getting feedback from participants is one way to ensure that, as a researcher, you are not presuming to speak for your subjects (Merrick, 1999). In my own work, I used similar methods asking participants to comment on my analysis.

Many have argued that feminist research needs to have a connection to activism and in some way, serve as a catalyst for change (Naples, 2003; Russell & Bohan, 1999). Creating change within science is important to me. Given that I came

to issues concerning women in science through my own dissatisfaction in mathematics, I hope that my own work can help to improve the situation for scientists and engineers. My analysis includes recommendations for changes that can be made in science and engineering based on my own research.

Definition of a Scientist

There are multiple ways to define a scientist. In my own work, I considered scientists to be individuals with a degree in science who work within the science field. Although studies have been done that define scientists more loosely (Eisenhart & Finkel, 1998), I am interested in traditional scientists working within traditional science. Having an education in science means that an individual spent time immersed in a scientific culture wherein young scientists learn about the culture of their field. Continuing to work in science is also important because it means that both they and their spouse or partner have continued contact with the science community. This is relevant since part of my question is how these scientists' relationships affect their work as well as how their work affects their relationships. In my dissertation research, I will focus on academic scientists because the dynamics that affect academic scientists are the ones that have been studied most, creating a base for my own work.

Because of the paucity of women in science and engineering fields, I am more interested in the ways that women experience intimate relationships with other scientists or engineers. The in-depth interviews will be conducted with women only,

although the work with Census data will consider both male and female scientists and engineers. Clearly representing gay and lesbian scientists is important because of how we might expect their relationships to have issues that straight scientists don't face. Although I was unable to find any women of color or lesbians scientists to include in the interviews, I hoped to be able to locate same sex couples with Census data. Although the Census data included women of color partnered to other scientists, all of the women scientists included in the Census data in same sex relationships had non-scientist partners. This is not to say that same sex couples do not exist. Similarly, it is important to have scientists from varied racial backgrounds because of how race affects marriage patterns and because of the paucity of individuals of color in science careers. I had hoped to reach a more diverse set of participants with respect to race in my interviews; all of the women that I was able to interview were white women. This is perhaps not surprising given the paucity of women of color in science and engineering fields, as described in Donna Nelson's data (Nelson and Rogers, 2004). Both of these are areas where the project could be expanded in the future.

Because of the relative paucity of women in the sciences, studying individuals from only one institution may make couples too easy to identify within my analysis regardless of steps that I take to ensure their anonymity. In addition to changing identifying information, I included scientists and engineers at different sites within my interviews. Doing so readers of my study cannot easily identify means the women that participate. Studying a diverse group of scientists not only sheds light on the situation

for different scientists, but it also, according to Joyce Fletcher (1999), can expose alternative ways of working and alternative value systems.

At this stage, I will only be interviewing women because of ethical issues that arise when interviewing both members of a couple (Allan 1980; Bottorff, Kalaw, Johnson, Stewart, & Greaves 2005; Valentine 1999) and because of the unique issues that women in science face due to their under-representation among scientists.

Using Qualitative Methods to Study Science

Scholars have written a large body of research considering the exclusionary nature of science. Although these studies have provided important information about the science community, they largely have not focused on scientists' day-to-day lives. Ethnography and other qualitative methods, give us a tool to examine the interactions and relationships that are a daily part of scientists' lives.

It is also interesting to use qualitative methods to study science because of the ways that critiques of qualitative methods mirror critiques made of the scientific method. Both of these sets of critiques call for researchers to be more aware of ways that their research is affected by their social position. Feminists argue that all research is affected by who performs the research and that there is a need to "reinvent" research (Naples, 2003; Smith, 1999). In general, this is a call for methods researchers to be aware of power within research and how both the choices researchers make and their positions influence their work. Researchers doing qualitative work, especially ethnography, have largely accepted these critiques. Even general textbooks explaining

the use of ethnographic methods talk at length about the importance of reflexivity in one's work (Brewer, 2000; Hammersley & Atkinson, 1995). Using qualitative methods to study science brings the role of culture in creating scientific knowledge to the forefront of the conversation, both through subject matter and through ethnography's own questioning and reflexivity.

In polio vaccine inventor Jonas Salk's introduction to Latour and Woolgar's ethnography, *Laboratory Life*, he refers to the methods the authors use in their study as "crude" (Salk, 1979, 12). Banu Subramaniam and Mary Wyer, similarly, discuss scientists' reluctance to believe conclusions based on ethnographic research (1998). Traditional scientists might argue ethnographic and qualitative methods are not "scientific" because they do not follow the "scientific" method, which in the scientific tradition of positivism[32] is thought to erase all biases of the investigators. Feminist critiques of science, however, address this point. Sandra Harding's (1991) standpoint theory, for example, argues the standpoint the investigator takes when approaching a study colors her or his results, regardless of her or his discipline. By using qualitative methods to study scientists, we can illuminate the daily interactions of scientists, which may prove crucial in determining how to reform science to include a more diverse workforce. Moreover, using methods that incorporate critiques of positivism into their practice can make scientists familiar with and more comfortable with ideas

[32] Positivism refers to a philosophical position claiming that all knowledge can be verified empirically and laws exist that enable this to be done. As a style of inquiry, it emphasizes observation rather than interaction.

about reflexivity in research. Furthermore, using reflexive methods to study scientists may help scientists to recognize ways their own research is not free from bias.

APPENDIX B: RELEVANT CENSUS OCCUPATION CODES

2000 code	General code	Job title
Computer and Mathematical Occupations		
100	100	Computer Scientists and Systems Analysts
101	100	Computer Programmers
102	100	Computer Software Engineers
104	100	Computer Support Specialists
106	100	Database Administrators
110	100	Network and Computer Systems Administrators
111	100	Network Systems and Data Communication Analysts
120	120	Actuaries
121	120	Mathematicians
122	120	Operations Research Analysts
123	120	Statisticians
124	120	Miscellaneous Mathematical Science Occupations, Including Mathematicians and Statisticians
Architecture and Engineering Occupations		
130	130	Architects, Except Naval
131	130	Surveyors, Cartographers, and Photogrammetrists
132	130	Aerospace Engineers
133	130	Agricultural Engineers
134	130	Biomedical Engineers
135	130	Chemical Engineers
136	130	Civil Engineers
140	130	Computer Hardware Engineers
141	130	Electrical and Electronics Engineers
142	130	Environmental Engineers
143	130	Industrial Engineers, Including Health and Safety
144	130	Marine Engineers
145	130	Materials Engineers
146	130	Mechanical Engineers
150	130	Mining and Geological Engineers, Including Mining Safety Engineers
151	130	Nuclear Engineers
152	130	Petroleum, Mining and Geological Engineers, Including Mining Safety Engineers
153	130	Miscellaneous Engineers, Including Agricultural and Biomedical
154	190	Drafters
155	190	Engineering Technicians, Except Drafters
156	190	Surveying and Mapping Technicians

Life, Physical, and Social Science Occupations

160	160	Agricultural and Food Scientists
161	160	Biological Scientists
164	160	Conservation Scientists and Foresters
165	160	Medical Scientists
170	170	Astronomers and Physicists
171	170	Atmospheric and Space Scientists
172	170	Chemists and Materials Scientists
174	170	Environmental Scientists and Geoscientists
176	170	Physical Scientists, All Other
180	180	Economists
181	180	Market and Survey Researchers
182	180	Psychologists
183	180	Sociologists
184	180	Urban and Regional Planners
186	180	Miscellaneous Social Scientists, Including Sociologists
190	190	Agricultural and Food Science Technicians
191	190	Biological Technicians
192	190	Chemical Technicians
193	190	Geological and Petroleum Technicians
194	190	Nuclear Technicians
196	190	Miscellaneous Life, Physical, and Social Science Technicians, Including Social Science Research Assistants and Nuclear Technicians

APPENDIX C: LOADING THE CENSUS DATA AND CHOOSING THE SAMPLE

(1) Put the full path for the data file in the .sps file from ipums . Change variable names for attached spouse variables so that they're 8 or fewer characters.
   a. Hispan_sp -> hisp_sp
   b. School_sp -> schl_sp
   c. gradeatt_sp -> grdat_sp
   d. pwmetro_sp -> pwmet_sp
   e. educ99_sp -> educ_sp

   Make sure that the file ends with ". execute." – that seems to not be saving correctly from the website. Load in data. Save as all people.sav

(2) Use Select Cases to make a file of people whose occupation code is between 100 and 199, whose educ is 15-17, whose school is 1 and whose industry is 787. (Scientists with a master's or higher who work in a college and are not currently in school). The partnerships are already figured out for people who are married. I need to work on the unmarried partner scientists and the HOH scientists. Save as all sci.sav (6082 cases).

(3) Now make a file of academic scientists who are unmarried partners (related = 1114, sci unmarried partners.sav, 157 cases) and a list of HOHs from the all people file (related = 101, all HOHs.sav, 5,273,998). In the HOH file, get rid of all variables other than serial, age, raced, sex, hispand, educ99, occ, ind, school, gradeatt, pwmetro. When merging the files, rename the variables to be age_sp, race_spd, sex_sp, hisp_spd, edu99_sp, occ_sp, ind_sp, schl_sp, grdat_sp, pwmet_sp. At this point, calculate reltype. If same sex = 2, if opp sex = 3. [Note that this step assumes that the unmarried partners are the unmarried partners of the heads of household. This should be true since the question asks about each persons' relationship to the head of household.] Save as sci unmarried partners.sav.

(4) Do the same with unmarried HOH academic scientists (HOH sci.sav, 1696 cases) and a list of all unmarried partners (all unmarried partners.sav). This time, if they're single, reltype = 0.

(5) Start with all sci.sav and delete everyone except for the married scientists – code their relationship as reltype = 1. Merge this file with sci unmarried partners.sav and HOH sci.sav. Save as all sci w relat info.sav (5493 cases).

(6) Look at the people in all sci.sav who are unmarried and are neither unmarried partners or HOHs. Save as other sci.sav (589 cases). What does it say about their marital status? What should I do with these people?

Relationship to household head [detailed version] * Marital status Crosstabulation
Count

	Marital status					Total
Relationship to Head of Household	Married, spouse absent	Separated	Divorced	Widowed	Never married/ single	

Child	8	2	4	1	86	101
Adopted Child					2	2
Stepchild					1	1
Child-in-law	1					1
Parent			2	1		3
Parent-in-Law	1					1
Sibling		1			14	15
Sibling-in-Law	2				2	4
Grandchild	1				1	2
Other Relatives	1				2	3
Aunt or Uncle	1					1
Nephew, Niece			1		1	2
Cousin					1	1
Housemate/ Roommate	20	5	8	1	238	272
Roomers/boarders/ lodgers	4	1	9	1	42	57
Other non-relatives (1990 includes employees)	2		6		9	17
Non-inmate 1990	55	2	4		43	104
Institutional inmates	2					2
Total	98	11	34	4	442	589

None of them come up as married, spouse present. Some of them come up as married, spouse absent. I can't include these people because I can't determine their spouses' occupations. Similarly, I can't determine whether any of the single, divorced, or widowed people have unmarried partners, so I can't include any of them. (Note that this chart contains unweighted data – the average weights for each person are ~20).

(7) Look at the marital status of all of the people in my merged file and see how it compares to how I've coded their relationship. Are there any problems?

Marital status * Relationship Type Crosstabulation

Count

		Relationship Type				Total
		Single	Married, opposite sex	Unmarried, same sex	Unmarried, opposite sex	
Marital status	Married, spouse present		3640			3640
	Married, spouse absent	148				148
	Separated	48			7	55
	Divorced	255		15	56	326
	Widowed	36		2	2	40
	Never married/ single	1020		52	212	1284
Total		1507	3640	69	277	5493

So, it looks like all the married people are coded correctly in reltype. Anyone who's marital status is married, spouse absent needs to be removed from the single people group; because I don't have information about their spouses, I need to take them out of the sample altogether. Otherwise, I think that

everything else is fine. I may want to complicate my category for single to reflect that some of those people are divorced, widowed, separated, etc.

(8) Recode occ and occ_sp into the simplified occupation categories, called gocc and gocc_sp. For gocc_sp, if they weren't scientists I coded them as a 0 if they were a occ = 0 (not working) or 999 if they were in some other occupation.

(9) Made a few new variables:
   a. sci_sp – Indicates whether their partner is a scientist (occ between 100 and 196)
   b. acad_sp – Indicates whether their partner works in acad (ind 787)
   c. acsci_sp – Indicates whether their partner is an academic scientist with a graduate degree (educ of at least 15)

(10) Tell SPSS to use the weights by doing Data -> Weight Cases and then using the variable perwt.

(11) Delete the men and save as female part sci w relat info.sav. 1185 cases remain.

APPENDIX D: SPSS LOGISTIC REGRESSION CODE

Code for initial analysis:

```
LOGISTIC REGRESSION VAR=acscisp
  /METHOD=ENTER genx preboom hispang black asian bornab natcit noncit
  /METHOD=ENTER masters profdeg compocc mathocc engocc lifeocc sococc
 techocc
  /METHOD=ENTER metropol married
  /PRINT=CI(95)
  /CRITERIA PIN(.05) POUT(.10) ITERATE(20) CUT(.05) .
```

Code for US Born women only:

```
LOGISTIC REGRESSION VAR=acscisp
  /METHOD=ENTER preboom genx hispang black asian
  /METHOD=ENTER masters profdeg compocc mathocc engocc lifeocc sococc
 techocc
  /METHOD=ENTER metropol married
  /PRINT=CI(95)
  /CRITERIA PIN(.05) POUT(.10) ITERATE(20) CUT(.05) .
```

APPENDIX E: EMAIL INVITATION TO INTERVIEW PARTICIPANTS

Hi –

I'm a PhD student in the Women Studies department at UW. My dissertation research will focus on issues facing women in science and engineering. In particular, I am interested in conducting interviews with women faculty members in science and engineering who have spouses or partners who are also scientists and engineers.

I am looking for women who:

- Are research faculty, teaching faculty, or postdocs in science and engineering,
- Have spouses or partners who are also academic scientists or engineers, and
- Have been living with their partner for the past year (or have been living apart for reasons beyond their control such as employment or family issues).

If you fit these criteria and are interested in participating, please contact me to schedule an interview at blaser@u.washington.edu or ask for Brianna at 206.543.4810. Interviews will take approximately an hour. Depending on your preference, I can come to your office or we can meet elsewhere. You may be asked to complete a second interview or to give me feedback after the interview. Participation in either of those aspects of the study is completely optional. Please note that confidentiality of information sent via email cannot be guaranteed.

If you know of other women who might qualify for my study, please feel free to forward this email.

Thanks for your help,
Brianna

APPENDIX F: UNIVERSITY PUBLICATION ADVERTISEMENT TO RECRUIT INTERVIEW PARTICIPANTS

Announcement Title: Call for Participants: Women Scientists' and Engineers' Experiences of Marriage/Partnership to Other Scientists

Short description: A doctoral student in Women Studies seeks volunteers to participate in her dissertation research on issues facing women in science and engineering. Participants will be asked to participate in interviews about their experience as a woman married to or partnered with another scientist or engineer.

Full description: A doctoral student in Women Studies seeks volunteers to participate in her dissertation research on issues facing women in science and engineering. In particular, she will conduct interviews with women faculty members in science and engineering who have spouses or partners who are also scientists and engineers.

Qualifying women:

- Are research faculty, teaching faculty, or postdocs in science and engineering,
- Have spouses or partners who are also academic scientists or engineers, and
- Have been living with their partner for the past year (or have been living apart for reasons beyond their control such as employment or family issues).

If you fit these criteria and are interested in participating, please email blaser@u.washington.edu or call Brianna at 206.543.4810 to schedule an interview. Interviews will take approximately an hour. You may be asked to complete a second interview or to offer feedback after the interview. Participation in either of those aspects of the study is optional. Please note that confidentiality of information sent via email cannot be guaranteed.

Contact e-mail address: blaser@u.washington.edu

URL for more information: none

Contact phone number: 206.543.4810

APPENDIX G: INTERVIEW QUESTIONS

What I'm interested in are couples in the sciences. This includes both issues about why there are so many couples in the sciences and the effect that being in a couple has on scientists' and their careers. So I have a series of questions that I want to ask you – some of these questions will be about before you met your partner/spouse, some will be about meeting your partner/spouse, and others will about your present day life. Remember that you can choose not to answer any of the questions. Before we get started, do you have any questions for me?

Before Meeting Your Partner/Spouse

How did you decide to enter a career in science? Are there other scientists (or people with science related jobs?) in your family? (If yes, did this influence your decision to marry/partner with a scientist?)

Is your current relationship your first relationship with a scientist? Can you tell me about the others? Were the others in the same dept/field/lab? Is there a reason you didn't have other relationships with scientists?

Did you seek out a relationship with another scientist or did it just happen? Did you want to be with someone in a similar field?

Meeting and Becoming Involved with Your Spouse/Partner

When and how did you meet? When did you start dating? (Listen for things about where they were in their career, when they became partners/married)

How did your colleagues respond when you became involved with your partner? Do you know how your partner's colleagues responded?

Did you ever think about leaving science (or the academy)? (Listen for when). Did you talk to your partner about it? Did having a partner who's a scientist help you decide to stay?

Ask follow up questions to get the story in chronological order (i.e., where did jobs/school take them after they met and how did they end up here).

The Here and Now

Has being married to/partnered with another scientist affected your professional life? How? What about your research and how you do your research? Has it affected job opportunities? Has it affected your participation in professional societies or conferences? (Listen for both positive and negative.)

Have you ever collaborated on professional projects with your partner? Why or why not? (What was/were the project(s) about?)

Does the fact that you are married to/partnered with another scientist affect your personal life? How? (Listen for both positive and negative. Listen for both social life and around the house.)

Do you have children? How old are they? What effect does that have on your professional life? Is the effect of children similar on your partner's career? (Listen for things that are specific to have a partner in the sciences.)

What role does science play in your personal life? Do you talk about science a lot, attend science events in your personal life, take your kids to science museums, etc? What aspects of science do you talk about? (i.e., the politics of being in science or scientific content).

Over the years, has being with a scientist affected your integration into your department? Into your field? Into professional societies? (Listen for social aspects of integration). Has having a partner in science helped you meet people? Increased your interactions with other scientists? Changed how people viewed you?

Do you have tenure? Does your spouse/partner? How did having a scientist spouse/partner affect the tenure process for you?

Are there styles of doing your work that you apply to your everyday life? For example, I know a couple of computer scientists who use algorithms to decide how they'll do household chores. Do you do these sorts of things with your partner/spouse? If you do this, how does it affect your relationship?

Do you ever feel like you're in competition with your partner? For actual grants? To have a better publication record? To be a better scientist?

What do you like about being partnered to another scientist? Dislike?

What advice would you give to a young woman today if she was considering a relationship with another scientist/engineer?

APPENDIX H: DEMOGRAPHIC INFORMATION FORM

Demographic Questions:

Age:_____
Race:_____
Degree/Year/School:

Partner's Degree/Year/School:

Job title/Department:

Partner's Job Title/Department:

Do you consider your work: Lab work? Field Work? Theoretical Work? Other?

Have you ever taken a course on feminist issues?

Have you ever been involved with a committee that looked at gender issues?

What were your parents' occupations? What was the highest level of education they obtained?

Are you interested in being contacted for a second interview if necessary?

Would you like the opportunity to comment on analyses of interviews conducted as part of this study?

APPENDIX I: CONSENT FORM

UNIVERSITY OF WASHINGTON
CONSENT FORM
The Careers and Lives of Women Scientists and Engineers Partnered to Scientists or Engineers

Researchers:	Brianna Blaser, Ph.C.	Angela Ginorio, Ph.D.
	Graduate Student	Associate Professor
	Women Studies	Women Studies
	206.543.4810	206.685.2238

Researchers' statement

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." We will give you a copy of this form for your records.

PURPOSE OF THE STUDY

We are conducting a study looking at the experiences of women scientists and engineers who are married to other scientists or engineers. We are interviewing such women to learn about how their experiences in their careers and personal lives have been affected by having a close relationship with another scientist or engineer. Because a particularly high percentage of women in the sciences and engineering have partners who are also in the sciences or engineering, by learning about these relationships, we will learn more about the situation for women in science and engineering more generally.

STUDY PROCEDURES

You will be interviewed in a setting of your choosing. The initial interview will last approximately one hour and will cover diverse subjects relating to your career and personal life. Among the most personal questions you will be asked are: "Is your current relationship your first relationship with a scientist? Can you tell me about the others?" and "Does the fact that you are married to/partnered with another scientist affect your personal life? How?" A number of questions will ask directly about your career and/or relationship with your partners. You may refuse to answer any question and you may terminate the interview at any time. Interviews will be tape-recorded.

Following the initial interview, you will be asked to review a transcript or notes of your interview and asked for further feedback. If necessary, you may be asked if you

would like to participate in a second interview. Both of these steps are optional and you do not need to participate in them.

You will also be asked whether you would like to comment on the analysis of the interviews. If you agree to do so, you will be asked to read and comment on drafts of the researchers' analysis of the interviews. This may also include reading and commenting on drafts of survey questions to be used in a later survey.

RISKS, STRESS, OR DISCOMFORT

Risks include the discomfort and stresses that might be induced from talking and/or thinking about your career and/or personal life. It is recommended that if you experience discomfort or stress that you seek out a mental health professional to talk about it. Furthermore, you have the right to refuse to answer any question

Mental health resources at the University of Washington include: (1) UW CareLink, the University's Employee Assistance Program (EAP). Free, confidential counseling is available for all benefits-eligible employees and their families. They can be reached at: 1-866-598-3978 or http://www.washington.edu/admin/hr/benefits/worklife/carelink/ and (2) the Mental Health Clinic at Hall Health, which has the goal of assisting patients to restore, maintain, or improve the quality of their living and learning. They can be reached at: 206-616-2495 or http://www.hallhealthcenter.com/default.asp?clinicid=6

Digital tape recordings of the interviews will be made. The files will not be shared with anyone outside of the research team. You will be given an opportunity to review transcripts of the recordings and delete any portions. Audio files will be destroyed within two years of the interview date.

BENEFITS OF THE STUDY

This study will expand the information that is known about women scientists and engineers. To date, no research exists on marriages between scientists even though up to 50% of all women scientists are married to male scientists. By learning about the lives of such women, we may ultimately be able to reform scientific culture to make science and engineering more hospitable environments for women. Note that you may not receive any individual benefits from taking part in this study.

OTHER INFORMATION

Data will be kept confidential. Within two years of the interview date, any links to identifiers will be broken. No one other than the research team will have access to identifiable data. All of the information you provide will be confidential. However, if we learn that you intend to harm yourself or others, we must report that to the authorities .

Government or university staff sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your

records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

You may refuse to participate or may withdraw from the study at any time without penalty.

No compensation will be provided for your participation in this study.

Please specify any restrictions that you wish to place on the material collected through this interview.

Restrictions:

_____

_____

_____

_____

_____

_____

_____

Do you give your permission for data collected during this interview to be used in future studies on this topic?

☐ Yes ☐ No

If a follow up to this study is conducted, would you be interested in participating? (Checking yes means that you may be contacted in the future about such a study and that the link between your interview data and identifiers will not be broken for up to five years after the interview).

☐ Yes ☐ No

_____

Printed name of study staff obtaining consent Signature Date

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above. If I have questions about my rights as a research

subject, I can call the Human Subjects Division at (206) 543-0098. I will receive a copy of this consent form.

Printed name of subject Signature of subject
Date

Copies to: Researcher
Subject

APPENDIX J: CODES USED FOR INTERVIEW DATA

advantages
advice
anti-nepotism
balance
being there
bias
busy
change over time
changing name
collaboration
colleagues' response
comparisons
competition
compromise
confidence
conflicts b/w professional and personal
conscious choice
convenient
creates opportunities
credibility
Demanding careers
diff b/w fields
diff b/w partners
diff departments, same focus
diff fields but same dept
diff focus but same field
different
different conferences
different departments
different meetings
different names
different perspective
different responsibilities
disadvantages
division of labor
divorce
dual careers
encouragement
environment
family + sci
family as a distraction
family non-sci
few other relationships
field work
flexibility of jobs
gaps in knowledge
geography
hard to know the effects of being with a sci
he's _____
he's senior
hiring help
husband = former student
identity
importance of family
increases interactions
independence
integration
intelligence
intensity
interdisciplinary
intimidation of non-sci
It just happened.
kept relat. secret
kids + travel
kids + work
kids broaden
kids take time
knew each other first
known as couple
later forming relationship - fewer effects on career
limited hours
linked professional opportunities
long distance
marriage expands the role of sci
married long time acquaintance
men above or equal
mentoring
met as faculty
met as postdoc
met as undergrad
met at conference
met in grad school

met through friends
met when he was non-sci
narrowness
nerd
networking
no effect on prof societies
no sci at home
non-academic jobs
non-sci friends
non-sci relationship
old boys
one established, one looking
one of the first
other couples
other hobbies
other sci relationship
outside offers
own identity
partner as a good colleague
passion for sci
personal affects professional
politics of sci
prestige
professional identity
reading each other's work
reasons for attraction
relat brings opportunities
resistance
restriction
retirement
role as entertainers
same department
sci + life decisions
sci as a way of life
sci as all-consuming
sci as friends
sci as hobby
sci as identity
sci in genes
sci knowledge at home
sci spouse accepts colleagues
separation b/w personal and professional
separation in professional lfie
sexuality and sci
shared interests
sharing time at work
she's senior
similar interests
similar lexicon
small vs. big meetings
social integration
soft money
sounding board
start a relationship long distance
Stresses
structure of sci
support
support at work
support from family
support from spouse
surrounded by science
talk re: sci
tenure
thrown together
time with kids
trailing spouse
travel
two-body problem
two as one
undergrad life as more diverse
understands
uneven offers
university as unresponsive
unsymmetrical
values
way of thinking
when to have kids
women's issue
work carries into home life
work life = social life
working together
works out

VITA

Brianna Blaser was raised by progressive parents and had an early love for the field of mathematics. As a result, when she entered college, she was surprised to find that women were scarce in mathematics. During this time, she developed an interest in issues concerning women in science and engineering fields. She graduated with University Honors from Carnegie Mellon University in 2002 with majors in mathematics and psychology and a minor in gender studies. Brianna is a member of Phi Beta Kappa, among other honorary societies. She has held internships with the National Institute of Standards and Technology and the Association for Women in Science. While in graduate school, she worked for the University of Washington's Center for Workforce Development. In 2008, Brianna graduated from the University of Washington with a Doctor of Philosophy in Women Studies. Following graduation, she took a position as Project Director with the American Association for the Advancement of Science.