# GRADUATE COUNCIL
# Annual Report 2010-2011

To the Academic Senate, Santa Cruz Division:

## Graduate Council Organization

Generally the Graduate Council (GC) met bi-weekly during the academic year, with a total of 17 regularly scheduled meetings over the course of the year. An additional ad hoc meeting took place on June 9th to review the Master's in Theater Arts proposal. The voting membership of the Council comprised: Robert Fairlie (F, S), Julie Guthman, Jorge Hankamer, Kimberly Jannarone, Robert Johnson, Athanasios Kottas, Neoklis Polyzotis, Catherine Ramirez, Carol Shennan, Megan Thomas (W), with Sue Carter (Chair), and Vice Provost and Dean of Graduate Studies Tyrus Miller sitting *ex officio*. Meetings were also attended by Stephanie Casher of the Academic Senate and Jim Moore of the Graduate Division; Graduate Student Association Representatives Jeff Sanceri, Walter Thomas, and Alice Ye; and LAUC Representative Paul Machlis. Guests included EVC Alison Galloway, IVPAA Herbie Lee, and Lynda Rogers, Interim Dean of University Extension.

In her capacity as Chair, Sue Carter served as representative to the systemwide Coordinating Council on Graduate Affairs (CCGA), and the Senate Executive Committee (SEC). Athanasios Kottas served as Vice-Chair.

Several subcommittees met separately, both throughout and at particular moments in the year. The standing Subcommittee on Course Approvals included Robert Johnson, Catherine Ramirez, and Carol Shennan. During winter quarter, Sue Carter, Jorge Hankamer, Kimberly Jannarone and Athanasios Kottas evaluated applications for the Cota-Robles Fellowship. In the spring, Sue Carter, Julie Guthman, Jorge Hankamer, and Neokis Polyzotis reviewed the President's and Chancellor's Dissertation Year Fellowship candidates.

Committee analyst Stephanie Casher provided invaluable support to the Council. She drafted all the agendas, minutes, annual report, routine reports, and provided valuable edits on all of the other documents coming out of GC. She also provided important background research and documentation on topics ranging from graduate groups to designated emphasis policies, which greatly improved GC's ability to make sound decisions. Finally, she was invaluable in assuring that GC completed all its business in a timely manner. In summary, her service to the committee was extraordinary.

## 1. New program proposals

In April 2011, Graduate Council approved the proposal for a new Ph.D. program in Latin American and Latino Studies (LALS).

In May 2011, Graduate Council recommended approval of a proposal to establish a combined Bachelor of Science (B.S.) and Master of Science (M.S.) program in Physics.

In June 2011, Graduate Council approved a proposal for a new Ph.D. program in Feminist Studies.

In June 2011, Graduate Council approved a proposal to establish a Master of Arts (M.A.) degree in Theater Arts.

Graduate Council also provided feedback on a preproposal for a Masters of Arts in Education with Teaching Credential, to be offered via UCSC Extension, and a preproposal for a MFA in Social and Environmental Practice in the Arts.

**2. Designated Emphasis Policy**

At the close of the 2008-09 academic year, Graduate Council drafted a new Designated Emphasis (DE) policy to replace the existing policy pertaining to Parenthetical Notations. Under the new policy, all programs wishing to offer a Designated Emphasis must establish a *single set of requirements for all students* regardless of their primary program of study. Any student who can satisfy the requirements is eligible to obtain a Designated Emphasis from any program.

During the 2010-11 academic year, Graduate Council approved three new proposals to offer a Designated Emphasis:

- Anthropology (approved 11/4/10)
- Sociology (approved 11/18/10)
- Film and Digital Media (approved 12/2/10)

In February 2011, Graduate Council also made the following modifications to the existing Designated Emphasis policy:

1) Require Ph.D. students to declare their intent to complete a Designated Emphasis on their Advancement to Candidacy form.
2) Outline the procedures for disestablishing a Designated Emphasis.
3) Extend the option of obtaining a Designated Emphasis to Master's students.

For a copy of the revised policy and complete list of programs offering a Designated Emphasis, see Appendix A.

**3. Graduate Program Changes**

- In October 2010, GC approved a request from the Politics Department to reduce from 4 to 3 the required number of 200-series core courses that students must take in order to earn the Ph.D. in politics
- In November 2010, GC approved the request from the Education Department to reduce the coursework from full-time (currently 12-14 units) to part-time (proposed 7-8 units) in the second summer.
- In May 2011, Graduate Council approved the request from the Computer Science Department to add a preliminary exam for CS Ph.D. students.
- In June, 2011, GC recommended approval of a request to change the name of the International Economics Ph.D. program from "International Economics Ph.D." to "Economics Ph.D."
- In June, 2011, GC approved a request from the Music Department to require students to take all core courses for a letter grade.

**4. Suspensions and Reinstatements**

In November 2010, the Graduate Council recommended approval of a request from the Economics Department to temporarily suspend admissions to the Applied Economics and Finance M.S. program, so that they could change the program to a 9-month professional program and charge professional degree supplemental tuition (PDST). In January 2011, Graduate Council approved a formal proposal for a 9-month Applied Economics and Finance M.S. Graduate Council approved a formal proposal for the Applied Economics and Finance M.S. to charge Professional Degree Supplemental Tuition (PDST) in April 2011.

In April 2011, Graduate Council received a request from Philosophy to lift the suspension of admissions to the graduate program. GC agreed that the department had addressed its previous concerns and voted to restart admissions to the Philosophy graduate program.

**5. Guidelines for Professional and Self-Supporting Degree Programs**

Professional graduate programs that charge supplemental tuition or self-supporting fees offer a mechanism for the campus to offer a greater range of graduate programs and to better service our students and the state. *These professional graduate programs are part-time or full-time degree-granting programs that intend to place their graduates into non-academic positions in industry, education, or government and adhere to the same standard of UC quality as academic-based programs.* While current UCOP guidelines fail to make a clear distinction between these programs in terms of the content and target audience, they do have very distinct differences. Upon approval of the Regents, professional programs can charge professional degree supplemental tuition (PDST) that is primarily returned to the division, department or interdisciplinary graduate group offering the program. A minimum of 33% of the PDST must be used to provide financial aid to students admitted to the program. The standard tuition and fees becomes part of central funds as with all other graduate programs.

Upon approval of the UC President, professional programs that are *self-supporting* charge a fee that is returned primarily to the program. Self-supporting programs do not currently have an implicit allocation for financial aid. The normal tuition and fees are not charged and therefore are not returned to the campus central funds.

In anticipation of the growing number of professional and self-supporting programs on our campus, in 2010-11 Graduate Council drafted general guidelines for professional graduate programs and self-supported courses through UNEX, to assist UCSC faculty who may want to propose such programs or convert existing programs to the Professional Degree program model. A copy of the guidelines can be found in Appendix B.

**6. Guidelines for Interdisciplinary Graduate Programs (IGP)**

UCSC has one of the lowest enrollments of graduate students, in terms of percentage of overall student enrollment, of any UC campus. In order to grow our graduate student programs, and enrollments, we need models for offering interdisciplinary graduate programs that do not rely on starting new departments. During the 2009-10 academic year, Graduate Council produced draft guidelines for “Interdisciplinary Graduate Programs,” with the goal of providing more options for faculty who wish to offer interdisciplinary programs, as well as guiding them through the

proposal-writing process. 2010-11's Graduate Council revisited these draft guidelines, identifying three different mechanisms for pursuing interdisciplinary graduate programs (IGP): ad hoc interdisciplinary doctoral programs, umbrella admissions programs, and interdisciplinary graduate groups. (See Appendix C)

Graduate Council met with IVPAA Herbie Lee twice during the year (in October 2010 and June 2011) to discuss the draft guidelines. The primary discussions focused around GC's recommendations that in certain circumstances, interdisciplinary graduate groups could be FTE-holding. To address concerns raised, GC recommended that graduate group members be allowed to hold temporary joint appointments. In June 2011, GC drafted guidelines for temporary joint appointments (in accordance with CAPM 417.220), and forwarded those recommendations to the VPAA and EVC.

**7. Narrative Evaluations and Grades for Graduate Students**

At the March 9, 2011 Senate Meeting, the Senate passed legislation proposed by Graduate Council to amend Section IV, Chapter 13 of Senate Regulations pertaining to graduate grading and transmission of records. The five changes include adding the option of +/- on grades A and B and + on grade C for graduate courses; giving graduate programs the option of requiring S/U or letter grades for any of their graduate courses; enabling official GPAs to be calculated for students who have letter grades for at least 25-units of graduate courses; making narrative evaluations instructor optional for graduate courses; and fixing a timeliness issue with regard to grade changes for graduate courses. All of these changes bring graduate grading policy more in-line with undergraduate grading policy, fix existing policy that is unenforceable and/or inconsistent, and provide additional options for graduate programs to effectively evaluate student performance in graduate courses.

On April 1, 2011, the Senate Office received a petition from twenty-nine faculty members requesting a mail ballot. A mail ballot was conducted, and the legislation passed. The new legislation can be viewed at: http://senate.ucsc.edu/manual/santacruz-division-manual/part-two-regulations/section-four-graduate-program/chapter-thirteen-gradingandrecords/index.html

**8. Academic Plan for Silicon Valley**

The offering of UCSC graduate programs and courses in Silicon Valley (SV) provides our campus with the unique ability to define a new direction that can meet the needs of a 21st century society. The diverse cultures and inventive spirit that defines Silicon Valley is unique in the world, providing an unprecedented opportunity for UCSC to achieve world stature as a leading institute for higher education by uniquely serving a constituency that has become the symbol of U.S. innovation. Pursuing such a venture also comes with the potential risk of undermining the reputation and resources of the main campus; therefore, any academic plan that moves forward for Silicon Valley must build upon both to be successful. It is in this light that GC drafted guidelines for an academic plan for Silicon Valley (See Appendix D). This draft, based on information GC gathered in November 2010, was meant to provide some initial information for the senate and administration to work together in drafting the final academic plan for SV.

**9. External Reviews**
Graduate Council also participated in the external reviews of several graduate programs. External Reviews conducted during 2010-11 included Applied Math and Statistics, Biomolecular Engineering, Chemistry and Biochemistry, Digital Arts and New Media (DANM), Earth & Planetary Sciences, and Linguistics. GC also responded to the draft charges for upcoming External Reviews in Music and Psychology.

**10. Administrative Transfers, Disestablishment proposals, & FTE Transfer requests**
GC spent a considerable amount of time discussing administrative transfers, disestablishment proposals, and FTE Transfer requests concerning Community Studies and American Studies. A better procedure would have saved a lot of time and frustration. Overall, we approved:

- Three FTE transfers out of the American Studies Department (to Literature, Anthropology, and LALS, respectively)
- One FTE transfer from Community Studies to Feminist Studies.
- The transfer of three faculty in Community Studies to the Film and Digital Media Department.
- The transfer of administrative oversight of the Social Documentation MA program from Community Studies to Film and Digital Media.

Graduate Council had particular concerns about the assumptions and long term viability of the Social Documentation graduate program in its transfer to the Arts Division. While some of these concerns were subsequently addressed, we requested that GC's significant remaining concerns be addressed in the 2011-2012 academic year. We approved the faculty transfers and administrative transfer with the expectation that the remaining issues are resolved.

**11. Other business**
Graduate Council also discussed and commented on several systemwide policies and discussed a number of other local issues, among them:

- Post-Employment Benefits Report (10/7/10)
- Downsizing Proposal (11/4/10)
- Funding Streams Proposal (1/27/11)
- CITRIS Review (1/27/11)
- Five-Year Perspectives (1/27/11)
- Child Care Task Force Report (3/10/11)
- Campus Personnel Policy: Postdoctoral Scholars Unit (4/21/11)
- UC Online Education Project (5/12/11)

At the request of Economics and AMS, who are interested in allowing Economics Ph.Ds to pursue a Master's in Statistics concurrently, Graduate Council discussed the campus policy on "Duplication of Higher Degrees." GC agreed that a student could be granted an exception to policy under the following conditions:

- The student has already obtained a Master's in their program of origin.
- The student has approval from both departments to obtain dual degrees.

Graduate Council wrote to the Graduate Division on 4/6/11, requesting that campus policy be updated.

Graduate Council also received a request from the Graduate Division to clarify the definition of "normative time." At the May 19, 2011 meeting, Graduate Council settled on the following definition:

> "Normative time is the elapsed calendar time in years that under normal circumstances will be needed to complete all requirements for the Ph.D. A one year extension may be granted if funding is available."

**12. Issues Carrying Over to 2011-12**
The Council identified the following issues carrying over into the next academic year:

- Finalize guidelines for Interdepartmental Graduate Programs (IGPs), i.e. Graduate Groups.
- Investigate revising campus personnel policies to include "Temporary Joint Appointments"
- Monitor graduate programs on the GC "watch list."
- Professional Schools and graduate education at SVI

Respectfully submitted,

**GRADUATE COUNCIL**
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October 19, 2011

# APPENDIX A

## Graduate Degree Annotations at UCSC

Approved by Graduate Council on December 3, 2009; Revised February 2011

*Effective December 15, 2009*

### Introduction

This document describes the two types of degree annotations available to graduate students at UCSC. It replaces and supersedes earlier policies and terminologies used in the *2008-2010 General Catalog* and before, and brings UCSC usage and practices into closer agreement with the rest of the University of California. In addition to describing the annotations, this document also explains how students fulfill the requirements for them, and how departments propose them to Graduate Council for approval.

The two types of annotations are called *concentrations* and *designated emphasis*. Broadly, these are as follows:

1) *Concentrations* denote areas of specialized curriculum, training, and research within a given department or degree-granting program.

2) *Designated Emphasis* denotes a broadening of training that comes from adding course work, training, and/or research work from an *external* department[1], degree-granting program, or cross-departmental grouping of faculty who together offer a designated emphasis. Example: a PhD in Literature with an Emphasis in Feminist Studies. In this case, the extra training to obtain the Emphasis is offered by the separate Feminist Studies Department, not Literature.

Note: Previously, the term parenthetical notation ("parentheticals") was used generically to describe both concentrations and emphases. However, this term was not clearly described or consistently applied. After December 15, 2009, the terms concentration and designated emphasis will be clearly distinguished, and the generic "parenthetical notation" will no longer be used.

The two new types of annotations are now further described.

### Concentrations

Concentrations are easier to manage since no additional coordination between departments and/or degree-granting programs is required. Graduate Council wishes to keep the paperwork and monitoring requirements of concentrations to a minimum. The elements of the concentration are as follows:

1) The requirements for a concentration are developed and defined within each degree-granting program.

[1] Departments that would like to offer a Designated Emphasis *internal* to their department may petition Graduate Council for an exception to policy.

2) Minimum requirements are a significant body of research work in the area of the concentration, a minimum number of courses (number to be determined by the degree-granting program), emphasis on the area of concentration in the qualifying exam, or a combination of these. As long as this rule is observed, the proposed concentration does not need to be reviewed and approved by Graduate Council.

3) The requirements to fulfill a concentration should not add additional degree requirements beyond those already in place to fulfill the basic degree. Any additional requirements would constitute a program revision and require additional review by the Graduate Council. In general, the development of concentrations within a program should be done within the parameters of the existing program requirements and thus not require Graduate Council review.

4) The decision to award a student the concentration will be made by the department chair, the faculty graduate director, or an appropriately constituted faculty committee drawn from the degree-granting program, according to departmental procedure.

5) The concentration is an informal annotation; no notation of it appears on the student's transcript or diploma. However the student will have the right to note the concentration in his/her curriculum vitae using the words "a degree in XXX with a concentration in YYY." The department may refer to the student's degree with the concentration noted, and writers of letters of reference may note the concentration when referring to the student's degree.

6) The responsibility for keeping records of students who have received concentrations rests with the degree-awarding department or program. No records of concentrations will be kept by the Registrar.

7) The availability of concentrations will be noted in each program's description in the *General Catalog*. Each concentration and its requirements will be described, and a summary of all concentrations will be given in the Fields of Study summary table at the beginning of the catalog. It is the responsibility of departments to review and update the catalog text pertaining to concentrations, so that current practice is officially recorded.

**Designated Emphasis**

A Designated Emphasis (DE) generally involves the cooperation of two degree-granting programs. The program that provides the courses and training in the subject of the emphasis is called the *offering program*, and these programs are said to *offer emphases*. A program whose students utilize the courses and training from the emphasis in its degree program is called the *coordinating program*, and these programs are said to *coordinate emphases*. In the example of Literature above, the program description could say, "Ph.D. students in Literature may wish to consider the designated emphases in x, y, z; students must have the designated emphasis approved by the graduate director / graduate committee as well as meet the requirements of the emphasis."

Designated Emphases are official UCSC credentials, and as such their requirements must be reviewed and approved by the Graduate Council. **To simplify the process, we henceforth require that all programs wishing to offer a designated emphasis will establish a single set of requirements for all students regardless of their primary program of study.** This uniformity of emphasis requirements for students in all coordinating departments is a major change that will reduce record-keeping and approvals. It differs from older practice, where each coordinating and each emphasis-offering department negotiated *separate agreements* with each other on the content of their joint "parenthetical notations."

The elements of a Designated Emphasis (DE) are as follows:

1) Requirements will typically include more than one of the following elements:

A. Course work in the offering program
B. Offering program faculty membership on qualifying or thesis committee
C. Significant writing, research, teaching, presentation, or production in the discipline of the offering program

2) The requirements for the DE will be set by the emphasis-offering department and designed to be generally applicable to students from any coordinating department.

3) Departments proposing a DE must explicitly address the resource implications of the proposed emphasis and include confirmation from the Divisional Dean of resource-neutrality or a commitment of resources to support the DE sustainably. The DE requirements and resource implications must be reviewed by Graduate Council for approval.

4) The coordinating department will approve student requests for the DE annotation through departmental graduate approval procedures, and the emphasis-offering department will certify completion of the DE requirements.

5) The DE is a formal credential, and records will be kept of it on the student's transcript in the Registrar's office and on the student's diploma. The words used will be "a degree awarded in XXX with an emphasis in YYY." The parenthetical notation will no longer be used.

6) The offering of DE programs will be noted in the *General Catalog.* The DE requirements will be specified under the offering program's description. Programs may wish to include in their catalogue descriptions the option of pursuing designated emphases, and point students towards suggested possible emphases, according to disciplinary affinity and program history.

7) Ph.D. students should declare their intent to complete a Designated Emphasis on their Advancement to Candidacy form. Any student who has declared intent should be allowed to complete the DE with an analogous set of requirements in accordance with the catalog description at the time the intent is declared.

8) A Designated Emphasis can be disestablished by vote of the offering faculty. Faculty in the offering program should take into account the needs of students who have declared intent in their disestablishment plans.

Any change to the approved requirements of a Designated Emphasis must be re-approved by the Graduate Council.

**Transition to the new requirements**
Current graduate students have "catalog rights," which are the right to graduate under the degree requirements and degree terminology that were outlined in any catalog from the time they enter, up to the time they graduate. Students who either cannot or do not wish to be covered by the new system have the right to invoke the previous requirements as they would have applied to them.

**Requests to offer a Designated Emphasis - Procedures** Departments and programs wishing to establish/offer a Designated Emphasis should submit the following documents to the Graduate Council for approval.

- Proposal for a Designated Emphasis, including a single set of requirements for all students regardless of their primary program of study. The proposal should be accompanied by a cover letter stating the rationale for offering the DE, and addressing the issue of resources required to run the DE. If no additional resources are required, this should be stated. If additional resources are required, they should be described, and the source of support for these resources should be identified. If Master's students are allowed to complete the DE, this should be clearly stated in the proposal, and the requirements should be achievable by Master's students.
- Letter of endorsement from the Divisional Dean, confirming resource-neutrality of the proposed DE, or a commitment of resources to support the DE sustainably.

The complete proposal should be forwarded to the Graduate Council, with a copy to the Vice Provost of Academic Affairs (VPAA).

Please direct any questions, comments, or requests to establish a Designated Emphasis to the Graduate Council Analyst, Stephanie Casher (scasher@ucsc.edu; 459-1317).

*Updated 2/1/11*

# Graduate Degree Annotations at UCSC

A *Designated Emphasis (DE)* denotes a broadening of training that comes from adding course work, training, and/or research work from an *external* department, degree-granting program, or cross-departmental grouping of faculty who together offer a designated emphasis. The following programs offer a Designated Emphasis:

- American Studies (http://americanstudies.ucsc.edu/graduate/ )
- Anthropology (http://anthro.ucsc.edu/graduate_program/ )
- Ecology and Evolutionary Biology (http://www.eeb.ucsc.edu/grad/programchanges.html#parenthetical )
- Education
- Environmental Studies (http://envs.ucsc.edu/graduate/DesignatedEmphasis.php )
- Feminist Studies (http://feministstudies.ucsc.edu/graduate/parenthetical.php )
- Film and Digital Media
- Latin American/Latino Studies (LALS) (http://lals.ucsc.edu/designated-emphasis/ )
- Literature (http://literature.ucsc.edu/graduate/LITDesignatedEmphasisApp.pdf )
- Philosophy
- Politics (http://politics.ucsc.edu/phD/notations.php )
- Robotics and Control (http://www.ce.ucsc.edu/node/50 )
- Sociology (http://sociology.ucsc.edu/graduate/designated_emphasis.php )
- Statistics (http://www.ams.ucsc.edu/academics/graduate )
- Visual Studies (http://havc.ucsc.edu/visual_studies_phd/parenthetical_notations )

**Please contact each department directly for their Designated Emphasis requirements.**

Note: Previously, the term parenthetical notation ("parentheticals") was used generically to describe both concentrations and emphases. However, this term was not clearly described or consistently applied. After December 15, 2009, the terms concentration and designated emphasis will be clearly distinguished, and the generic "parenthetical notation" will no longer be used.

*Please direct any questions, comments, or requests to establish a Designated Emphasis to the Graduate Council Analyst, Stephanie Casher (scasher@ucsc.edu; 459-1317).*

# APPENDIX B
# Graduate Council Guidelines for Self-supporting and Professional Degree Supplemental Tuition Programs
**June 2011**

***Executive Summary:***

Professional graduate programs that charge supplemental tuition or self-supporting fees offer a mechanism for the campus to offer a greater range of graduate programs and to better service our students and the state. *These professional graduate programs are part-time or full-time degree-granting programs that intend to place their graduates into non-academic positions in industry, education, or government and adhere to the same standard of UC quality as academic-based programs for approval.* While current UCOP guidelines fail to make a clear distinction between these programs in terms of the content and target audience; they do have very distinct differences.

Upon approval of the Regents, professional programs can charge professional degree supplemental tuition (PDST) that is primarily returned to the division, department or interdisciplinary graduate group offering the program. A minimum of 33% of the PDST must be used to provide financial aid to students admitted to the program. The standard tuition and fees becomes part of central funds as with all other graduate programs. Upon approval of the UC President, professional programs that are self-supporting charge a fee that is returned primarily to the program. Self-supporting programs do not currently have an implicit allocation for financial aid. The normal tuition and fees are not charged and therefore are not returned to the campus central funds. Because of this, self-supporting programs are required to be *entirely self-supporting* after their initial few years of operation, *including covering all administration, faculty and staff salaries, health and post-employment benefits, rental fees and utilities for any space required, and library and ITT resources.* They cannot use any campus or faculty resources supported with state funds. Another key difference is that graduate students enrolled in professional programs count towards our graduate enrollments, so the campus receives per-student state funding for these students, while students in fully self-supporting programs do not count in our graduate enrollments.

These requirements make fully self-supporting programs a costly undertaking while providing limited benefit to the campus; therefore, *GC strongly recommends that faculty use either professional graduate programs with fees or self-supported courses through University Extension (UNEX),* in accordance with guidelines presented in the UNEX Regulations from Academic Senate Manual (page 68, Appendix A), in order to generate the resources required to meet UC-quality instruction standards for professional graduate programs. *A distinct difference exists between self-supported graduate programs and self-supported graduate courses.*

This document outlines general guidelines for professional graduate programs and self-supported courses through UNEX. New graduate programs must first be approved based on UC academic-quality by GC and CCGA. Graduate programs that are already approved do not need to go through this approval procedure if they want to start charging a PDST or offer self-supported courses through UNEX; however, these changes still need to be evaluated by GC and may require evaluation by CCGA if a significant change in the program is anticipated. We note that GC and CCGA serve an advisory role only in this process; the ultimate authority to approve professional degree supplemental tuition and self-supporting fees rests with the Regents and UC President, respectively.

***Procedure for Establishing Professional Graduate Programs***

Here, we reserve the term "professional" graduate programs for programs that charge a professional degree supplemental tuition (PDST) in order to offer part, or all, of the required curriculum and staffing support. Graduate programs with similar goals to professional programs that do not charge a PDST are largely treated like academic graduate programs. In addition to meeting the standard requirements for new graduate program proposals, proposals for new professional graduate programs, or proposals for charging a PDST for an existing approved graduate program, should meet the following criteria:

1. Professional programs should have the professional outcome of *preparing students for non-academic jobs in industry and government*. Professional doctorate programs will normally be limited to *non-Ph.D.* granting programs.
2. Professional programs must meet UC standards, which includes *UC quality faculty as instructors* for all the courses.
3. As a UC program, professional programs should *take advantage of the research strengths of the UC system*. UC professional graduate programs should not directly compete with CSU programs.
4. As with academic degrees, *a capstone project is required* although it should be focused to meet the needs of professional students.
5. Professional programs can be *full-time, part-time, or a combination of both*.
6. For professional master's programs, *the time-to-degree can be as short as 9-months and as long as 36-months*. Professional programs should specifically mention how time-to-degree will be impacted by part-time enrollment.
7. Professional programs must have an *articulated financial accessibility goal* for their students and a student financial aid support plan for achieving their goal.
8. While some courses can overlap between academic and professional programs, a *minimum of a third of the courses in the professional program should be different than the courses required for the academic program*.
9. The campus is provided some state support for graduate students enrolled in professional programs and *may supplement the professional fee-based return to aid with additional block allocation*, as appropriate. However, *the formula-based margin of increase for professional student enrollments may be less than for academic students* and will be considered in light of professional fee income to the program.

***Procedures for charging Professional Degree Supplemental Tuition (PDST)***

All new professional graduate programs must first be approved before they can apply for professional degree supplemental tuition, otherwise known as professional degree fees. Academic-based programs will not be approved for PDST. GC will evaluate the suitability of the PDST for the program according to *CCGA's Memo on Review of New Professional Degree Supplemental Tuition Proposals* (Appendix B). PDSTs are charged in addition to all other systemwide and campus mandatory fees.

As of Spring 2011, the Regents approve PDST proposals only at their November meeting for the subsequent fall quarter. The campus must receive a PDST proposal typically by the end of the January preceding the November Regents meeting, to allow adequate time for consultation and ensure that the CPEVC can submit final proposals for new PDSTs in April. The DRAFT

Planning and Budget document (*http://planning.ucsc.edu/budget/pdf.asp)* provides details on the process required for putting together a proposal to charge PDST. We note that if the program serves both full and part-time students, the potential impact of part-time enrollment on the PDST must be clearly stated.

We summarize the key steps for approval (as outlined in the DRAFT Planning & Budget document) below. *These steps are for professional programs that have already been approved*:

1. The program faculty members complete the PDST proposal and transmit it to the program's overseeing dean for comment.
2. The overseeing dean transmits the PDST proposal with a recommendation to the Vice Provost Academic Affairs (VPAA), the Dean of Graduate Studies (DGS), and Vice Chancellor Planning & Budget (VCPB).
3. The VCPB provides budgetary analysis and recommendation to the VPAA.
4. The DGS provides the commitment of block allocation for the initial three years of the professional fee program.
4. The VPAA transmits the PDST proposal, with budgetary analysis and recommendation, to GC and CPB, and asks for their comment.
5. Subsequent to receiving Senate comments, the VPAA makes a recommendation to the Campus Provost/Executive Vice Chancellor (CPEVC).
6. Assuming favorable review, the CPEVC forwards the PDST proposal to UCOP.
7. UCOP reviews the proposal and determines whether to seek approval by the Regents.

**For new graduate programs, the request for a PDST can be appended to the proposal to establish the graduate degree program. Appending a PDST may accelerate the PDST approval process upon CCGA approval of the graduate program proposal.**

# APPENDIX C
# GC Guidelines for Interdisciplinary Graduate Programs (IGP)

Proposed May 11th, 2011

UCSC has one of the lowest enrollments of graduate students, in terms of percentage of overall student enrollment of any UC campus. In order to grow our graduate student programs, and enrollments, we need models for offering interdisciplinary graduate programs that do not rely on starting new departments. UCSC has 3 different mechanisms for pursuing interdisciplinary graduate programs (IGP), namely the ad hoc interdisciplinary doctoral program, an umbrella admissions program, and interdisciplinary graduate group.

The ad hoc interdisciplinary doctoral program is modeled on a similar program available at UC Berkeley. This program allows the Graduate Council and Dean of Graduate Studies to recognize the doctoral equivalent of an "individual major" at the undergraduate level. Such ad hoc interdisciplinary programs would, by their nature, be relatively rare and require a significant degree of faculty and decanal review before being approved; however, they offer the significant advantage of allowing faculty and students to respond rapidly to new interdisciplinary fields. They can be used to seed and test emergent interdisciplinary areas that could lead to more formal IGP's. Suggested guidelines for this new adhoc program are provided below.

The umbrella admissions program allows faculty from different departments to offer a combined degree program with joint admissions into the program. In practice, it works similar to an interdisciplinary graduate group; however, the degree that is granted is an existing graduate program on campus. Consequently, it is not a new degree-granting program and therefore does not undergo CCGA review. Students may take joint classes or be involved in research across departments, but they must meet the degree requirements of one of the existing graduate programs on campus in order to earn their degree. The UCSC campus has one example of such a program, namely the Program in Biomedical Sciences and Engineering. While the PBSE program is still in its early stages and faces some challenges in terms of effectively merging the engineering and biology components, it shows promise of being an effective means of offering interdisciplinary graduate programs. The campus has established procedure for the umbrella admissions model involving the bylaws and charter.

The interdisciplinary graduate group model is similar to the graduate group model on other UC campuses. This IGG brings together faculty from multiple departments to offer a new degree in an interdisciplinary area. In contrast to the umbrella admissions program, an IGG is a new graduate program and therefore requires a full graduate program proposal and review process as well as final approval by CCGA. While UCSC has had guidelines for IGG for decades, we have had no success sustaining these programs at IGGs. Only one IGG program has been proposed, namely Digital Arts and New Media, but it failed as on IGGs and will convert over to department-based programs. The failure of these programs to be successful as IGGs, combined with the lack of proposals for such programs, indicates that new guidelines are needed. Consequently, a significant fraction of this document is dedicated to understanding why the former IGG's failed and suggesting new guidelines to help assure future success.

**Proposal for New Guidelines for Interdisciplinary Graduate Programs at UCSC**

Interdisciplinary Graduate Groups (IGG) provide a model for new and existing graduate degrees at UCSC that do not require the formation of new departments. IGGs are basically graduate groups, a degree-offering graduate program that has participation of faculty from more than one department.

Graduate Council envisions that IGGs will become an important mechanism for graduate program growth since using new departments to launch a graduate program requires significant FTE and space resources. The limited amount of FTE growth envisioned in the future needs to be used mainly to increase the size of FTE in existing departments, some of which are sufficiently small that the quality of their graduate programs has suffered. New FTE hired into departments can participate in IGGs as members. Moreover, the large amount of continuous space needed for new departments also argues against graduate programs based on the department model. While GC recommends that even IGGs need space assigned to them, similar to ORU's, the space required is much less than departments and fits better into the fractured space that is likely to open up on campus in the future. Given that CCGA takes into account resources in their program approval process, the ability of IGG to harness sufficient faculty and space resources, without the need of substantial additional FTE and space, may also be needed for program approval.

In establishing guidelines for IGGs, GC held a teleconference meeting with both the GC Chair and Dean of Graduate Studies at UC Davis to discuss their views on graduate groups. Davis has the most experience with graduate groups, with over half of their graduate programs being graduate groups, making them a good campus to start informing our discussions. Davis also provided a recent assessment of their graduate group guidelines. We also reviewed the IGG guidelines established by Irvine, available on their website. One of the most informative documents was a recent self-study of Berkeley's interdisciplinary graduate programs, including graduate groups, provided by Diane Hill, the Assistant Dean of Academic Affairs at UC Berkeley. Key points in the Berkeley document with regards to strengths and weaknesses of the graduate group model, along with suggestions for improving the model, are contained in Appendix I.

Of significant concern in GC's deliberations was the appointment of FTE's to IGGs, who IGGs should directly report to, how personnel actions are handled for IGG faculty, and how resources are allocated to IGGs. We summarize briefly the conclusions we arrived at for each of these cases below. GC did not deliberate about guidelines with regards to the membership, voting rights, TA allocation, and allocation of service, research, or teaching of faculty involved in FTEs. Such issues should be left to the decision of the IGG faculty, their department and Dean, and firmly outlined in both the Charter by-laws and memorandum of understandings.

***FTE appointment to IGGs:***

Davis reviewed the appointment of FTE to graduate groups and decided against such a model due to concerns that it would arbitrarily shift FTE away from departments; however, Berkeley has a long standing practice of "enhanced" graduate groups that have partial FTE assigned them, the benefits of which are discussed near the end of Appendix I. Moreover, the external review committee for DANM recently recommended that DANM become FTE holding as a pathway towards solving some of their challenges. If DANM had been provided the option

to be FTE holding, many of the issues it faced could have been solved that perpetuated its move to a department-based program.

*Conclusion:* GC determined that the Berkeley model offers a more flexible model needed for UCSC to be successful at maintaining IGGs because it can be used to assure the needed instructional resources and faculty investment required to successfully start a new program; however, we also want to address the concerns raised by Davis of arbitrary shifting of faculty from departments to IGGs. Therefore, in contrast to joint-appointments between departments, we recommend that any non-zero FTE-assignments to IGGs are done on a temporary basis only. The procedure for temporary FTE appointments to IGGs will follow the same process as the more permanent joint-appointments between departments (APO 417:220), namely that 0% appointments require approval from the Dean and non-zero appointments to the IGG require approval from the EVC. Faculty with joint appointments have Bylaw 55 rights in all departments and graduate groups in which they are members (including those where the appointment percentage is zero). In contrast to joint-appointments between departments, we further recommend that the faculty member who has a fraction of the FTE temporarily appointed to the IGG maintain the salary scale of their current appointment in cases where the salary scale changes. The individual FTE's assigned to the IGGs would be reviewed at each personal action according to the procedures already laid out for joint appointments (APO 417:220). During this review process, the temporary FTE-assignment of the faculty member will also be reviewed and a recommendation will be made as to whether the FTE should continue with the IGG or revert back to the department. The EVC retains the write to reassign the temporary-FTE in the IGG back to a department or division at any time. If the faculty member leaves the campus or IGG program, the temporary FTE would revert back to the division (or EVC). In Appendix

***Administration of IGG's***

As with FTE allocations, the campuses undergo different practices with regards to the administration of IGGs, and problems have frequently been caused by lack of explicit guidelines for the administrative model. While GC and VPAA serve their traditional roles, a question comes up as to whom the graduate group or IGG should directly report to. Davis and Irvine both embrace the lead-Dean model where a divisional Dean agrees to be the lead-Dean for the graduate group. The graduate groups on the Berkeley campus report to the Graduate Dean; however, the host department supplying the resources for the graduate group is clear. While the lead-Dean model is attractive due to the allocation of resources, a potential issue comes up when an academically strong interdisciplinary IGG is proposed where a lead-Dean cannot be readily identified or where a divisional Dean refuses to take the lead

*Conclusion:* GC concluded that the lead-Dean model, where the Dean is normally a divisional-Dean, is the best model for the UCSC campus due the current decentralization of campus resources to the divisions; however, modifications in the campus resource allocations may facilitate the Dean of Graduate Studies being assigned as the lead-Dean for interdivisional IGGs. If a lead-Dean cannot be identified, the IGG should have the option to appeal to the DGS and EVC to work with the Deans to provide resources for the IGG as well as to appoint a lead Dean.

***Personnel Actions for IGG faculty***

Consistent in all the documents from the other campuses was concern that the participation of member faculty in IGG was not sufficiently acknowledged in personnel action decisions. One recommendation made by Berkeley was to cross-list the IGG courses taught by the faculty with the home department to assure full credit was given for teaching; however, this does not address research and service.

*Conclusion:* In addition to possibly adopting the Berkeley suggestion for cross-listing IGP courses, GC concluded that the Chair of the IGG should provide a letter for each of their active member faculty's personnel actions that is sent to the department chair and the lead-Dean and becomes part of their file for consideration in the faculty members promotion. The Chair of IGG should also be allowed to provide additions to the department's letter in terms of service, research and teaching to the IGG. If the IGG has temporary FTE allocated to it, these FTE should be able to vote on the promotion file and the results of this vote will be contained in the IGG Chair's letter.

***Allocation of Resources***

Allocation of resources, which includes allocation of teaching, staff salary, Chair's compensation, office supplies, and space, also varies widely between campuses. For FTE-holding IGGs, the teaching of courses specifically for the IGG are allocated with the partial-FTE. Issue arises for non-FTE holding IGGs where a department must sacrifice some of their teaching in order to free up time for their faculty member to teach in the IGG. While this can be alleviated some by offering courses that could be useful to graduate students in both the IGG and department graduate program, it is unlikely that all courses will fit this requirement. Therefore, some mechanism needs to be put in place that awards departments that allocate FTE resources. For staffing, Chair, and supplies support, the Dean of Graduate Studies at Davis has access to a small amount of funds that they can use to negotiate with the lead-Dean to provide matching funds for such support. Berkeley frequently uses new initiatives or private funding to provide support in these areas, including FTE-appointments to graduate groups. In some cases, the most cost effective option would be to share graduate program staff between the IGG and a closely affiliated department or program. With regards to space resource, graduate groups do not normally have space assigned to them, other than an office for the graduate program staff; however, all campuses have identified that graduate groups suffer from the lack of dedicated space for their program, leading to a lack of community for the IGG. Moreover, departments can be strained by demands places on them to provide space for IGG.

*Conclusion:* GC did not put in specific guidelines with regards to allocation of resources since this is not part of our purview; however, we strongly urge the administration to follow the Davis model that provides the graduate division a small amount of funds to supplement the lead-Dean funds to meet staffing, supply, and Chair compensation requirements. We recommend the EVC set aside some dedicated funds for this purpose when budget cuts are less severe, as this would also demonstrate the commitment of the upper administration to grow graduate programs and would encourage faculty to submit strong IGG proposals. With regards to teaching resources, we encourage the Deans to consider providing departments that have agreed to allocate faculty to teach or provide other service to IGGs some priority in assigning new FTEs. We also recommend that a formal mechanism be put into place that enables the Graduate Dean and IGG Chairs to provide input with regards to priorities for FTE. Finally, we recommend that the needs of IGGs for community space must be taken into account in assigning space, similar as

has been done for ORUs. Established IGGs should have sufficient space to provide offices for the IGG Chair, the Graduate Program Manager, and graduate students, a combined seminar, meeting and classroom, and a common area for food preparation and community engagement. While GC recognizes that space is always an issue on campus, the amount of space that is needed is substantially smaller than the space department-based programs require, and a modest investment to help assure the success of the graduate program.

**Guidelines for Interdiscplinary Graduate Programs (IGGs)**

In consideration of the above analysis, GC recommends a set of guidelines, given below, for establishment of IGGs. We note that IGGs follow the same GC, VPAA, and CCGA oversight with regards to their establishment, transfer, and disestablishment. They also receive block allocations from the graduate division following the block allocation formula.

- ***IGG Graduate Program Proposal:*** New IGG's submit a proposal for a graduate program in accordance with current graduate program procedure and must undergo, or have previously undergone, review by GC and CCGA. Graduate programs that have already been approved and are only changing from a department-based to IGG-based program are not required to submit a new graduate program proposal for review unless they have undergone substantial changes. We note that graduate program clusters and/or umbrella structures between related IGG's and/or graduate programs are encouraged for more efficient use of available resources, especially with regards to teaching, administrative, and spacing needs.

- ***Program Charter and By-laws****:* All IGG's require a formal charter and by-laws between faculty involved in instruction, research, and service for the IGG, their academic Deans, and their department chairs. Such charters must clearly define the program and its governess structure, identify program faculty members, describe how faculty become members and how inactive faculty members are removed from membership, admissions committee membership, and resources available to the IGG, including faculty teaching, research, staff and administrative support, space requirements, and equipment and supplies. The charter should describe the responsibilities of the department and/or division to replace faculty teaching, research, and service to the IGG if a faculty member leaves the IGG. The charter should include allocation of department TA (if any) and block grant resources to the IGG. The Charter should also describe the program review procedure and provide guidelines for program amendments, discontinuance, and oversight. If the IGG is FTE-holding, the charter must specify the obligation of the FTE-holding unit in maintaining the IGG. The charter must be signed by all faculty, department chairs, Deans committing resources to the IGG, and approved by GC and the VPAA.

- ***Member Faculty Memorandum of Understanding:*** Consistent with existing campus policy, non-zero appointments of FTE's to the IGG require a formal memorandum of understanding (MOU) between each faculty member involved and their department chairs and divisional Deans outlining the instructional and service responsibilities of the faculty to the IGG versus the department. For FTE holding IGG's, this would normally be equivalent to the percentage time of the appointment. If the faculty time committed will be through the cross-listing of graduate courses, this should be clearly stated, along with the procedure for review and inclusion of courses in the curriculum. The MOU must be signed by the faculty member, his/her department chair, his/her academic Dean, and the chair of the IGG. MOU's can be discontinued or modified upon approval of the above parties. Any disagreement in the MOU's can be appealed to GC and the VPAA who will work to resolve the issue. The Dean and/or VPAA can request MOU's for any faculty in the IGG.

- ***Administration:*** A lead divisional Dean will be identified that the IGG will primarily report to and who will provide the required space and work with the DGS and other divisional Deans to assure adequate resources are provided. If a lead-Dean cannot be identified, the IGG may request the EVC identify resources for the IGG and assign a lead Dean.

- ***IGG Program Chair:*** The program chair oversees the operation of the IGG, which includes curricular and research planning and graduate student recruitment and advising. Furthermore, IGG chairs provide letters of support for all personnel actions of faculty that are members in the IGG that will go forward in the file to their Dean. The IGG chair also has the option of serving as a member of the search committee for any FTE recruitments that involve participation in the IGG. The IGG chair will be provided a stipend or course relief commensurate with his/her time commitment to the IGG.

- ***FTE Holding:*** In rare cases, and upon recommendation of the program faculty, Graduate Council, VPAA, and the Deans committing resources, the campus may determine that it is in their best interest for an IGG to be FTE holding. If the IGG becomes FTE holding, a new program charter and MOUs are required that outlines how the FTE will be allocated, the replacement policy if an FTE leaves the program, the voting rights of the FTE in the program and department, and how sabbaticals and personnel actions will be handled. FTE appointments to the IGG must be approved by both the host department and the IGG program faculty. For new hires, IGG faculty will have the option to serve on search committees commensurate with the percentage appointment of the FTE in the IGG.

- ***Program Review:*** IGGs will undergo periodic external review according to UCSC review practices. An IGG that is majority affiliated with a single department can choose to undergo external review at the same time as the departments review or undergo a separate external review upon approval of the VPAA. GC will undertake an internal review of an IGG upon request of the VPAA, lead-Dean, Dean of Graduate Studies, or GSA representative or due to unaddressed issues raised by outside reviewers.

- ***Department Incentives***: The participation of department faculty in IGG's should also be taken into account in FTE hiring practices. To assure adequate input into the process, the Dean of Graduate Studies will request from IGG chairs and department chairs involved with an IGG an annual summary of their highest priority needs for IGG member faculty. Based on this information, the DGS will make an annual recommendation of FTE priorities to the divisional deans and EVC to inform their allocations of FTE between divisions and departments.

- ***Exceptions:*** Exceptions to any of the policies above requires approval by GC, the VPAA, and any department chair and/or Dean whose resources are impacted by the exception. The IGG faculty can appeal unresolved issues to GC who will work with the Deans, VPAA, and EVC to resolve the situation.

- ***Appeals:*** The IGG faculty can appeal unresolved issues to GC, the academic Deans, and Dean of Graduate Studies who will work together to resolve the situation. If they are unable

to resolve the situation to the satisfaction of the IGG faculty, the IGG faculty can appeal to the EVC, in consultation with the SEC.

# APPENDIX D
# GC Guidelines for an Academic Plan for Silicon Valley

June 2011
Rough Draft

***Executive Summary***

The offering of UCSC graduate programs and courses in Silicon Valley (SV) provides our campus with the unique ability to define a new direction that can meet the needs of a 21st century society. The diverse cultures and inventive spirit that defines Silicon Valley is unique in the world, providing an unprecedented opportunity for UCSC to achieve world stature as a leading institute for higher education by uniquely serving a constituency that has become the symbol of U.S. innovation. Pursuing such a venture also comes with the potential risk of undermining the reputation and resources of the main campus; therefore, any academic plan that moves forward for Silicon Valley must build upon both to be successful. It is in this light that GC drafted the guidelines below for an academic plan for Silicon Valley. This draft, based on information GC gathered in November 2010, is meant to provide some initial information for the senate and administration to work together in drafting the final academic plan for SV. ***This draft should be considered a starting point only, and neither inclusive nor exclusive of final content.***

GC focused on programs that benefit from being located in Silicon Valley and/or NASA Ames, have the ability to improve UCSC's reputation and resources, and have access to the required faculty resources and interest. Following these guidelines, the vast majority of the graduate programs and/or courses proposed for Silicon Valley focus on *learning, developing and employing technologies for the generation and transfer of knowledge and the improvement in quality of life*. Under this basic concept, we identified 4 core areas, namely *Technology Leadership, STEM Education and Informal Learning, Information Sciences and Networks,* and *Energy and the Environment*. Each area has immediate/shorter-term plans for graduate programs (1-2 years) and longer-term plans for graduate programs (3+ years), as detailed below. The vast majority of the programs proposed are professional in nature and designed to place graduates into positions in industry, government, and K-12 education. The shorter-term programs are mostly based on approved academic programs and propose utilizing either self-supporting fees and/or professional fees to generate the instructional resources required. Some of the longer-term graduate programs will require additional FTE and/or facility resources that would be funded by enrollments in the shorter-term programs.

While clear synergy exists with NASA, we *did not include* biosciences, planetary sciences nor astrobiology because these areas are currently focused on research that does not appear to have connection to proposed SV graduate programs and research is under the purview of COR, not GC. The financial model is also critical for any academic plan to move forward and this should be reviewed by CPB and the VCPB. In Appendix A, we have included GC's draft on guidelines for professional programs in hopes that this will be helpful to this analysis. Finally, the School of Management (the focus on the previous academic plan) is not included in this draft.

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## Overview of Graduate Education for Silicon Valley

***GC focused on programs that met the following criteria*:**

- benefit by being located in Silicon Valley and/or NASA Ames
- have the ability to improve UCSC's reputation and resources
- have interest of and access to the required faculty

Following these guidelines, the majority of the graduate programs and/or courses proposed for Silicon Valley focus on developing and employing technologies for the generation and transfer of knowledge and the improvement in quality of life. Loosely defined, the programs mainly fall under the purview of *Technology* with a humanitarian focus.

***We identified 4 core areas*:**

- Technology Leadership
- STEM Education and Informal Learning
- Information Systems and Networks
- Energy and the Environmental

Each area has both current and or/short-term graduate programs (1-2 years for approval) and longer term graduate programs (3+ years), which we define in more detail below. The current and shorter-term programs are professional in nature and propose utilize some self-supporting (or professional) fees to generate the required financial resources to support additional instructors to teach courses in SV. We provide a very rough/preliminary framework for discussion on how such models impact resources below, but note that the details for self-supporting and professional fees for our campus are currently being worked out under the purview of CPB and VCPB. Some of the longer-term graduate programs will require additional state-supported FTE and/or facility resources that could be generated and/or justified by significant graduate student enrollments and financial stability demonstrated by the shorter-term programs.

***Graduate programs will consist of the following forms of degree-granting programs:***

1) *Professional masters and doctorates, with no-additional fees.* These programs are typically more academic in nature and involve programs split between main campus and SV. This includes most/all doctorate programs and will likely require the equivalent of 4 or more FTE in order offer the graduate curriculum.
2) *Professional masters and doctorates, with additional professional fees*. An example of a program that could utilize this mechanism is TIM's MS degree programs. These programs may be offered with fewer FTE resources, depending on how the professional fees are utilized to support additional instructors and faculty.
3) *Professional masters that teach some of their courses through UNEX*. Fees generated through UNEX will be used to hire the additional instructors needed to teach in SV. An example of a program that could utilize this mechanism include Education's MA with teaching certificate. The guidelines for these programs are outlined in the Academic Senate Manual 694 (Appendix B) and include GC oversight of the program quality and GC approval of all instructors teaching through UNEX. CCGA has also drafted guidelines for SSP. These programs may move forward with very few FTE

resources since many of the instructors will be supported through self-supporting fees.

All the degree-granting programs above require that students apply to graduate programs through the graduate division. Students who were accepted and enrolled into these graduate programs would be counted towards our graduate student enrollments. GC does not recommend fully self-supporting graduate programs at UCSC, either on the main campus or SV. These students do not count towards our graduate enrollments and therefore do not receive any state support for students, faculty or facilities; however, they must still meet the quality guidelines of the UC system. Fully self-supporting programs are therefore very costly to undertake as they must cover all the costs and have limited benefit for the main campus.

***Graduate courses will also include the following types of non-degree granting programs:***

1) *Self-supported Graduate Certificates*. These certificates are similar to certificates already offered by UNEX, but are coordinated by our faculty and involve fees being generated that may support our current/recent graduates and/or adjunct faculty to teach courses in SV. Some fees may also be used to support research centers and provide financial aid to graduate students. Any students interested in these certificate programs will apply and enroll through UNEX. An example of this could include a certificate in Geographical Information Systems offered through Environmental Studies. We note that certificates that want to include the UC seal must go through GC and CCGA review.
2) *Designated Emphasis.* This designated emphasis is the same as those offered on main campus although they may be more professional in nature. Further consideration needs to be given as to whether any designated emphasis courses can be fee-generating by offering some of the courses through UNEX. Only students who have already applied and enrolled in a graduate program through the graduate division would be eligible to take courses towards a designated emphasis. GC does not know of any examples of this, but could envision a D.E. in Energy or Remote Sensing as a path towards a professional masters program.

**Criteria Discussion**

GC attempted to incorporate suggestions by a variety of faculty and administrators to come up with the 3 criteria. We decided not to use potential competition with other graduate programs in Silicon Valley as a criterion because it could be too limiting and difficult to evaluate. In addition to research excellence, Santa Cruz has a reputation for combining innovation with service to the community and environment that appeals to a student body that is not always served by other institutes of higher education.

***Criterion 1: Location***

With the exception of rare instances where sufficient demand exists from our undergraduates on the main campus (i.e. the M.S. degree in Applied Economics and Finance) or due to unique benefits of the Monterey Bay area (i.e. Ocean Science), *UCSC's professional programs should be located in silicon valley*. Graduate programs that are professional in nature are almost exclusively located in urban areas with high population densities in order to garner sufficient enrollments needed to offer the graduate courses. Professional programs also often enroll part-time students who are either fully and/or partially employed and who take courses on

the weekends and/or evenings. These part-time students may have their tuition and fees paid for by their employers and often have the means to pay for courses themselves due to their employment. Graduate students enrolled in either part or full time professional programs can also benefit from living with family to reduce costs. UCSC Extension and NASA Ames are located within 40 minutes to a population of over 2 million, an order of magnitude greater than the main campus. While UCSC faces some competition in SV from places like Stanford and San Jose State University, Stanford is a private institution that typically serves a different population than UCSC and San Jose state typically offers programs with less research focus than UC. To be competitive, UCSC must focus on its strengths of offering high quality education to areas of the population that have been traditionally underserved (even if this population cannot pay high additional fees). While this requires more careful financial planning, offering profitable professional programs to underserved portions of the population is not mutually exclusive. Stronger emphasis will also have to be placed on advertising our SV graduate programs that may be facilitated by building upon UCSC Extensions expertise.

In addition to professional programs, academic programs that leverage off the strengths of SV and NASA Ames should also find a home there. Programs focused on technology, space and earth sciences, and information technology are clear examples; however, there are other less obvious areas (such as formal and informal education, performing arts, cultural studies, etc.) that could benefit from greater access to a diverse urban population and the large number of quality museums and performing venues. These academic, as well as professional, programs will also benefit from access to a greater pool of highly qualified instructors, research advisors, and mentors.

***Criterion 2: Reputation and Resources***

Each graduate program in SV must enhance the reputation of our campus, and, when combined together, assure that they generate resources for the campus over the longer term. This criterion pushes the focus to professional programs that can build on the reputation of our academic programs or research strengths of our faculty. What this requirement effectively eliminates is academic programs that are largely intended to place students into positions at research universities and professional programs in areas where we have no current academic strength (i.e. business, medicine, law). The campus may develop such strengths in the future through the hiring of faculty in related programs, and any academic plan will evolve over time to incorporate changes in our faculty expertise.

For any graduate program in SV to be successful, the faculty on the main campus will need to commit some of their time, potentially causing some negative financial impact to the main campus. GC anticipates that this financial impact will be minor since many of the faculty interested in being involved in graduate programs in Silicon Valley are already working and/or living in Silicon Valley. Other than fulfilling their teaching requirements, the campus cannot require faculty to work on the main campus, and any attempt to do so is likely to be counterproductive. Providing these faculty opportunities to work in SV, as well as utilize more flexible teaching practices, can motivate them to dedicate more of their time to the campus. Moreover, the campus will realize substantial time and energy savings due to decreased commute times for faculty, postdoctoral researchers, and graduate students living in Silicon Valley. Any short-term minor negative financial consequences these SV programs have to the main campus will need to be justified by the generation of substantial financial resources for the campus over the longer term, such as greater collection of graduate student fees and non-resident

tuition, additional funding through endowments and/or donations, instructional support for adjunct professors, postdoctoral researchers, and graduate students through additional fees, research facilities supported through industrial users, and indirect costs from more externally-funded research grants.

***Criterion 3: Faculty Commitment***

Academic plans for graduate programs in SV should not be derailed by fears of insufficient state-supported FTEs. While our practices in the past have been to evaluate graduate program proposals based, in part, on the campus commitment of FTEs, any plan going forward for SV must get away from this model. The vast majority of programs that will be offered in SV will be professional where our graduate will go on to jobs in industry, government, or K-12 education. Consequently, these students should be taught and mentored, at least to some extent, by qualified adjunct faculty and/or lecturers with current positions in industry and government. Silicon Valley contains one of the highest concentrations of highly educated and experienced scientists, engineers, and STEM educators in the world for which we can draw exceptional instructors and mentors for our graduate courses and students. Moreover, UARC and NASA Ames contains experts in at least two of the areas of focus, namely information sciences and networks and in energy and the environmental, which we can draw from for both instructors and research advisers. Many of these scientists and engineers want to be involved in the education of the next generation of graduate students if they are provided the means to do so. Any academic plan for SV must capitalize on this, with provisions for facilities and self-supporting and/or professional fees for instructor support as well as oversight by the host department(s), Deans, VPAA, and Graduate Council to assure UC quality. We note that GC is currently required to approve all instructors teaching a course for a degree-granting graduate program at UCSC Extension (UNEX) in Silicon Valley. Graduate program proposals for SV need to clearly define how the adjunct and/or lecturers will be supported as instructors for graduate courses and how these instructors will be selected to assure UC quality.

Some state-supported FTE per program are still desirable in order to provide continuity in the administration of any graduate program, to teach some of the more academic-oriented core classes, and to provide a more stable community and continuity in cases of leaves and/or sabbaticals. However, GC could be supportive of programs going forward with one FTE from main campus, as long as it has a viable plan for providing qualified graduate student advisors, mentors, and instructors. For GC consideration, all graduate programs with a SV component must involve at least one tenured faculty member who is willing to spend a majority of their time in Silicon Valley and support from their Chair, Dean, and majority of the department faculty to commit that faculty member to administer and teach courses in SV. New programs (other than certificates) offered in SV would typically need the involvement of at least two tenured faculty members. If these graduate programs are successful in the early stages, the main campus should commit additional FTE whose research, teaching, and service will be primarily in SV in order to add stability and improve the overall quality and depth of the program. The ability to use a few campus FTE to support several non-state supported faculty and lecturers is one of the best mechanisms for leveraging campus resources to improve our overall reputation and ability to educate a diverse graduate student body; however, we need to assure that this practice does not degrade UC reputation and research excellence.

***Other Requirements***

*Administrative Model*

The administrative model for departments offering a portion of their curriculum through UCSC extension is relatively clear (see Appendix B), but the administrative model becomes more complex if SV is going to be the home to a research park with a range of graduate programs, as is the vision of SVI and UA-SV. With the possible exception of TIM, these type of graduate programs are likely to be comprised of a few (1 or 2) faculty from any one department teaching courses and acting as research advisors for graduate students located in SV. Therefore, faculty from more than one department will have to be involved in order to offer these programs -- this favors graduate groups, rather than department-based, programs. GC recently provided updates to our graduate group guidelines that include the option of temporary joint appointments. The main advantage of a graduate group over departments is that it offers much more fluidity for faculty to move in and out of graduate-groups as their individual circumstances and campus needs change and avoids the exclusionary nature of department-based programs. Such fluidity will be a requirement for SV. Therefore, GC envisions SV being comprised of several graduate groups, along the lines of the 4 areas described, that will each administer one or more degree-granting program. Since any viable model for a research park in SV is going to have to eventually require the appointment of some FTEs to lead our efforts there, these graduate groups will need the option to be temporarily FTE-holding. Therefore, GC has suggested guidelines for such temporary joint appointments (Appendix C). Fluidity of movement may be facilitated if all FTE's have at least 50% of their appointment in a department on the main campus with the remaining percentage being appointed to SV.

Ideally, the degree-granting programs in SV would be under the purview of a Dean dedicated to SV. While the Director of SVI is dedicated to SV, that position does not currently have the traditional deacanal authority required for academic programs and must also serve a role similar to University Relations. UCSC also has a Dean position in SV, namely the Dean of UCSC Extension, that oversees UCSC's self-supporting graduate certificate programs; however, the qualifications required for running UCSC extension (and SVI) are very different than the qualifications needed to run a division focused on research and degree-granting programs. It seems unlikely that a faculty member could be identified with sufficient talent, experience, and interests to do all these jobs effectively although consideration should be given as to whether some responsibilities could be combined to avoid too many executive positions being created in SV in its early stages.

The Dean overseeing operations in SV should hold space, FTE, and staffing resources. An open question is what this Dean is Dean of -- a school, division, college? While GC doesn't have purview on such a decision, we note that schools are normally the home of professional programs. Right now the campus can't afford starting multiple schools -- can we even identify one school that could encompass all programs? While GC has not done an exhaustive search, the only possibility we have currently identified is a School of Technology (with a humanitarian focus). Such a school would be unique in the UC system; however, it is not a school that is largely recognized and therefore may not be as attractive to students in professional programs. GC investigated a few Colleges and Schools of Technology that are briefly described in Appendix D. The School of Education is also a possibility, but Education is largely focused on the main campus at this time and would only contain one of the four areas. The School of

Engineering already has efforts in SV and could possibly become the school representing SV. We caution against this as it would exclude and/or discourage faculty from other divisions from participating in SV.

An alternative is to place the SV graduate programs & groups under the Division of Graduate Studies. This approach lacks the professional appeal of a School, but may be easier to implement since it would only involve the expansion of the responsibilities of our existing Graduate Division. This option has the advantage that it would encompass all possible graduate programs and allow the professional schools to be formed from the programs that are successful at moving forward in SV. The DGS would potentially hold space, FTE, and staff support resources -- a major change for our campus but not unusual on other UC campuses with larger graduate enrollments. The DGS could then use FTE and staff resources to match commitments made by the divisional deans and their departments in providing partial FTE/staff resources to graduate programs in SV, as is done at other campuses.

Finally, we note that another advantage to a new School is the funding that could be raised through naming rights for that School. The right to name a School of Technology in SV (the only one in the UC system) has the potential of raising substantial funding. These funds would provide a base from which to support early operations and FTE appointments, to substitute for state-supported FTE's until they can be justified through enrollments and return-on-fees.

*Staff Resources*

Another important requirement for offering graduate programs and courses in SV is adequate staffing. We did not list this as a criterion because of the diversity of staffing needs and because it may be solvable with minor additional resources. UCSC Extension in Silicon Valley has over 40 staff, many with expertise in offering graduate courses (both lecture-based and on-line) in Silicon Valley. Graduate programs that utilize some self-supporting aspect, such as the MA in Education, will highly leverage these staffing resources. UARC and SVI also have staffing resources that will be beneficial to graduate programs in SV with regard to facilities and support for graduate research, although these do not include resources dedicated to graduate programs and courses. Given the existing size of graduate programs in SV and the resources already available through UNEX, UARC and SVI, one graduate program manager and/or advisor, funded through SVI, could be sufficient to offer the graduate programs in the initial few years; however, eventually a staff member should be considered in each of the areas of focus.

The offering of graduate programs in SV will also put significant additional burden on the Graduate Division that is already short staffed due to substantial cuts absorbed over the last few years. GC recommends that the Graduate Division be provided funds that would allow them to fill the open position of Associate Dean of Graduate Studies, a position that has gone unfilled for the last year. Working with the future Dean of "Silicon Valley", the Dean of UCSC Extension and the DGS, the Associate Dean of Graduate Studies would ideally oversee Graduate Division involvement in Silicon Valley, as well as help the DGS with their duties on the main campus as dictated by current campus policy.

*Facilities*

Over the next few years, we anticipate that the TIM, Network and Education programs will be housed in the UCSC Extension building, in addition to potential new programs for a GIS certificate and a MS in Environmental Health. Programs in the environmental areas requiring wet labs will be housed at the Advanced Studies laboratory at NASA Ames. The 3rd floor of the

UNEX building contains ~14,000 square feet of new space that can be partitioned to fit the needs of the programs that will be initially placed there. The rent for this facility would be paid for by SVI through savings incurred by not leasing portions of Building 19 on the NASA Ames campus. UCSC efforts at the ASL currently have ~10,000 square feet of space allocated, including faculty and student offices, wet and dry labs, conference rooms, and kitchen facilities. UCSC could possibly obtain more space allocated to it in the ASL if it works out a clear plan in collaboration with NASA Ames scientists. However, we note that this is NASA space and therefore only a temporary solution. New space will have to be identified as program needs are determined.

Over the longer term, we anticipate all programs, other than those strongly affiliated with UNEX, will move to other buildings. The current plan is for those buildings to be on land leased on 77 acres at NASA Ames by the University Associates--Silicon Valley LLC (UA-SV). UCSC is the lead partner in UA-SV, which also includes Foothill DeAnza. Prior plans called for UCSC to build and occupy 360,000 square feet of building space at the new campus and GC is not aware if any updates to these numbers have been provided based on scaled back plans. If building does not go forward on these 77 acres, additional buildings near the UNEX site could possible be leased. The capital campaign could also focus on raising additional funds for the new facilities to supplement funds that are already allocated. Clearly, a sound academic plan for SV is a requirement for raising building funds through a capital campaign.

*Graduate Student Financial Aid*

Since most of the programs in SV will be professional in nature where students will be paying tuition and fees themselves (or through their employers or fellowships) to obtain their degree, graduate student financial aid will be especially important for assuring equal access. While some graduate students will likely be supported off of externally-funded grants, very few TA positions will be available given the focus on graduate-education. Therefore, a financial plan needs to be worked out that sets aside some percentage of the funds collected in tuition and fees towards fee waivers and other financial aid for students who could otherwise not afford their educations. We note that professional fees require a minimum 33% return-to-aid for support of students enrolled in the program.

We also recommend that the campus look into offering a select set of undergraduate courses in SV which could be used to generate a few-TA positions. Remedial courses (such as algebra) and career-oriented courses may be the most viable options. We note that UCSC extension in Silicon Valley (UNEX) already has plans underway with faculty on campus to develop on-line GenEd courses for the UC system and is applying for funding from UCOP to implement. UNEX currently offers 20% of their courses on-line and likely has the expertise to lead this effort for the campus. CEP may want to work with UNEX to understand implications of offering these courses on the campus general education requirements and impacted majors and the possible implications on graduate student TAships.

## Graduate Programs and Courses

*Size and Scope*

In Table 1, we provide a **very preliminary** estimate of the likely size and scope of graduate programs, enrollments, and FTE/lecturer requirements for SV based on the 4 areas and programs under discussion (as detailed further below) and faculty interests. We stress that these estimated are very preliminary but are provided to help define the scope of our operations there to 2020. We make no effort to project beyond this time frame and we only considered programs that are either in the planning stages currently, in division's 5-year plans, and/or have sufficient faculty interest across two or more departments to be able to start with currently available FTE. We assume that most of the programs will reach the final proposal stage within the next 2 years, first admissions in 2 to 4-years, and build-out in an additional 3 to 5-years. While most of the programs are likely to be professional masters, GC also assumed that, if the intention is to build a cutting-edge research center for graduate education that will significantly enhance UCSC's reputation, each area will want to offer a more academically-oriented doctorate program. Many of these programs are likely to be split with the main campus, and will have to rely on innovative instructional methods (telecast, online, workshops) to deliver their graduate curriculum effectively in two different locations.

*We envision that by 2018, UCSC SV (not including UNEX) will reach 480 graduate students enrolled in programs in SV, with a minimum of 40 part-time FTE (equivalent to 20 full time), 20 adjunct/research faculty and 20 lecturers.* Based on the programs discussed below and for simplicity, we assumed that each area will require a minimum of 10 FTE at 50% time, estimate adjunct positions based on adjuncts in related programs on the main campus and anticipated interest from NASA and SV scientists, and estimate 5 lecturers in each area, as described in Table 1 in Appendix E. This projection is less than half of earlier campus projections for graduate student enrollment in SV (mainly based on the School of Management), but it would still account for half of the graduate student growth called for in GC's Graduate Program Review (June, 2010). We anticipate the remaining ~500 graduate student enrollment growth will occur on the main campus, facilitated to some extent by the additional part-time FTE's appointed to departments on the main campus as is implicit in our recommendation of temporary joint (assuming 50%) to SV. Presumably, these SV FTE positions would be supported off of tuition & fees generated by the 500 enrolled graduate students as well as any endowments raised by the school(s) and/or research institutes located in SV. Fees raised through professional or self-supporting mechanisms would primarily support lecturers, and adjunct professors would be primarily supported off of extramural funds (including UARC or NASA Ames). Additional funds may be raised through the offering of undergraduate courses.

An enrollment of 480 graduate students for 20 full-time (40 part-time) FTE is equivalent to 24 students/FTE. This is very high compared to the FTE to graduate student ratio of the main campus, but comparable to major ratios for our larger departments on campus when undergraduates are included. This high ratio is a reflection of the professional programs reliance on more adjunct and lectures. If we add the 20 adjuncts professors and 20 lecturers to the 40 part-time FTEs, the 480 graduate students will have access to over 80 faculty and instructors at the Ph.D. level. The doctorate programs have 2 full-time (4 part-time) FTE for 20 students, or a ratio of 1 to 10. If the adjunct professors are primarily research advisors for the doctorate programs, the doctorate programs will have access to 4 FTE (50% time) plus as additional 3 to 7 adjuncts for 20 graduate students, resulting in a ratio of 1 to 4 (Ed.D), 1 to 3 (TIM) and 1 to 2 (EE, IS&N) research advisors to graduate students. These ratios are consistent with the main

campus. We note that these projections suggest that long-term facility plans for SV should allocate a *minimum* of 80 offices, assuming an office for each part-time FTE, partitioned shared offices (2 per office) for adjuncts & lecturers, an additional office for staff members in each area, and larger partitioned offices for graduate students and postdoctoral researchers. While UCSC facilities at UNEX and NASA Ames are likely adequate to meet the current and short-term programs, new facilities will be needed in next 4 years to meet the longer-term demand. The demand for wet and dry labs, conference space, and teaching rooms will also have to be accessed as plans move forward.

*What we did NOT include:*

Before going into the details of each of the area, we comment on what was not included and why. We did not include graduate research in SV that was not linked in some way to graduate programs/courses offered in SV. We did not include the School of Management (SOM), the focus on the previous academic plan, due to the lack of substantial faculty interest that would be required for success. The parts of the SOM that meets these criteria are contained in the Technology Leadership focus area. We also did not include the Schools of Public Health and the Environment for similar reasons. The biosciences & health areas related to environment are contained under the Environmental Technology & Health focus areas. While clear synergy exists with NASA, we did not include biosciences, planetary sciences or astrobiology because these areas are focused on research that is not connected to any proposed graduate programs and/or courses offered in SV at this time. They should still be included in an academic plan and we leave this to COR. We note that these areas are more academic, rather than professional, and would likely need more FTE resources than projected in Table 1 to be viable as graduate programs in Silicon Valley.

*Graduate Program Approval Process*

While several of the programs moving forward in SV are already approved programs, the majority of the programs are likely to be new. GC does not approve certificates, but all master and doctorate degree programs will have to through the normal campus and CCGA approval process. We anticipate that GC will need program proposals from faculty by the end of 2011 to have any chance for these programs to be approved for admissions by Fall of 2013. Likewise, proposals received by end of 2012 and 2013 could aim for admissions in the fall of 2014 and 2015, respectively. GC will work to expedite their graduate program review process, but we will not sacrifice quality in doing so. To assure that the best proposals go forward, we encourage faculty to engage GC early on. While the Chair of GC will change at the end of this academic year, the former chair will work with the new Chair to assure that programs in process are note delayed due to the transition.

Give the budget situation, CCGA is providing more scrutiny of the financial aspect of graduate program proposals before moving to the external review process. Therefore, GC will likely consult more with CPB early on in accessing how the financial and faculty resources may impact the academic quality of the proposed programs. We note that UCOP has been discouraging proposals for new Schools that overlap with Schools already offered on other UC campuses at this time; however, we believe that they would consider a proposal for a School that has strong academic justification and demonstrated need for graduate training that fits the states needs, has access to an endowment to provide initial support, and is unique in the UC System.

***Technology Leadership***

Programs in this area would focus on research and education of graduate students for careers in human, financial, and information management in areas that are technology-oriented. This area currently consists of programs within the Technology and Information Management department, but could expand to offer more programs in the areas of finance and applied economics in collaboration with the Economics and AMS departments. These programs take advantage of the significant population and expertise of technology professionals in Silicon Valley and internship opportunities for graduate students in the SV area.

The recently approved M.S. and Ph.D. in Technology and Information Management (TIM) plans to largely operate in SV where they can supplement their small number of FTE with addition instructors supported from self-supporting and/or professional fees. TIM is currently in the process of defining intellectual content to best serve the SV community and is doing some marketing and fee structure investigation to help assure success in SV. Currently, TIM has 4 ladder-rank faculty (this does not include the Chair), a professor (Akella), an associate professor (Musacchio), and two assistant professors (Ross and Zhang). One professor (Akella) works almost entirely in SV and the other three professors spend about 20 to 40% of their time there. In addition, TIM has several (>10) graduate students and research staff (>2) working in SV, providing a reasonable community for students. They offer a number of their PhD level courses live in SV and telecast them to campus. Moreover, the AMS department offers telecast courses (AMS 205 and 206), mostly to support of the TIM program. TIM currently plans to keep their Ph.D. program as an academic research-oriented doctorate and transition their M.S. degree to a professional degree that would be largely self-supporting. TIM faculty will have offices on the the 3rd floor of the UNEX building where they will have much better space suited for graduate courses and student advising.

Some faculty interest, particularly in social science and humanities, still exists in the general area of Global Leadership, largely based from a subset of the ideas for a School of Management proposal, written by Nirvikar Singh. A professional master's degree could be offered that combines courses in languages, literature, culture, religion, politics and global economics, all of which would be important for students who were interested in pursuing jobs in global business and/or leadership. This program would also allow us to offer language courses in SV that do not have sufficient demand on the main campus (such as Arabic, Hindu) but are likely to be important for global business and be of more demand in SV. This program could also offer courses in entrepreneurship through the Center for Entrepreneurship (C4E) that would be of interest to graduate students in other degree granting programs.

The Economics department offers an M.S. in Applied Economics and Finance that has currently suspended admissions to give them time to reformulate the program into a 9-month MS degree and to introduce a professional fee. The main issue behind the suspension is that the M.S. degree in Applied Economics and Finance is sufficiently different from Economics' Ph.D. that it requires them to teach different courses. They don't currently have the faculty resources to do this anymore so they intend to use a professional fee to support faculty to teach the courses required for the M.S., Moving to a 9-month program is more consistent with a program charging professional fees and allows them to conserve faculty resources. The M.S. degree is currently in high demand by Economics undergraduate students (one of our largest majors) so Economics can get significant enrollments in the professional program without having to offer any courses in SV. Nonetheless, as their faculty resources increase they may have interest in possibly expanding this program, or other similar programs, in SV as they anticipate a high demand there.

Finally, we note that the success of all these programs combined could justify a School of Management moving forward, similar to what was originally proposed, but grown using a more organic and financially viable model.

***STEM Education and Informal Learning***

Programs in this area would focus on training of graduate students to educate our children and the public in areas of science, technology, engineering and mathematics. This includes both formal training efforts, such as the MA degree in Education with a Teaching Certificate, as well as more informal learning methods through our involvement in centers such as the Center for Informal Learning and Schools (CILS). In addition to increasing graduate enrollments, these programs benefit from the larger, more urban, and more diverse population in Silicon Valley which allows faculty to expand the impact of their research and education efforts, and from the presence of high quality museums, such as the Children's Discovery Center, the Tech Museum, DeAnza Planetarium, and Exploratorium, that provide living laboratories for informal learning practice and research. We note that while there are no current plans due to limited resources, our highly respected Science Writing program would likely do well in Silicon Valley as a largely self-supported program. Finally, NASA and UARC's education and outreach efforts could provide additional opportunities for graduate students working in this general area. Taken together, these programs provide a very valuable public outreach effort for UCSC that will improve our overall reputation and reach in SV.

Currently, Education is preparing a proposal that would allow them to offer their MA and teaching credential program in SV through a part-time program targeted to students that are currently employed as teachers. Approximately half of the courses required for the MA and certificate courses would be offered during the evenings and weekends through UNEX and students with the remaining courses (over 50%) being offered full time during the summer session, when their part-time students are unlikely to have full time employment. Education has already identified a faculty member who will commit to spending a majority of their time in Silicon Valley to run this program and to teach up to two courses/year, with approval by his Chair and Dean, and they will be able to leverage UNEX staff with considerable experience in self-supported education programs. Instructors for the remaining courses will be selected by the Chair, and approved by GC. The instructional support for courses in SV will be fully provided by self-supported through fees generated by enrolling in the courses through UNEX. A profit sharing model is currently being worked out with UNEX that would enable the collected fees to pay for the instructor, UNEX costs, and return some funds to the department that could be used towards graduate student support and financial aid.

An additional advantage of establishing the MA plus teaching credential program in SV is that Education would be able to service UCSC undergraduates in the STEM fields who want to teach in K-12. These students could get a teaching job in K-12 (without a certificate) through an internship program and while earning their MA and/or teaching certificate in Education by enrolling in their part-time program in Silicon Valley. Students would get a head start on this program by taking courses on-campus over the summer. Education could also offer our doctorate students enrolled in SV extra training that would enable them to better compete for positions at community colleges upon graduation.

Education also plans to offer their recently approved Ed.D. degree in Collaborative Leadership in SV. The admissions for this program is currently suspended because the

department found that the students most interested in this degree program were employed professionals working in Silicon Valley. These professionals want to be able to earn their Doctorate of Education degree without having to entirely give up their employment. By offering the degree in SV, Education will be able to service these professionals. Given the nature of the students taking the class, the instructional needs for this degree program could be supported either through self-supporting fees or through professional fees. Education also plans to grow the services they offer to teachers through additional professional certificate programs. If Education is to expand their efforts to the levels they are proposing, the Education department could transition to a School of Education. In this case, the Education department would need additional FTE, staff, and office resources that they have provided to GC as a wish list.

Currently, there are no degree programs being proposed for faculty involved in CILS in SV although this could change in the future. CCGA is seeing proposals from other UC campuses that involve degree programs utilizing innovative education methods focused on new technologies to better train our next generation of teachers. A professor in Psychology, Maureen Callanan, has been conducting research (funded by the NSF) for the last 15 years to understand children's learning as they engage with family members at the Children's Discovery Museum in San Jose. Her research efforts have expanded to develop exhibits for the UC Berkeley Museum of Paleontology. Joel Primack (Physics) works with the De Anza Planetarium, and other faculty members and graduate students have been involved in exhibits for museums throughout the San Francisco bay area. These efforts could possibly be leveraged with our existing Science Writing program to develop a stronger graduate student internship and/or training program in the area of STEM Learning and Communication. Resource requirements for these efforts have yet to be identified, but should certainly be considered in allocation of faculty and graduate student office space.

***Information Science and Networks***

This area focuses on the retrieval, analysis, manipulation, storage, and dissemination of information, which are generally transformed by advances in technology. While this area is strongly driven by computer science and computer engineering departments, most areas of science and engineering, as well as areas in the arts (digital media), social science (cognitive science), and humanities (digital literature), could be involved in information science and networks. The only graduate program currently offered in SV in this area is the M.S. degree in Computer Engineering with an emphasis in Network Engineering. This program is entirely self-supporting and has struggled from low enrollments; more attention is needed on advertising, which we understand they may be doing in collaboration with UNEX. GC is also concerned that this program may not meet the requirements in the new guidelines for self-supporting programs being worked through at the UCOP level. We recommend that some consideration be made to moving the program into a partial self-supporting model, similar to what Education is proposing, which would mean the students would be counted towards campus enrollments and the program would have some access to state-supported campus resources (such as SVI's facilities).

Other possible graduate programs that are being discussed in this area include High-performance Computing, Computer Gaming, Software Engineering, Human Computer Interface, and Cognitive Science. These areas have the potential to highly leverage off NASA Ames's and UARC's Information Science focus areas, in addition to the general strength of Silicon Valley. AMS is the likely department to lead a proposal for a high-performance computing M.S. program, with participants from Physics (Primack) and possibly other departments where

scientific advances depend on higher performing computers. Computer Science could participate due to their strength in data storage, a requirement for high performance computing. This program could also utilize the faculty expertise in the High-performance AstroComputing Center, which Primack is Director, and could possibly combined with faculty interested in advanced visualization.

Computer Science also has two programs in the 5-year plan for Engineering that could be offered in Silicon Valley. These programs include professional M.S. degrees in Software Engineering (SE) and Computer Game Design (CGD) and we anticipate that they will proceed forward with one of these two programs this year. The CS faculties most interested in these programs live in Santa Cruz; therefore, these programs are likely to involve graduate students both in SV and the main campus, with projected enrollments of 30 to 50 students total once they reach full enrollment (we assumed 20 of these students would be in SV in Table 1). These programs may have to charge a professional or self-supporting fee in order to have sufficient instructional and research support. Offering more flexible teaching schedules (such as the ability to offer an on-line course combined with intense in-person workshops) may also be attractive to CS faculty teaching in SV. As with the possible MS degree in HPC, the number of FTE's needed in Silicon Valley to offer these programs will depend on the percentage of the program that will be in SV versus the main campus. This leads to the uncertainty in FTE in Table 1; more emphasis in SV would likely require more part-time FTE in SV in order to achieve some stability. We note that CMU already has a strong software engineering program at NASA Ames so potential competition with this program would have to be carefully considered.

Psychology is in the process of putting together something in the area of Cognitive Sciences involving their new professor, Steve Whittaker, who will arrive on campus in January. Whittaker was the Chair of Human-Computer Interaction and Information Retrieval while at Sheffield, and a member of the top raked Information School in the UK. He is also working extensively with IBM scientists in SV and has previously worked with AT&T Labs and Hewlett Packard Labs. GC anticipates that Cognitive Science faculty in Psychology and Whittaker will be involved in the formation of the Information Sciences programs once he arrives on campus. Related to this is the potential of creating a professional graduate program in Human Computer Interactions. Ths program would build off of the designated emphasis in HCI being proposed by Steve Whittiker (Psychology), Sri Kurniawan, Warren Sack (DANM), Travis Seymour (Psychology) and Marilyn Walker (Computer Science).

Given the overlapping interests of computer science, computer engineering, applied mathematics and statistics, physics, psychology, DANM and NASA in information sciences, the campus may have sufficient faculty to offer an interdisciplinary Ph.D. program related to Information Sciences that would fit well into Silicon Valley. The development of this program would clearly be longer term and a department would likely have to take the lead, but it would add a strong academic-core in an area largely comprised of professional master degrees. We note that humanities faculty, in collaboration with other divisions, are leading an effort in "Digital Humanities", covering everything from designing new projects for the digitization of texts and archival materials, to the database mining and GIS mapping you can then do with those digitized materials. This effort could tie into both the M.S. and Ph.D. programs in Information Sciences.

***Energy and the Environmental (Technology & Health)***

Environmental Technology focuses on the development and deployment of technologies to evaluate and conserve the natural environment and resources in order to curb negative impacts of

human (and technology) development while environmental health deals with how the natural and human-modified environment impacts human health. They are linked since environmental technology aims to reduce the negative impact of human health caused by human development. Sustainable development is core to envirotech, and includes areas such as waste management, recycling and sewage treatment, water and air purification, environmental toxicology and remediation, renewable energy, green buildings, climate and energy forecasting, and energy conservation. Faculty in Environmental Studies, METX, EE, Chemistry, Physics, and possibly Earth & Planetary Science have interests in offering graduate programs related to this area in SV, and faculty from EE and Physics currently have laboratories and advise students in SV in energy and environmental technology. Clear synergy exists with efforts on both the main campus and at NASA Ames and UARC (Earth Sciences) in SV. Moreover, the proposed university research park at NASA Ames, led by UA-SV, is proposed to be a sustainable design that would also leverage graduate research efforts in this area and provide a test-bed for new environmental technologies to be tested and implemented.

The Microbiology and Environmental Toxicology (METX) department is proposing to offer a professional M.S. in Environmental Health that will include courses offered at the main UCSC campus and through UC Extension. This masters degree will provide students with an advanced understanding of the interplay between environmental agents and human health accompanied by course work relevant to information technology and project management. METX plans is to combine courses offered on the main campus in chemical toxins and bacterial agents with courses in management and information technology taught via UNEX. This program is in the nascent planning stages. While this program is lead by METX, it is likely to have overlap with faculty in EEB, Ocean Sciences, Environmental Studies, and other departments interested in the impact of the environment on the health of living things.

Environmental Studies is proposing to offer a fully self-supported graduate certificate program in Geographical Information Systems (GIS) through UNEX. The department already offers self-supported courses in GIS in the Monterey Bay area. Based on this experience, they anticipate an enrollment of approximately 20 students per course in the certificate program. Fees collected from the GIS certificate program support the instructor and the Center for Integrated Spatial Research. Success of the GIS certificate program could lead to the offering of a professional MS degree in the area of remote sensing. A professional Master's degree in remote sensing/GIS was proposed in the past by Earth and Planetary Science faculty, and significant faculty expertise and interest also exists at NASA Ames and UARC Earth Sciences. EPS's interest in reviving the MS degree in Remote Sensing has yet to be assessed; ENVS faculty may be interested in taking the lead on this, with help from EPS.

Electrical Engineering and Physics have several ladder-rank faculty with wet and dry laboratories at the Advanced Studies Laboratory (ASL) at NASA Ames, including Sue Carter from Physics and Nobby Kobayashi, Ali Shakouri, Joel Kubby, and Clair Gu From Electrical Engineering, and Nadar Pourmand from Biomolecular Engineering. ASL affiliates also include two adjunct professors, Glenn Alers from Physics and Bin Chen from Electrical Engineering. Together, they advise over a dozen graduate students, a few postdoctoral researchers, and several undergraduates doing their research in SV. These research groups also have access to the Materials Analysis for Collaborative Science Facility (MACS), established by the BIN-RDI, which includes an SEM, TEM, and XPS as major equipment as well as several other shared facilities. While this core set of faculty have yet to propose a graduate degree, they could lead an effort to offer M.S. and/or Ph.D. degree programs in sustainable energy or environmental

technology that could leverage off efforts of NASA and UARC employees working at the ASL and throughout the NASA Ames Research Park. Faculty in Chemistry, MCDBio and Environmental studies have also expressed interest in this research area. We note that EE may offer a certificate program in SV in conjunction with their new Power Engineering Courses that could be called something like sustainable energy and power. It may be possible to combine their effort with other departments to formulate a professional MS degree program in environmental and/or energy technology.

Finally, we mention that the Art department has an initial proposal to offer a 3-year Masters of Fine Arts degree in Social and Environmental Practice that they are consulting with GC on. While Art has no current plans to offer any portion of this program in Silicon Valley, it may have some synergy with the Environmental Technology and Health and STEM Informal learning focus areas that could be pursued. Their proposal discusses forming solid relationships with museums and other visual arts programs in Silicon Valley.

***Crosscutting Programs***

We anticipate significant crosscutting efforts in both research and courses between the four areas. Faculty working in energy and the environmental and information sciences are also interested in helping with STEM informal learning. Faculty in technology management and finance are likely to interact with faculty in Information Sciences and Networks. Students in Energy and the Environmental may be interested in courses in information sciences and technology management, and visa-versa. Moreover, students in information sciences and environmental technology areas may be interested in teaching in K-12 and/or community colleges and would benefit from taking courses in Education. Having each area offer 1 core graduate course that could be taken by students in the different graduate programs in SV may be a useful method to assure interaction between the 4 areas, conserve teaching resources, and provide a more vibrant interactive community.

**Volunteering: Technology for Society & Environment**

A consistent theme that came out in GC's investigations was the need to install a greater sense in graduate students of the role that technology can play in helping society and the environment. Therefore, an important part of the graduate student training process would be to provide students in SV a chance to apply what they learn through volunteer opportunities. The campus already has an organization, namely the Global Information Internship program, that we could build from to provide these opportunities. The GIIP program is also home to a justice and sustainable development movement called "E-Advocacy" in which technically trained students and civil society activists collaborate by developing technically based projects to meet community needs. There is also a large untapped potential for UCSC to work with information companies on community service and Social Enterprise projects, and many companies and NASA itself encourage employees to work on or to support community projects. We recommend that we work with GIIP faculty, and other interested parties, to incorporate a volunteer program as part of the graduate training for students in Silicon Valley.

***Overlap with Undergraduate Education***

One of the outcomes of GC's Review of Graduate Programs (June 2010) was the observation that it is difficult to run either undergraduate or graduate-only programs. Research best thrives with access to graduate and undergraduate researchers and both graduate and

undergraduate students training benefits from greater interaction. The original strategic plan for SV calls for graduate education only; however, it is prudent to reassess this decision. Undergraduates are already involved in research in SV and many of the internship programs at NASA are specifically tailored for undergraduates. In addition, UCSC will be sharing the UA-SV with Foothill-DeAnza College providing an obvious source for transfers into our undergraduate courses and/or programs offered at SV. This would better leverage our faculty at SV and may provide some relief to impacted majors on the main campus while still meeting the graduate enrollments required from UCOP. Given the larger number of foreign-born students in SV, we may also be able to attract more undergraduates willing to pay non-resident tuition to the SV campus. While it may be that no undergraduate degrees are fully offered in SV, we should not preclude the ability to offer specific undergraduate career-oriented courses tailored to expertise of the SV campus, as well as remedial and on-line GenEd courses offered in collaboration with UNEX. GC leaves this to CEP to provide direction on.

***A Possible Pathway Forward***

Past attempts to implement an academic plan for SV have failed due to the lack of faculty involvement. Most faculty have been disenchanted with SV due to the singular focus on the School of Management and, to a lesser extent, the School of Engineering. While the pathway forward is one for the administration and SEC to decide, GC offers these few comments based on our observations over the last several months.

Many faculty are still excited about the potential that SV brings for the campus and these faculty should be engaged now. A possible method to engage these faculty may be to form focused working groups tasked with putting together more concrete plans for graduate programs and/or courses. These working groups should be comprised of faculty who believe in the opportunities in SV, not by faculty trying to get more FTE's for their department. State or enrollment-funded FTE's over the next few years is a false promise, but still a necessary future reality. We may have to rely on establishing new graduate programs with existing FTE and possible help from endowment funding as initial graduate (and possible undergraduate) enrollments could possibly justify future state or enrollment-supported FTEs.

One method to encourage departments to pursue their SV plans is to use the very few FTE we will have over the next few years to provide a few departments FTE's that would be temporarily split (see Appendix C) between a graduate group in SV and the department on the main campus. The SV portion would allow that faculty member to focus on program development for SV while still serving the department's needs on the main campus. If the graduate programs are approved and lead to graduate enrollments, this would allow SV to directly support the joint FTE's through tuition, professional fees and state enrollment funds, enabling the temporary FTE to shift back to the department, division, or central campus. This approach would also encourage the hiring of faculty engaged in graduate education in SV. Some of our smaller or more impacted departments (AMS, Economics, EE, DANM, METOX, Psychology, as well as others) are also the ones most likely to pursue options in SV given FTE resources to do so.

In Appendix E, we also provide a very tentative time-line for scaling up graduate enrollments and FTE based on programs most likely to go forward. The UARC contract expires in 2013, the same year when we may anticipate enrollment from new programs in SV. While any plan for SV cannot rely on UARC, we note that programs that involve NASA scientists are more likely to get graduate student support and adjunct faculty to serve as graduate advisors.