I created Five Pages at the University of Washington School of Music Computer Center in 1995 with the invaluable technical assistance of Kris Falk. It consists of five pages of computer graphics which are interpreted by the clarinetists in various manners according to the position of trigger lines. The trigger lines move across each page, sometimes forward and sometimes backward, at various speeds. One player follows the red trigger, the other the yellow. The pitches are indicated by colored stripes. Sharps are represented by red stripes, flats by blue, and Naturals by green. Intensity of pitch is represented by intensity of color. The live electronic part is generated simultaneously in real-time by the same program, in the Max environment, that generates the projected graphic score.

William O. Smith was born in Sacramento, California in 1926. He studied at Juilliard, Mills College, the Paris Conservatory and the University of California. His principal composition teachers were Darius Milhaud and Roger Sessions. He has received many awards and honors including the Prix de Paris, the Prix de Rome, two Guggenheim fellowships and grants from the National Endowment of the Arts and the American Academy of Arts and Letters. His music has been published by Universal, Oxford University Press, Shall-U-Mo, Edi-Pan, MJQ Music and Ravenna Editions. It has been recorded on Columbia, Fantasy, Edi-Pan, New World, Contemporary, CRI and Crystal Records. A pioneer in the development of new clarinet sonorities he is also a jazz performer frequently appearing with the Dave Brubeck Quartet. Currently he is Professor Emeritus at the University of Washington where he teaches composition and co-directs the Contemporary Group.

Life Study #4 for computer-realized sound is one of a series of pieces which might be described as "aural cinema". Much of what is heard was derived from "ready-made" recordings, although some of what is heard is not what it seems to be and some sounds are entirely synthetic. Although I am presenting sounds in these works which are at times directly recognizable and therefore come with embedded meanings, they are presented through a "lens" which puts these sound images into a context of my own making. There are no "stories" or programs in these works, but there is a sense of narrative which in Life Study #4 is colored by a sense of separateness or aloneness. There are juxtapositions of a horse galloping, crows cawing, waves of white noise, human and other non-human sounds, haunted by a coldly synthetic drone which appears and disappears several times. Later in the work a simple flute-like sound is interrupted by a burst of noise followed by footsteps which "walk in place" (getting neither closer to nor farther
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from the listeners' perspective). A wide array of signal processing techniques were used in this work: filtering, time-stretching, phase vocoder analysis/synthesis, distortion, and others. The piece was composed primarily with the Csound synthesis language. *Life Study #4* was commissioned by Swedish National Radio and was composed in 1995.

Richard Karpen is a professor at the School of Music at the University of Washington where he has been teaching composition and computer music since 1989. He is also Director of both the Center for Advanced Research Technology in the Arts and Humanities (CARTAH), and the School of Music Computer Center (SMCC). Karpen's works are widely performed in the U.S. and internationally. He has been the recipient of numerous awards, and grants including those from the NEA, the ASCAP Foundation, and the Bourges Contest. Fellowships and grants for extended visits abroad include a Fulbright Fellowship to Italy, Stanford University's *Prix de Paris*, and a Leverhulme Visiting Fellowship to the United Kingdom. He received a doctorate in composition from Stanford University, where he also worked at the Center for Computer Research in Music and Acoustics (CCRMA). He is a native of New York where he studied composition with Charles Dodge, Gheorghe Costinescu, and Morton Subotnick. His compositions have been recorded on CD by Le Chant du Monde, Wergo, Centaur, and Neuma.

To enthrall is to hold captive; "thral" is an old word for slave. Beauty Enthralled consists of two musical layers which stand in a figure/ground relationship to one another. The harp provides the figure against the long, drawn out harmonic sequence forming the ground. Since the pitches of which the harmonic sequence is composed are themselves not tuned according to the conventional 12-note equal-tempered system, the harp must be retuned if it is to fit properly with the background. The background is synthesized from a very large collection of very short samples from my own viola. It was assembled on a computer and is played from a CD. Beauty Enthralled was written for and is dedicated to Pamela Vokolek.

Rick Bidlack currently lives in Seattle with his fiancée and two cats. His works for solo instruments and ensembles, with and without electronics, have been heard in Europe, Japan and South America as well as in the US and Canada. He also works actively with other media, having scored several short films, served as sound designer for several theatrical productions, and constructed the interactive soundtracks of several immersive virtual reality installations. He is the violist and founder of the OK String Quartet, which performs in Seattle.

Vim was created using granular synthesis techniques almost exclusively. (Csound's fof generator was used for this.) Many of the particular techniques used explore continuously changing spectral states. All of Vim's sounds were synthesized in the SMCC. This work's ideas move along a continuum of rhythmic and linear gestures which are sometimes discrete and sometimes fused musical elements. Formally, this piece is an exploration of a concept which expands from beginning to end. Along the way, however, this direct motion is mitigated and circumvented by contrary impulses. On a less analytic or technical level, this work suggests energy, and the feeling of embarking upon something new and unexpected.

Elizabeth Hoffman, a composer of electroacoustic and acoustic music, will complete her DMA at the University of Washington this year. She holds degrees from SUNY Stony Brook and Swarthmore College. She has studied with Diane Thomas, Richard Karpen, Bulent Arel, and Gerald Levinson. Recent awards include prizes from the Prix Ars Electronica and Bourges Competitions, and a resulting Residency at the Electronic Music Studio of the Musik-Akademie der Stadt Basel. Hoffman's electroacoustic works are computer-generated pieces for solo tape and tape and instruments. They have received performances in the USA, Canada, and Europe at Festivals such as Synthes '95, ICMC '95, and the Annual Electro-Acoustic Music Concerts at the University of Washington and SUNY Stony Brook, New York. Commissions include a chamber opera and a cappella vocal works, premiered in Seattle. Other large-scale instrumental works include a piece written for the Saxophone Orchestra directed by Sigurd Rascher.

Swansongs (1994, cello and tape) is a three movement work that focuses on the lyrical nature of the cello. The first movement unfolds in a declamatory, quasi-improvisatory manner. The tape music was made by processing prerecorded cello harmonics and bow noise. The second movement presents a dialog between the high and low registers of the cello. The tape serves as a resonator for the melodic gestures presented in the cello's high register. The last song is a nine voice contrapuntal aria. The recorded voices move in a highly restricted fashion while the cello is free to explore its entire range. In addition to the slow and reflective in nature of each song, the three movements also share a common source chord built from perfect fifths (the tuning interval of the cello) stacked at half-step intervals: The fifth, half-step, minor sixth/major third hold special melodic and harmonic significance for the composition, albeit in different weights and measures in the three movements. The songs are played without pause. Swansongs was composed in Common Music, a software environment for music composition.
developed by the composer at the Zentrum fuer Kunst und Medientechnologie in Karlsruhe, Germany.

Heinrich Taube, b. 1953, is a professor of composition at the University of Illinois, where he is active as a composer, software designer and researcher in the field of music representation. He has been composing electroacoustic music since 1975, when he first studied computer music with John Chowning at CCRMA as a Stanford undergraduate. Since receiving his PhD in music composition from The University of Iowa he has taught music and has held several research positions in the software industry. He is the author of the Common Music software environment for computer based music composition.

*for john coltrane* was written between June and September of 1995 at the University of Washington School of Music Computer Center. Systems used to realize the piece include a NeXT Workstation, two PowerPC Macintosches, and an SGI Indy system. Both the title and opening melody of the piece reference another tenor sax player and composer of the 1960's, Albert Ayler. Both he and John Coltrane has been of immense influence on me both personally and as a musician, and this piece was written as a double-homage.

Donald Ankney is a studying composition at the University of Washington, where he has worked with both Richard Karpen and Bright Sheng. Ankney's music can be consistently heard throughout the Seattle area. Two recent pieces, Allusions (1995) and INCIDENTAL MUSIC III (1994) were premiered at the Seattle Opera House in conjunction with the Seattle Youth Symphony Orchestra. His music can also occasionally be heard at various art galleries, coffee houses, and other independent music venues throughout Seattle. A recital of his oboe music is scheduled next fall at Northwestern University. As a composer, Ankney works primarily in an electronic medium, having produced several solo electronic pieces, including Evolution (1993), INCIDENTAL MUSIC III, and Parting Tracks (1994). Most recently, however, his focus has been towards integrating the absolute sonic control permitted by studio electronics with the spontaneity of expression created by live musicians.