Silicon Valley Center

- *Natural Sciences:*

  2.4 Silicon Valley Center

  Faculty members in the Natural Sciences have been actively engaged in discussions about prospective opportunities at the Silicon Valley Center. Many departments have identified potential directions in research and instruction. The appropriateness of those directions will depend on the eventual definition of the Center's educational and research role.

  Astronomy and Astrophysics envisions a research related role leveraged by their interaction with NASA Ames and the SETI Institute. Several faculty in Earth Sciences, in collaboration with colleagues in Ocean Sciences and Ecology and Evolutionary Biology, have developed two ideas for the Center: a Geobiology program and a Center for Remote Sensing of the Environment. Both of these proposals have potentially strong ties to interests of the Center's other partners, particularly NASA Ames. Environmental Toxicology intends to be actively involved in three areas: environmental toxicology graduate curriculum and internships; pharmacology undergraduate and graduate curriculum and internships; and remote sensing and computer modeling (of contaminants).

  The Mathematics Department proposes to establish a small working group of researchers dedicated both to discrete mathematics (mathematical theory concerned with the processing and understanding of discrete mathematical systems and data sets, including the combinatorial and mathematical side of Information Sciences) and to improving the knowledge base through course offerings. This area is not strongly represented by Bay Area universities nor currently represented well at UCSC. Hence, there is an opportunity to develop something unique that would be valuable to both education and industry and that has outstanding funding opportunities.

  The Physics Department has considered locating part of the Applied Physics program at the Center, possibly an internship quarter for students if it could be combined with a teaching program. A masters and doctoral program in instrumentation might benefit from being located in Silicon Valley, though this would represent a major undertaking by one or more senior faculty.

- *Engineering:*

  Bioinformatics and Bioengineering. Eight faculty positions are planned to support the growth and development of these programs. Originally cast as biomolecular engineering, the School now envisions a department of bioengineering that houses both the bioinformatics and biomolecular engineering programs and their faculty. These programs plan to have a strong presence in the Silicon Valley Center.

Software Engineering. The School is in the third year of a five-year implementation plan for software engineering. Four of the eight positions planned for the program have been authorized in the last two years. We anticipate completing faculty hiring for the program in 2004-05, which coincides with the first cohort of graduate students. Software engineering is an important component of our Silicon Valley Center plans.

Engineering Management. Engineering management is the School's next priority after software engineering, and we are prepared to recruit a senior leader to begin implementing the program. Like software engineering, we envision this program as a critical aspect of our involvement with the Silicon Valley Center. A total of four faculty are planned for the program, with potential for growth from enrollments at the Silicon Valley Center.

Silicon Valley Center. The engineering management and software engineering graduate programs remain high priorities for the School's on-campus programs, and we also consider them key components of the Silicon Valley Center's academic plan. There is great demand for engineers and engineering managers among Bay Area industries. The software engineering and engineering management programs cater to working professionals who want to update and augment their skills. As such, the programs will attract more working students if they can be easily accessed. If we offer these programs at the Silicon Valley Center, we can achieve two goals: 1) we make pertinent graduate study more convenient to professionals who live and work in Santa Clara County, and 2) we increase the campus' visibility in the process. As students explore the educational opportunities at the Silicon Valley Center they will learn more about the programs offered on campus and possibly choose to pursue doctoral study. The School anticipates the Center will uncover more opportunities to further our goals – biotechnology and statistical consulting center are additional strong possibilities. Many of NASA's goals match our research vision in IT/BT/NT as well. We see many opportunities in the Silicon Valley Center and we look forward to leading the campus's efforts to bring UCSC to Silicon Valley.

Pacific Rim Roundtable for Technology and Society. The regional advantage of the Pacific Rim will continue to be dominant in the new millennium in which technology must be developed in the interest of society and the environment. A Roundtable consortium to discuss and lead technology and energy resource development in harmony with society and environment would well serve the Pacific Rim. This program will be hosted through our Engineering Management program and will strongly resonate with and piggyback on UC's CISI initiatives for the Center for IT Research in the Interest of Society (CITRIS) and QB3. This activity will also serve as an important gateway for UCSC to the Silicon Valley region and Pacific Rim countries including Japan, China, Korea, Singapore, and Taiwan among others. Both the Social Science and Natural Science Divisions can be significant partners in this initiative.

Summer Session. The School is committed to participating in year-round operations, and we have discussed several possibilities to meet this charge. The Silicon Valley Center presents opportunities to attract students returning home to the Silicon Valley region for summer break. We might also offer courses for transfer students so they are farther along in their studies when they matriculate. Through our discussions, we realize the need for an academic coordinator to assist with the planning and implementation of a summer session, and we request support for this position, as well as additional resources to address faculty compensation issues.

Funding for Staff. … New initiatives also necessitate additional staff resources. Year-round operations, the decentralization of graduate admissions, and our involvement in the Silicon Valley Center will increase our workload, and the School is requesting assistance in meeting these staffing needs.

- *Arts:*

6. Silicon Valley Center:

More than 30% of the entire nation's digital technology and media companies are based in California. The Bay Area, alone, accounts for over 25% of all jobs in such fields. The numbers, statewide, continue to grow rapidly as entrepreneurial R&D-driven firms advance new applications for digital imaging technologies. At the same time, California industries increasingly depend upon innovative applications of digital media technologies. The opportunities and needs for research partnerships that advance the frontiers of digital media are both immediate and substantial.

We have ambitious, but realizable aspirations to develop a significant instructional and research presence at SVC. These initiatives, still in gestation, can be summarized as follows:

6a. We propose to scale up the Digital Arts/New Media M.F.A. initiative, from 6 to 10 faculty FTE, from 30 to 50 students, and to accelerate its implementation. We could offer the degree concurrently at both the UCSC main campus and SVC, with all faculty resources being held in our home departments, but periodically assigned residence and teaching/research responsibilities at SVC. We are certain that an M.F.A. in DA/NM would be of enormous value and eagerly sought after (the digital-media M.A. at Hayward State is inundated with applicants, and opening satellite programs in China and the Philippines). The DA/NM M.F.A. is not exclusively an arts proposal. It is a collaborative effort between the Arts Division and the School of Engineering, with SOE voting membership on the six-member DA/NM Executive Committee. DA/NM is a functioning example of a faculty-group ("graduate group") overseeing the development of a new interdisciplinary graduate program. It exerts control over resources but does not hold ladder FTE; all faculty resources, including ladder-rank provisions, are lodged in departments that are contractually bound to provide courses and service to the DA/NM curriculum under charter agreements. We believe our DA/NM momentum is sufficient to carry it "over the hill" as soon as facilities are available there.

6b. We propose to offer both graduate and undergraduate instruction through the Film and Digital Media Department and the Music Department at SVC. Film and Digital Media programs, at both the undergraduate and graduate level, would undoubtedly prove very attractive to SVC area populations. The Music Department's strengths in algorithmic composition, electronic music synthesis, and in music cognition are an obvious "fit" with the potentials of SVC.

6c. We hope to establish a digital academic/industry Institute, a "think tank," where digital artists and researchers from throughout the UC system and Silicon Valley digital music and imaging industries, can come together in a uniquely exciting research

environment. Access to the extraordinary scientific and industrial assets of the SVC provides UCSC with an opportunity for an Institute for Digital Arts that could not be duplicated by any other university or school of the arts. While we do not intend to model our effort on the MIT Media Lab (which has several characteristics that we want to avoid), it is still helpful to imagine the potential of a "Media -Lab West" in trying to envision what we propose.

6d. We will invite the multi-campus "UC Digital" MRG (which is developing a multi-campus digital-arts Ph.D. with active encouragement from UCOP) to locate its physical headquarters at SVC. UC Digital is in turn affiliated with the multi-campus Digital Cultures MRG. Both these MRGs received UCOP funding for the next five years. UCSC could thus become the gateway campus for a system-wide array of digital-arts graduate programs and research activities, analogous to the relationship between UCSC and the Lick Observatory.

In relationship to these SVC initiatives, we wish to state emphatically that it is not our intention to be a training ground to satisfy Silicon Valley's appetite for digitally-adept employees. Rather, we intend to produce artist-theoreticians who will push the frontiers of creativity and technology to become leaders in technological and artistic innovation.

Accountability Measure: We will produce academic plans for SVC by Dec. 2001.

10. Fund Development … We intend to increase our fund-raising efforts and targets. As our SVC initiatives mature, and our Film and Digital Media programs expand, we expect to encounter a rich vein of corporate support for them. And by 2010-11, we expect to have raised sufficient funds through a capital campaign to build a Museum/Gallery (Campus Visual Arts Center) that will serve the entire campus as well as the local community.

Accountability Measures: We will meet or exceed the fund development goals set by University Relations. We will make measurable progress towards the capital campaign target for a campus Museum/Gallery.

- *Social Sciences:*

  Antropology: *… Silicon Valley Regional Center:* The proposed new faculty member studying science and technology would provide an opportunity for linkage with the Silicon Valley Regional Center.

  Community Studies: … *Summer Quarter and Silicon Valley Regional Center:* Community Studies already operates a year-round program, with 88 majors on field study enrolled in summer 2000. For a state-funded summer quarter, Community Studies would expand its course offerings, principally in conjunction with a presence at the new Silicon Valley Regional Center. At SVRC, Community Studies would develop a new focus on social justice in the new economy. Using a part-time enrollment model, the program would target minorities and working adults enrolled at community colleges. The department would refocus other courses around a Silicon Valley theme as well.

Economics: … Summer Quarter and Silicon Valley Regional Center: For a state -funded summer quarter, Economics would expand course offerings and involve more ladder faculty in teaching. The department offers more than half of the core courses offered during the regular year during summer as well. The department also would consider offering an intensive summer program in advanced international economics directed toward current or prospective graduate students in the United States. For the Silicon Valley Regional Center, the department would expand outreach to corporations and extend teaching efforts while maintaining a firm base on the Santa Cruz campus.

Education: … Summer Quarter and Silicon Valley Regional Center: The Education Department is fully involved already in summer teaching, as the combined program that leads to a master's degree and teaching credential enrolls students for a total of 15 months, including two summers. The MASE program would develop and grow at the Silicon Valley Regional Center. In addition, the New Teacher Center already has operations in Silicon Valley.

Sociology: … Summer Quarter and Silicon Valley Regional Center: The Sociology Department is interested in offering Sociology 15, World Sociology, in the summer at the Silicon Valley Regional Center. Faculty would conduct research at SVRC, as the new economy in Silicon Valley has raised a variety of sociological issues. In addition, the department would like to place students in field-studies positions in Silicon Valley, perhaps with an on-site field-placement coordinator.

Master's Program in Social Policy and Public Advocacy. Faculty in the Division of Social Sciences are developing a proposal for a master's program in social policy and public advocacy. The proposed program would educate students to "solve problems in society rather than to manage them." Our faculty observe that many people employed in activist or organizer roles need training in thinking creatively about policy. They must understand how to analyze the effects of policy on people, and they need to understand the attitudes and beliefs that predict support for policies. The proposed program would provide them with this training. Our faculty also note a trend toward regional studies. Regions are emerging as foci of research. For example, in Silicon Valley, prominent issues exist concerning quality of life, environmental protection, and effects of technology. This policy program would offer students an opportunity to focus on a region. In part to appeal to practitioners, the program would offer courses at the proposed Silicon Valley Regional Center. The program also would establish partnerships with community organizations, which often need a research component in order to be eligible for grants.

Space. … Our projected growth through 2010–11 requires 35,000 ASF to meet non-laboratory growth needs and an additional 35,000 ASF for laboratory needs. Some of this space requirement can be met off-campus at the Silicon Valley Regional Center, but most will be needed on-campus.

- *Humanities:*

Silicon Valley Center. The Division of Humanities supports the development of the Silicon Valley Center (SVC) and is prepared to be active in it. In the absence of a campus-wide set of objectives for the Center, the division can only record its readiness to

explore the venue as a site for instruction and research. At present, the division can envision instruction in Languages, in ethics, and in language and technology on the site. It is also expected that the proposed department of Science, Medicine, and Technology Studies would want to have a significant presence there, especially for research on the technologies created in Silicon Valley. This interest may include the creation of an archive where firms will be encouraged to deposit their own historical documents and artifacts. Among divisional programs under consideration are the following:

- Linguistics for Industry: The Department of Linguistics is considering an initiative to offer a series of four courses designed to provide a foundation in Linguistics for professionals in high-tech industries dealing with language. The courses would provide introductions, geared to the interests of the high-tech professional (whether manager, programmer, designers, etc) in phonetics and phonology, syntax, semantics and pragmatics.

- Faculty in the division are exploring the possibility of developing a program that would grant an M.A. in Modernism, Culture and Technology (MCT). The program would help cultivate higher levels of aesthetic and ethical reflection in a wide range of "knowledge workers" in today's most forward looking economic sectors, from designers to team leaders to entrepreneurs concerned with innovative products and new thinking about work.

- The Writing Program is considering a program that would grant a graduate certificate or M.A. in the teaching of writing as well as an MAS program for professional journalists.

Summer Term. … The division believes that as early as 2002-03 it could generate an additional 100 student FTE during summer session.

- *Writing Program.* The Writing Program has expressed a keen interest in providing Writing 1 as well as Subject A instruction during the summer quarter (subject to discussions with the AFT). … This proposed instruction might be delivered in one or more innovative ways. For example, this instruction might be delivered in Silicon Valley as part of an outreach effort or as an in-residence instructional program on campus similar to the summer language institute offered in the past at UCSC. …

- *Library:*

Pre-Expansion Growth (Silicon Valley Center): The current vision for the SVC rightfully includes provision for a coordinated and shared library near the center of the NASA Research Park. This intellectual gathering place for the UCSC community at SVC would provide single and group study areas, computers for accessing electronic data, paper collections as appropriate to the academic program, and the other usual services found in a good small branch library. One important function would be to act as the "portal" into other collections in the area, advising researchers on what is available nearby and instruction in accessing and using Web-based resources. To start such a library would require about 4 FTE, with staffing expanding as necessary (for example, were the library to serve other SVC communities such as Carnegie-Mellon students and faculty, or were it to be open evening hours to accommodate students attending late-day

classes). This FTE estimate does not include provision of instructional media services staff for classroom support, should such staff come under the management of the University Library. It also assumes that the method of transporting library material between Santa Cruz and SVC will be funded by an agency other than the library.

- *Student Affairs:*

  Silicon Valley Center. Though the nature of the academic programs at the center have not yet been specified, we will assume that students will require specialized services delivered on-site, as well as the ability to remotely access numerous existing campus services. As an example of traditional service delivery, we plan to expand our existing internship services to accommodate the academic and career needs of students at the center. Our goal is to have a Career and Internship Services office at the center in 2002. However, using the planning document, Future Delivery of Student Services, special planning efforts are underway to explore options focusing on non-traditional methods of delivering service to our students such as:

  - Remote service delivery (using video-conferencing technology)
  - Access to pertinent on-line student information
  - Training some individuals to provide a broad range of services that span our usual organizational boundaries. For example, several generalists stationed at the Silicon Valley Center will provide course registration, financial aid services, career development, and internship placements
  - Similar to what is being developed in the downtown Santa Cruz site, we will be fostering partnerships with the goal of developing an off-campus core for students, faculty and staff. At this core – we will be working collaborative ly with partners from the campus to identify the scope of services and methodologies for delivery so that users may access campus services and activities at the Silicon Valley site

- *Business and Administrative Services:*

  Anticipated Areas for Demand for BAS Services in the Next Decade . Providing administrative and infrastructure support for remote locations, such as the Silicon Valley Center and the MBEST Center.

  Funding strategies. Enrollment growth occurs against a back-drop of complex relationships among the university and governmental entities, and the external community we serve. In the past several years, we have seen an increase in university partnerships that provide new opportunities for research, collaboration, and student support. The Silicon Valley Center and MBEST are examples of new university centers that capitalize on such partnerships. Additional off-campus university operations such as these are likely to emerge in the next ten years. The success of these partnerships will require the campus to be flexible in the way it funds planning and creative in the way it collaborates with external entities. These activities come at an increased and often underestimated cost and currently, the level of resources provided to BAS to support these efforts is insufficient to cover new activities of this kind.

- *University Relations:*

  Increased campus funding for University Relations is necessary in order to:

  …
  - **Strengthen communication with constituents on and off campus** (especially using new and emerging technologies) to increase awareness of UCSC's accomplishments and benefits. This awareness translates directly into increased financial support for academic programs; enhanced faculty, staff, and student recruitment; community and legislative support for UCSC funding and other priorities; and expanded regional outreach, including the Silicon Valley Center and operations in Monterey County.
  - **Expand and enhance relationships with constituents** to broaden the base of financial and other types of support for UCSC. University Relations fosters relationships with individual, business, and foundation donors; UCSC alumni, students, and parents; campus volunteer groups (especially the UC Santa Cruz Foundation); community members and organizations; government, business, and industry; K–14 and higher education; and new constituencies emerging through the campus's expansion in the Monterey Bay and Silicon Valley areas. Enlarging UCSC's base of active constituent support results in increased private gifts, informed legislative advocacy, expanded participation in campus events, crucial support for campus growth priorities, and enhanced appreciation for the value and benefits that UCSC brings to the region.

  …

  Effective communication—both to our external constituencies and within the UCSC campus—is essential if University Relations is to provide maximum support for expanded UCSC teaching, research, and public service. Through the mass media, campus publications, and direct communication to constituencies, University Relations keeps UCSC in the public eye, resulting in increased public awareness, understanding, and appreciation for the benefits provided by UCSC.

  UR's communication programs will need to expand over the next ten years in order to:

  …
  - **Expand communication/informational support** for the Silicon Valley Center
  …