Understanding and Strengthening Library Connections to the Research Enterprise: From Assessment to Action

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The Academic Research Enterprise

- Research sponsored/funded externally by government, foundations, commercial sector ("new money")
- Primarily in science, technology and medicine (costly areas to do research)
- Research seen as key to economic and social development
- Research awards bring prestige . . . and more funding
- Top research universities attract the best faculty & students
- Academic research and study is now globally competitive

Traditional Academic Library Connection to Research: Content-Centered

- Acquire

- Organize

- House and preserve

- Provide access to

- Assist in information discovery and management

Academic Research in the 21st Century: Collaborative and Computational

U.S. academic research publication trends 1988-2001

- **Interdisciplinary**
  - Single institution multiple department articles **+13%.**
  - Single department articles **-8%.**
- **Interinstitutional**
  - Articles with authors from more than one U.S. institution **+40%.**
- **International**
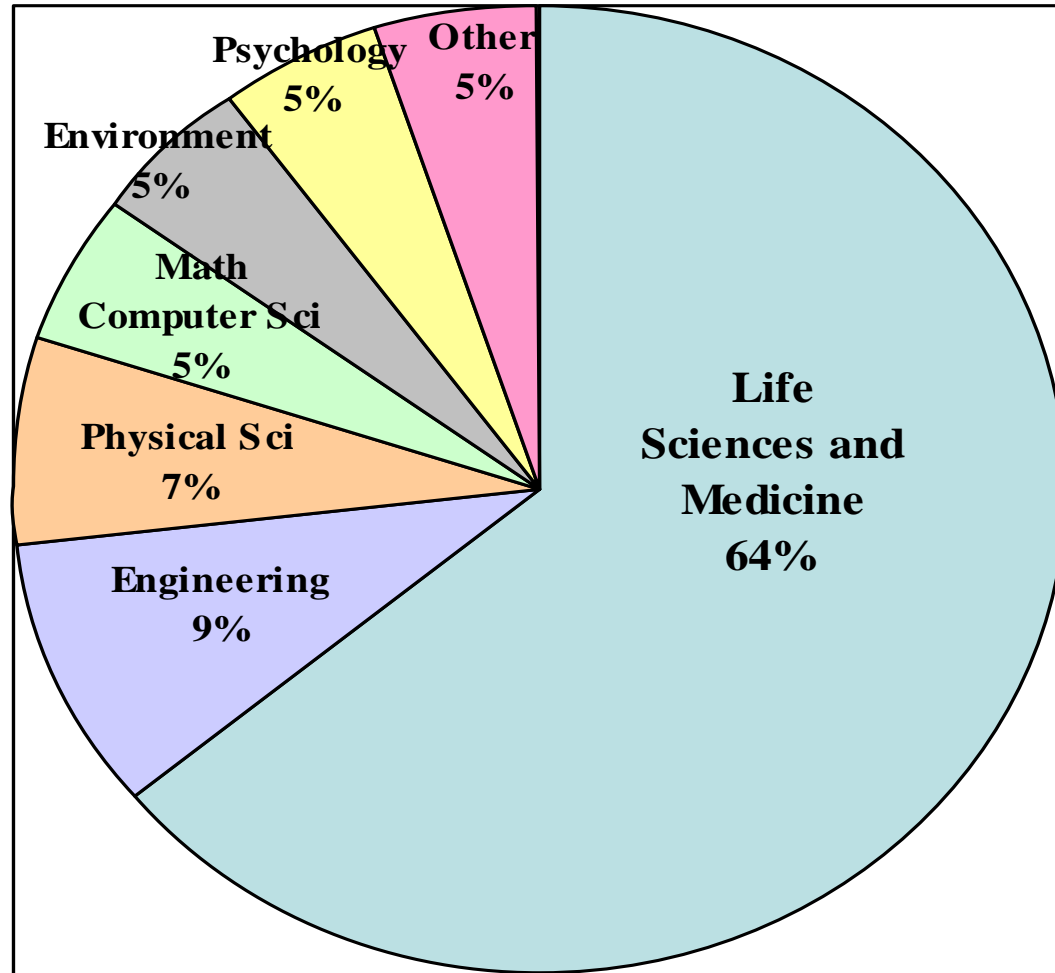 - Articles with at least one international co-author went from **11% to 25%**

"All research is becoming computationally intense"

U.S. Government Sponsored University Research by Field

($22 Billion in 2006)

University of Washington

- **Located in beautiful Seattle USA metro population 3.2 million**
- **Comprehensive public research university**
  - 27,000 undergraduate students
  - 11,000 graduate and professional students (80 doctoral programs)
  - 4,000 research and teaching faculty
- **$800 million annually in federal research funds (2nd in U.S.)**
- **Large research library system**
  - $40 million annual budget
  - 150 librarians
  - Active assessment program since 1992 using multiple methods

The Importance of the Research Enterprise
University of Washington Operating Revenues
$2.4 Billion in 2005-06
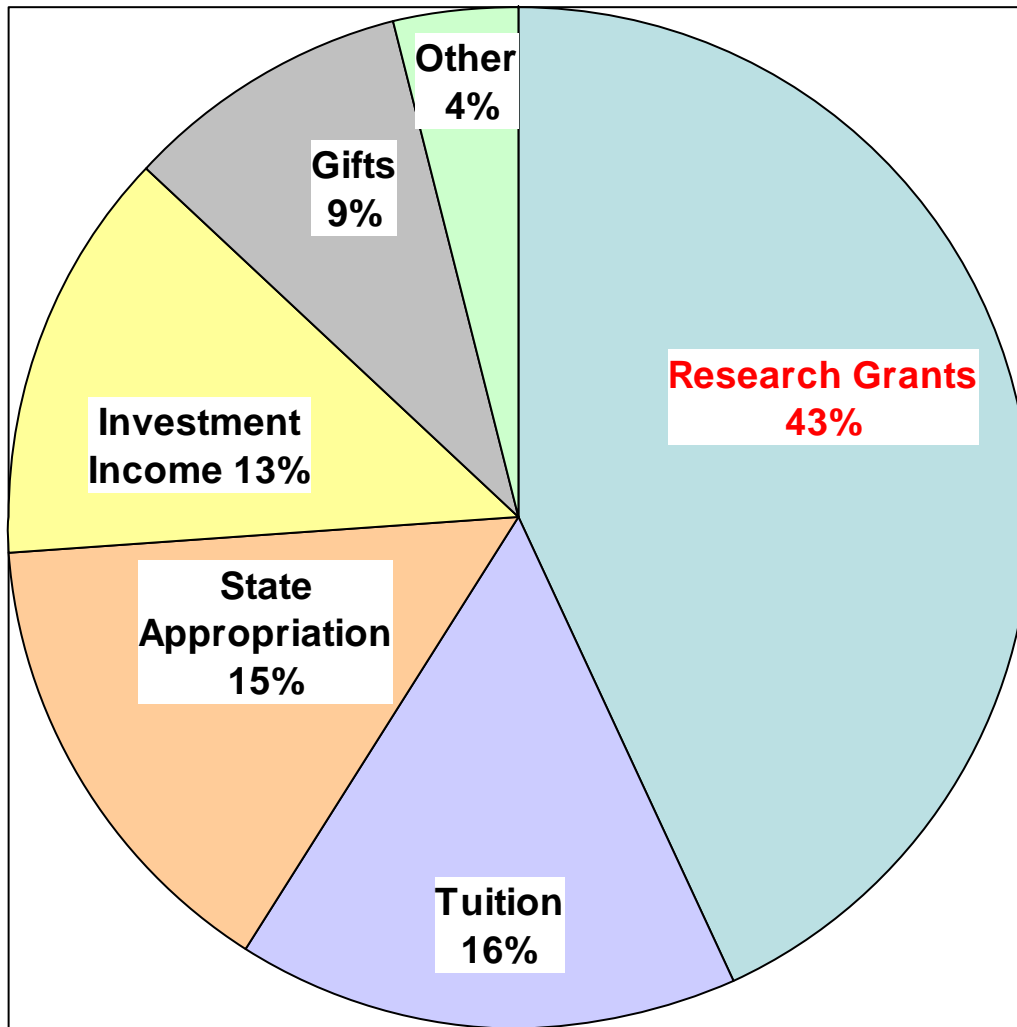
Research Grants $1 Billion
Health and Human Services
 $510 million
National Science Foundation
 $95 million
Other federal agencies
 $190 million
Industry/Foundations
 $100 million
Other non-federal
 $110 million

Pie chart labels: Other 4%, Gifts 9%, Investment Income 13%, State Appropriation 15%, Tuition 16%, Research Grants 43%

UW Economic and Intellectual Impact

- Federal grants support 7,600 FTE UW employees
- UW research generates 34,000 jobs state-wide
- 200 new companies launched in last 10 years
- $25 million in tech license income annually
- 3,500 grad students work on federally funded research
- 4,000 undergrads participate in deep research experiences

"I can't think of a single factor more important to economic vitality than the research university."
-Dr. Robert Parry, President, Federal Reserve Bank of San Francisco

Research University Rankings:
University of Washington

	International	USA
Academic Rankings of World Universities (2007) **Shanghai Jiao Tong University (China)**	**16** **4 in Life Sciences** **3 in Clinical Medicine**	**14**
Webometrics Rankings of World Universities (2007) **Cybermetrics Lab, CSIC (Spain)**	**10** **8 Productivity** **6 Visibility** **17 Impact**	**10**
The Top American Research Universities (2006) **The Center for Measuring University Performance (USA)**		**11(t)** **6 Research funding** **11 National Academy members** **4 Post-Doctoral appointments**

Some Recent Efforts to Assess Library Connections to the Research Enterprise

- SCONUL VAMP (UK)
- MINES for Libraries™ (North America)
- Contingent valuation (UK, North America)
- Information needs of researchers and their library use;
  - 3 studies in the U.S.; 1 in UK (all used qualitative methods)

Library Connection: SCONUL Value and Impact Measurement Programme (VAMP)

Goals and Benefits (per Stephen Town)

- Attainment & retention of library institutional income
- Proof of value and impact on education and research
- Evidence of comparability with peer institutions
- Justify continuing role for libraries and their staff
- Meet national costing requirements for separating teaching and research spending

Value and Impact Guidelines

- Institutional Value
- Impact on Teaching & Learning
- Impact on Research

Library Connection to Research: MINES for Libraries™

A web-based transactional survey that collects data on users' demographics and their purpose of use. Traditionally used to document library use for sponsored research.

Administered at 40 North American universities in the last four years. Offered by Association of Research Libraries.

Coursework 42%
Sponsored Research 26%
Patient Care 2%
Teaching 6%
Other Activities 8%
Other Research 16%

(OCUL)
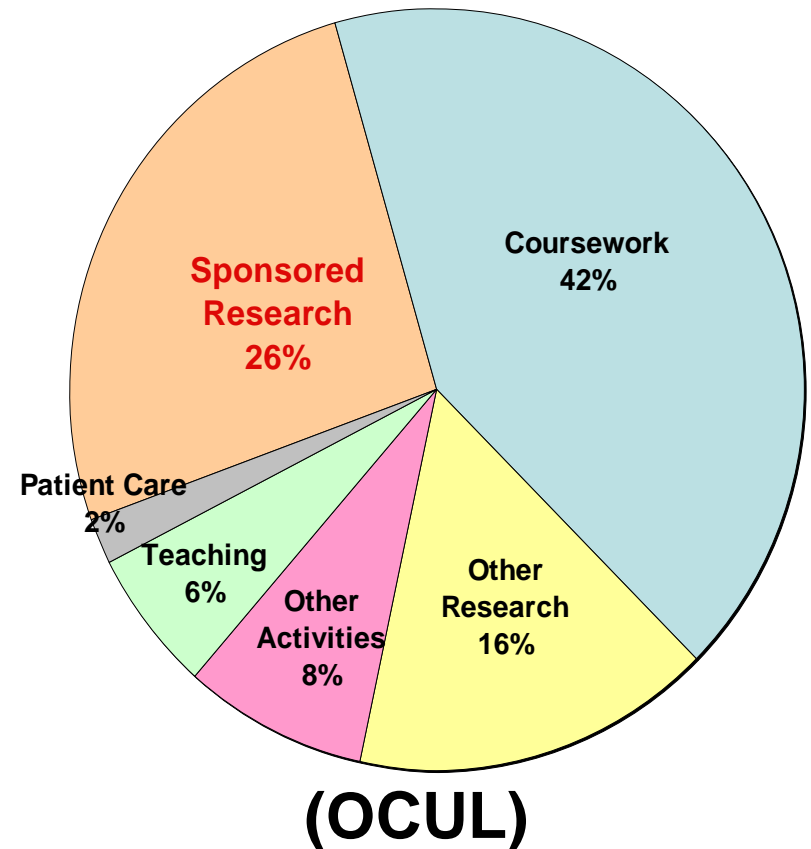
Measuring Economic Value: Library Valuation Studies

- **Joint Information Systems Committee (JISC) (UK) Value for Money**
  - 18:1 return on investment by using e-resources rather than paper-based information (UK 156 million – 1.4 million person days

- **King and Aerni: Contingent Valuation of Univ. of Pittsburgh journal collection**
  - 4:38 return on investment in time saved or net benefit of US 11.61 million

Strengthening the Library Connection: Understanding Researchers & Research

- What are their research interests? How are they funded?
- How do they work? What's important to them?
- How do they communicate with each other?
- How do they find information needed for their work?
- How do they currently use library/information services?
- How would they prefer to do so?
- How do they differ from each other in library use/needs?

How does the library add value to their work?

Understanding How Researchers Work: Four Recent Studies/Key Findings

- **University of Minnesota (Humanities/Social Sciences)**
  - Researchers "extremely" comfortable with electronic sources
  - Inadequate methods for organizing their research materials
- **New York University (All fields)**
  - Researchers (all disciplines) no longer tied to physical library
  - Expectations for info shaped by Web and commercial sector
- **Research Information Network (UK)**
  - Researchers discover information differently than librarians
  - Library seen as content not service provider
- **University of Washington (Biosciences)**
  - Start info search outside library space (virtual and physical)
  - Could not come up with "new library services" unprompted

Reasons for UW Libraries Biosciences Review

- Better understand how bioscientists work
- Understand significance and value of bioscience and research enterprise to University
- Gauge extent and impact of interdisciplinary research
- Understand implications of changes in library use patterns
- Review viability of Libraries organizational structure/footprint
- Strengthen library connection to support of bioscience programs and the research enterprise

Biosciences Review Process (2006)

- Define scope (e.g. what is "bioscience"?)
- **Identify and mine existing data sources**
  - **Extensive library assessment data**
  - **Institutional and external data**
- **Acquire new information through a customer-centered qualitative approach**
  - **Environmental scan**
  - **Interviews (12 faculty)**
  - **Focus groups (6 total – 3 faculty & 3 students)**
  - **Peer library surveys**
  - **NO NEW USER SURVEYS**
- Review, analyze and understand information
- Final report and recommendations

Biosciences Focus Group/Interview Themes

- Discovery begins outside of library space with Google and Pub Med; lesser use of library bibliographic data bases
- Faculty identify library with ejournals; want more titles & backfiles
- Faculty/many grads go to physical library as last resort
- If not online want digital delivery/too many libraries
- Lack understanding of many library services, resources
- Increasing overlap between "bio" and other science research

In Short, They Told Us

- Content is still the link with the library

- Print is dead, really dead

- Provide library-related services and resources in our space not yours

- We really don't understand these new services you're promoting (data curation, institutional repository)

Biosciences Task Force Recommendations

- Integrate search/discovery tools into users workflow
- Expand/improve information/service delivery options
- Make physical libraries more inviting/easier to use
  - Consolidate libraries, collections and service points
  - Reduce print holdings; focus on services
- Use an integrated approach to collection allocations
- Get librarians to work outside library space
- Lead/partner in scholarly communications and E-science
- Provide more targeted communication and marketing

Biosciences Review Follow-up : 2007 Actions

- Appointed a Director, Cyberinfrastructure Initiatives & Special Asst to the University Librarian for Biosciences & E-Science
  - He is making connections to key players in University research community
- Libraries Strategic Plan priorities for 2007 include:
  - Improve discovery to delivery (WorldCat Local etc.)
  - Reshape our physical facilities as discovery and learning centers
  - Strengthen existing delivery services, both physical and digital, while developing new, more rapid delivery services
  - Enhance and strengthen the Libraries support for UW's scientific research infrastructure
  - Do market research before developing & promoting services
- Informed development of Libraries 2007 Triennial Survey

2007 Triennial Library Survey

UW Libraries has conducted large-scale surveys of faculty and students since 1992.   In 2007, 1455 faculty responded (36%)

Biosciences Follow-Up – New Questions for 2007

- Sources consulted for information on research topics
- Reasons Library Web sites are used
- Factors in decision where to publish journal articles
- **UW Libraries contribution to your work**
- Assessment of student information literacy abilities
- **Usefulness of new or expanded services**

UW Faculty Mode of Use by Academic Area
1998/2007 (weekly or more often)

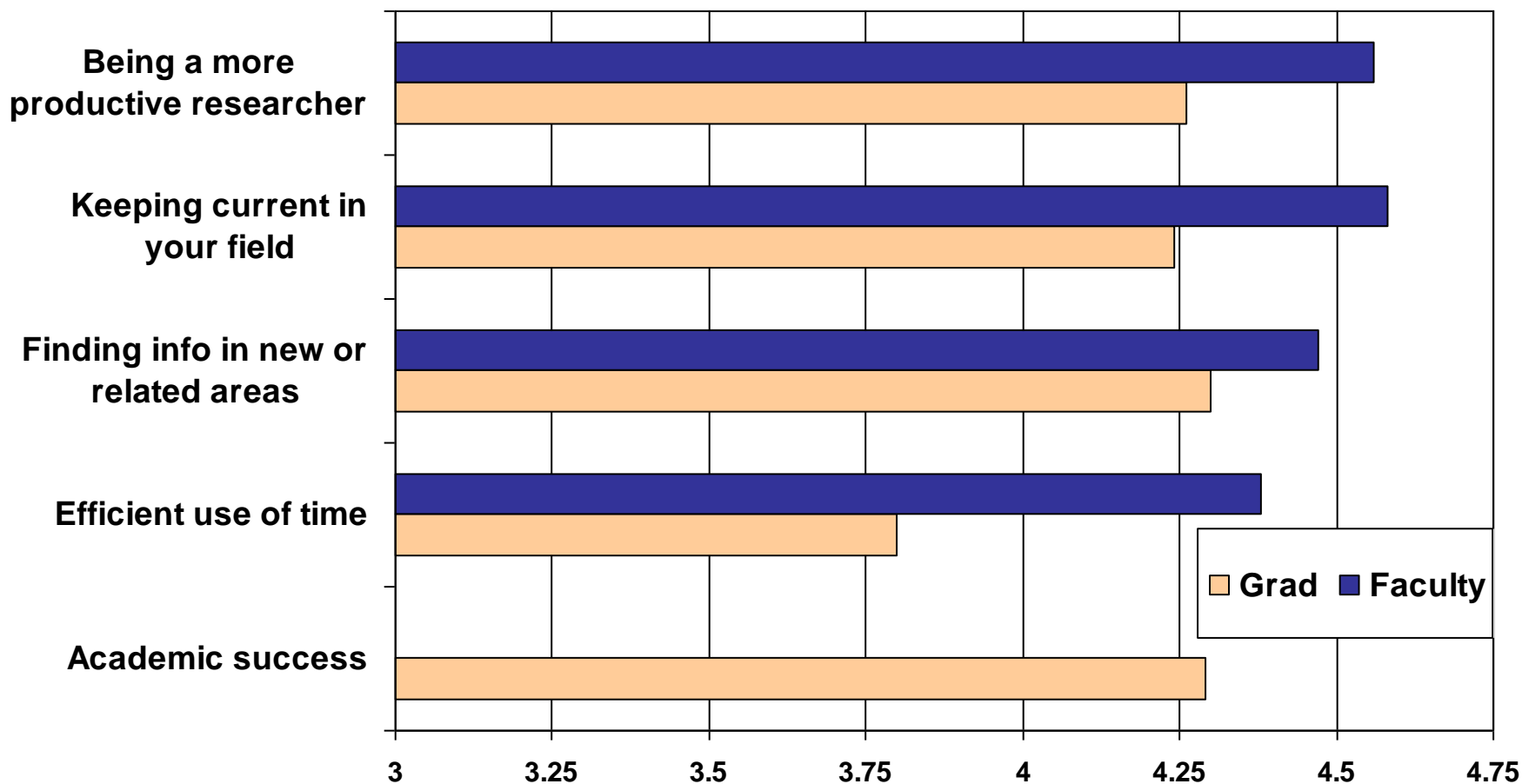| Health Sci 1998	Health Sci 2007	Science-Engin 1998	Science-Eng 2007	Hum-Soc Sci 1998	Hum-Soc Sci 2007
Less than Weekly 17%	<Weekly 5%	Less than Weekly 25%	<Weekly 9%	Less than Weekly 15%	<Weekly 9%
Remote Only 45%	Remote Only 87%	Remote Only 26%	Remote Only 72%	Remote Only 23%	Remote Only 47%
Remote & Visit 32%	Remote & Visit 7%	Remote & Visit 39%	Remote & Visit 17%	Remote & Visit 51%	Remote & Visit 42%
Visit Only 6%	0%	Visit Only 10%	1%	Visit Only 10%	1%

Libraries Contribution to: (Scale of 1 "Minor" to 5 "Major")

Horizontal bar chart comparing Grad and Faculty ratings.

- **Being a more productive researcher** — Faculty: ~4.56, Grad: ~4.25
- **Keeping current in your field** — Faculty: ~4.58, Grad: ~4.24
- **Finding info in new or related areas** — Faculty: ~4.47, Grad: ~4.30
- **Efficient use of time** — Faculty: ~4.38, Grad: ~3.80
- **Academic success** — Grad: ~4.29

Legend: Grad, Faculty
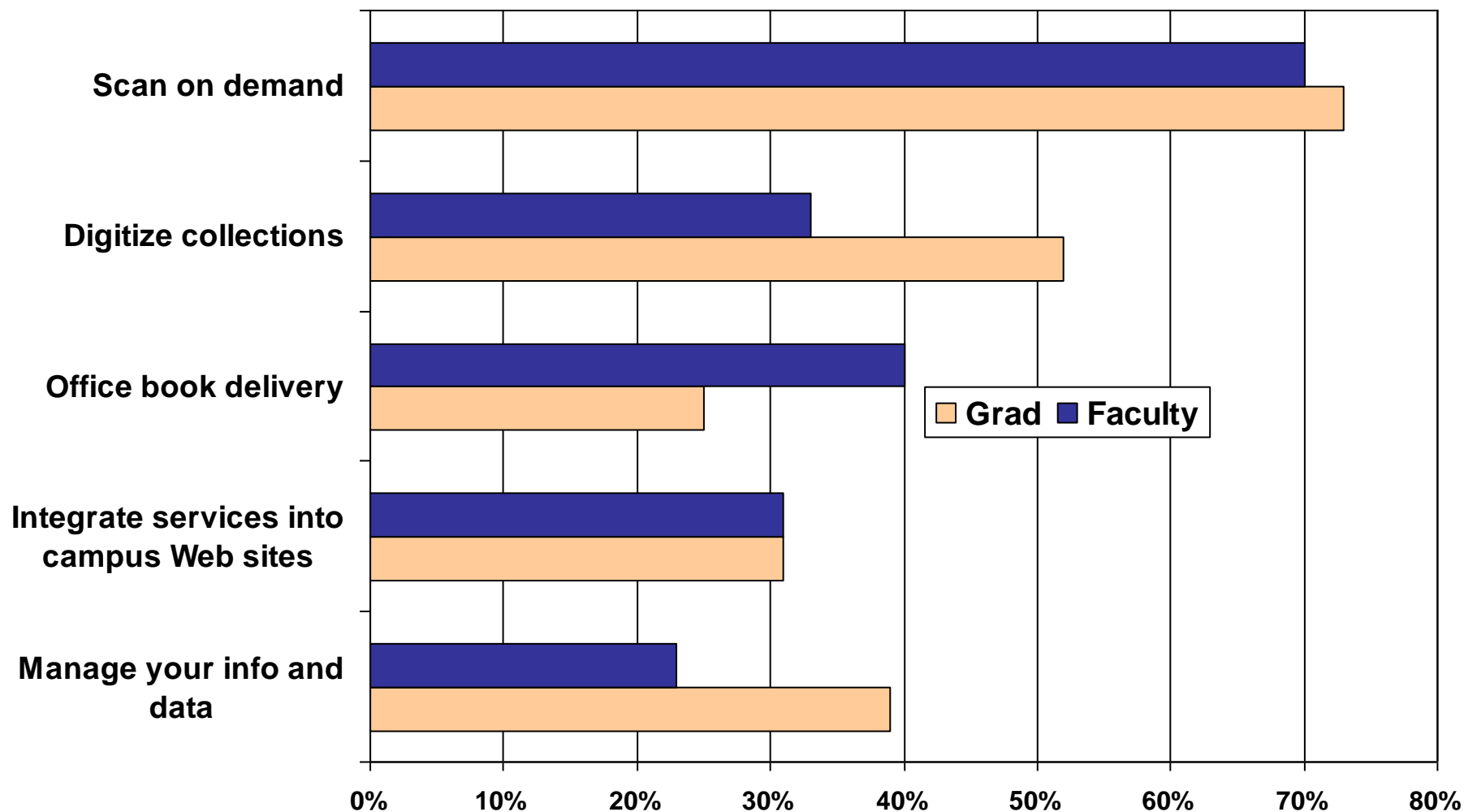
X-axis: 3, 3.25, 3.5, 3.75, 4, 4.25, 4.5, 4.75

Libraries Contribution to Your Being a More Productive Researcher (Scale of 1 "Minor" to 5 "Major")
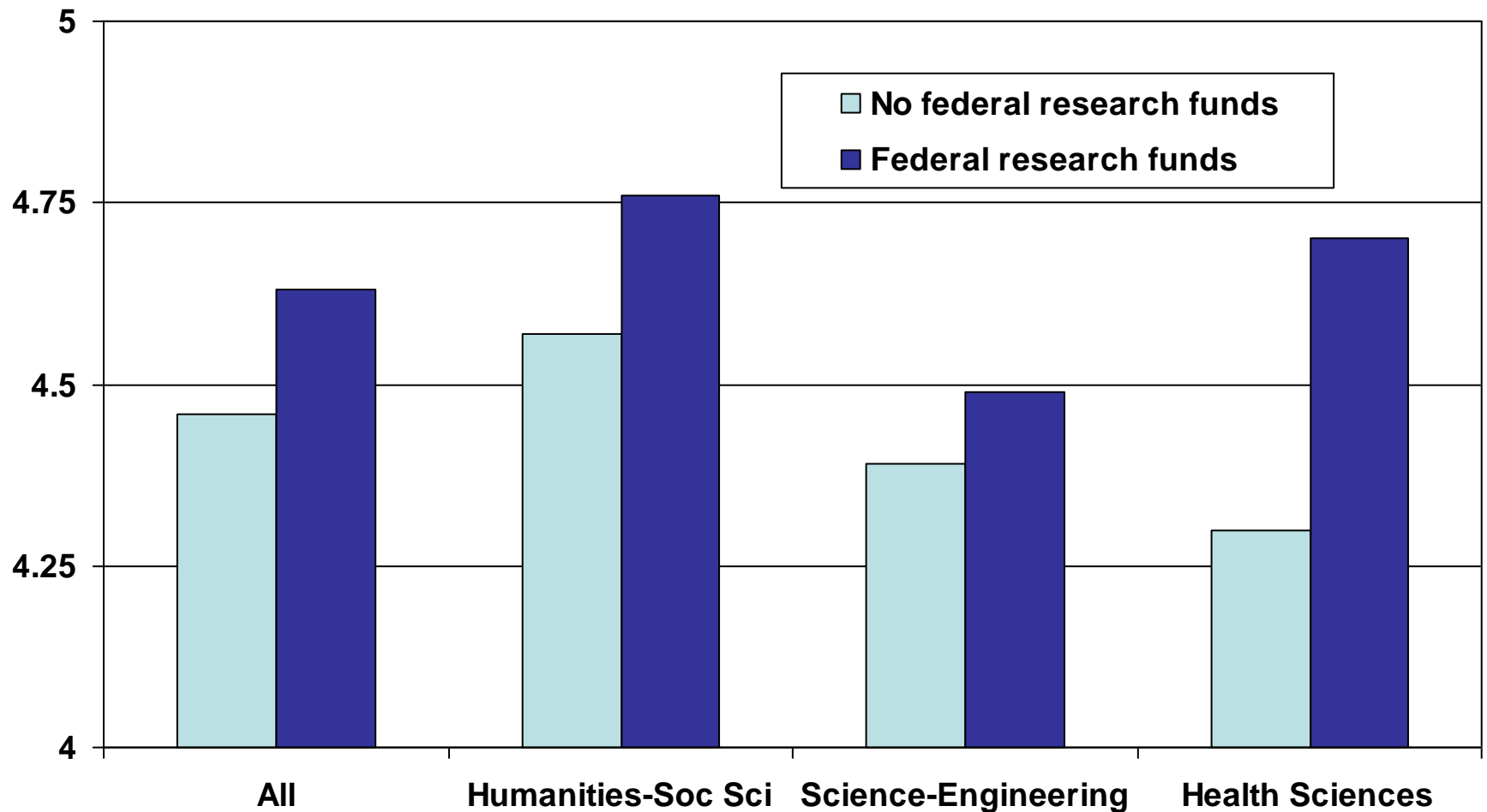
Usefulness of New/Expanded Services
Faculty and Grad (% responding yes for each service)

Horizontal bar chart comparing Grad and Faculty responses:

- **Scan on demand**: Grad ~73%, Faculty ~70%
- **Digitize collections**: Grad ~52%, Faculty ~33%
- **Office book delivery**: Grad ~25%, Faculty ~40%
- **Integrate services into campus Web sites**: Grad ~31%, Faculty ~31%
- **Manage your info and data**: Grad ~39%, Faculty ~23%

Legend: Grad, Faculty

X-axis: 0% to 80%

Triennial Survey Follow-Up
Initial Actions

- Probe deeper on specific library contributions to research and student academic success using qualitative methods
  - Interviews/focus groups beginning October 2007
- Develop plan to deliver "print" content to faculty & grad students in their format of choice and in their space
  - Pilot test "scan on demand" to begin October 2007
- Strengthen our librarian liaison efforts to better understand and support research in their areas
  - Developing standarized toolkit for assessing library connection to research enterprise

Our Challenge:
Maintaining High Value, High Satisfaction

UW Faculty Library Satisfaction 1995-2007