October 4, 2004

Dear Colleagues,

In my three years at Santa Clara University, it has been a privilege to have a shared appointment between the Department of Education and the Center for Science, Technology, and Society. This is a unique opportunity that, in the best of cases, will advance the goals of both entities and contribute to fulfilling the broader goals of the university.

The nature of the work as an Assistant Professor of Education (focused on educational technology) and as a Program Director for the Center (in the Economic and Social Development area) requires me to think as both a traditional academic, advancing knowledge through research and teaching in the education field, and as a "public intellectual" promoting the work of the Center through its events and publications.

When I arrived in July 2001, one of the initial challenges at the Department was the evident need to obtain adequate educational technology resources that would be under the department's control in support of both the teacher preparation and MA emphasis on Teaching and Learning with Technology, so that my teaching—and that of my colleagues—could benefit from easier, more convenient access. To this end, I spent time during my first year preparing a successful grant proposal to the university's Technology Steering Committee that allowed us to acquire a mobile cart equipped with 16 laptop computers, a printer, and a wireless access point. Acquired at the end of the 2001-2002 academic year, the cart has been used by several faculty members from Education, Communication, Counseling Psychology, Liberal Studies, and others (e.g., Media Services) transforming any classroom into a "computer lab" with great flexibility and convenience. This resource was also used during the Center's *Networked World: Information Technology and Globalization* conference (April 2003) to provide Internet access to 15 non-profit organizations (Laureates from the Technology Benefiting Humanity Awards) whose work was being showcased in the lobby of Mayer Theater, the main venue for the conference.

I have also spent considerable time preparing and then managing two successful grants from the Fletcher Jones Foundation. The first grant ($157,000) was received in December 2002 and allowed us to establish the Electronic Portfolio Laboratory in Bannan 211, acquire a significant software library, add technology resources to the Reading and Learning Center, and hire a part-time technical support staff person. The second Grant ($151,000) was received in March 2004 and has funded laptop computers for all full-time Education faculty, handheld computers and accessories, additional resources for the Electronic Portfolio Laboratory, funds to continue employment of the technical support staff person, and a small research collaboration using videoconferencing with an elementary school in downtown San José. These grants have been key supports to our department's strategy to meet current and future requirements set by the California Commission on Teacher Credentialing, as well as our own vision for the programs and activities we wish to develop.

In the following pages I will describe my work to date in the three major areas of scholarship, teaching, and service and offer a sense of direction for the near future.

Scholarship

My research interests are focused on the use of computer and telecommunications technologies for teaching and learning, mainly but not exclusively in K-12 environments. One aspect of the research is how these technologies can be used most effectively in teacher preparation classrooms, and another the challenges they introduce to "regular" schooling. The most important line of research deals with teaching practice, both in the situated preparation of new teachers and understanding the reasons why current (in-service) teachers do not integrate technology into their daily work as much (or as well) as they could. This last question is the focus of the survey I conducted in Spring 2004 with data from over 200 teachers in Santa Clara County.

Since coming to SCU in July 2001 I have published four articles in academic journals (one as sole author, one as first author, and two as second author). These four articles deal with different but interrelated aspects of the integration of technology to teaching practice, teacher preparation, and assessment. I have also presented at five international conferences.

The first article was the product of a collaborative project I joined at the invitation of Professor Susan De La Paz. The original project, with Professor Linda Barron (Vanderbilt University) produced a CD-ROM with text, graphics, digitized video, and original source materials (e.g., student work). I was invited to contribute to the elaboration of the theoretical framework focused on the advantages of learning with technology resources and the analysis and discussion of data. In the resulting article, "Multimedia environments in mathematics teacher education: Preparing regular and special educators for inclusive classrooms" I was the second author. This article examines the use of the CD-ROM in teacher preparation classes, allowing students virtual access to inclusive classrooms they would not be able to observe otherwise. It was published in the *Journal of Technology and Teacher Education* (JTATE), a quarterly peer-reviewed publication that is the official journal of the Society for Information Technology and Teacher Education, affiliated with the Association for the Advancement of Computing in Education (AACE). The editor for JTATE is Debra Sprague (George Mason University). According to the Society's web site, "the acceptance rate for all AACE journals is 10-19%." The abstract is available online at
http://www.aace.org/dl/index.cfm/fuseaction/view?id=16325

Another collaboration, with one of the students enrolled in the MA emphasis in Teaching and Learning with Technology that I also direct at the Department of Education, evolved from work she conducted in one of my courses, "Assessment, Evaluation, and Technology." While technology tools offer opportunities to address problems like access to inclusive classrooms, it also may lead to unexpected problems. Stacey Conradson is first author and I second author of an analytical review article titled "Computers, the Internet, and cheating among secondary school students: Some implications for educators." It examines the growing phenomenon of cheating in schools using the Internet and other electronic tools, and considers technology-based as well as pedagogy-based options to address the problem. My contributions were centered on significantly expanding the literature review, elaborating on the pedagogical implications, drawing conclusions and recommendations, and taking the lead

during the process of re-writing and revising the article in preparation for submission. It was published by the online-only, peer-reviewed journal *Practical Assessment, Research, and Evaluation*. The co-editors are Lawrence M. Rudner (Graduate Management Admission Council) and William D. Schafer (University of Maryland). In an email (January 7, 2004) Dr. Rudner wrote, "acceptance is about 20%." In a different email, Dr. Rudner wrote to say that "…your paper will make an excellent addition to the literature." The article is available at http://pareonline.net/getvn.asp?v=9&n=9.

Two other publications deal with teacher preparation and pedagogical implications of the use of technology. Since the Summer of 2002 I have taught sections of ED271, "Instructional Technology for Teachers," at a local elementary school in the Cupertino Union School District. The key goal supporting this teaching/research experience is to explore the benefits of a situated approach to the acquisition by future teachers of technology skills and assimilation of related pedagogies (such as project-based learning) that support integration of technology into routine teaching practice. So far one article based on this experience (for which I was first author with C. Giancarlo, who co-taught the first summer with me), has been published in the *Journal of Computing in Teacher Education* (JCTE) under the title "Situating teacher education: From the university classroom to the "real" classroom." JCTE is described in their web site as "a refereed journal published quarterly by the Special Interest Group for Teacher Educators (SIGTE) of the International Society for Technology in Education (ISTE)." The editors are Ann Thompson and Denise A. Schmidt (Iowa State University). An email from the editors dated February 8, 2004 states that the acceptance rate is "approximately 38 percent." The abstract and full-text PDF are available online at http://www.iste.org/jcte/20/3/index.cfm.

New technologies are also creating opportunities for innovations in pedagogy linked to constructivist educational theory, which among other key ideas emphasizes the value of metacognition and reflection as part of the learning process. Based on the innovative use of web logs ("blogs") and online discussion forums within the ED271 course ("Instructional Technology for Teachers"), the article titled "Web logs and online discussions as tools to promote reflective practice" was published in the *Journal of Interactive Online Learning* (JIOL), and I was sole author. The article presents a qualitative, critical analysis of these tools to engage students in reflection about the uses of technology for teaching and learning, including for collaborative learning from peers in professional situations. JIOL is a publication of the National Center for Online Learning Research. The Executive Editor of JIOL is Dr. Cynthia S. Sunal (University of Alabama), who wrote in an email dated June 24, 2004 that, "at this point, we are at an 82% rejection rate." The article was published in Summer 2004 (Vol. 3, No. 1) and is available online at http://ncolr.org/jiol/archives/2004/summer/toc.html.

Currently, there are four research projects I am actively working on, two of which are explicitly aiming to bring closer my work in Education and at the Center for Science, Technology, and Society: A survey of Santa Clara County teachers, the development of an electronic portfolio system in the Department of Education, the role of education—and

educational technologies in particular—in the promotion of economic and social development, and new Internet-based technologies for online learning.

At present, I have collected data from over 200 teachers in Santa Clara County through an 8-page survey of their preparation to use technology, what uses (if any) they regularly have for technology in the classroom, and information on their personal background and other characteristics of their work situation that may help understand their levels of integration of technology. This study was funded through a University Research Grant (2003-2004). My plan is to generate two articles relying mostly on quantitative analyses to be submitted to peer-reviewed journals (current targets are *Educational Technology Research and Development* and the *Journal of Research on Technology in Education)* over the next 18 months. As of this writing, all the data have input for statistical analysis and I have started the process of "cleaning" the data and running the first exploratory analyses.

Another line of research I will pursue over the next three years is the use of electronic portfolios in teacher education, and as learning tools in general. (The website I have set up for this review process, http://epl.scu.edu/~pedrohr, is an example of a text-only electronic portfolio.) Building on the resources obtained through the grants from the Fletcher Jones Foundation, as well as the changing demands from the California Commission on Teacher Credentialing, our department has the opportunity to design a state-of-the-art electronic portfolio process that may encompass the candidates in the teacher preparation programs along with the undergraduates from Liberal Studies and the students working toward their MA degrees. Two areas of study I would like to pursue in this area are the design of hypermedia portfolios (going beyond collections of text documents) and professional development for faculty in schools of Education where electronic portfolio systems are implemented. I will aim to engage students in my MA program in Teaching and Learning with Technology to collaborate with me on this work.

In my work with the Center as Program Director for the Economic and Social Development area, I am writing an article to be submitted to a peer-reviewed journal looking at the first three years of the Technology Benefiting Humanity Awards, focused on the Education category. Target submission date is early 2005. I served as a judge in the Education category for the first two years (Summer 2001 and Summer 2002) and as chair of the judging panel the third year (Summer 2003), which also led to articles published in *STS Nexus*, the Center's flagship publication (in 2002 as co-author and in 2003 as sole author). In addition to serving in the Center's Steering Committee and organizing and supporting public symposia presentations, I was deeply involved in the planning and execution of the *Networked World: Information Technology and Globalization* international conference (April 2003), including organizing a full-day follow-up conference focused on *The Case of Mexico as a Developing Country*. I served as co-editor of the issue of *STS Nexus* based on the conference (Summer 2003). In addition, I anticipate significant involvement in the planning and execution of the Center's biannual conference, currently being planned for April 2005. As Program Director of the Economic and Social Development area, I have led regular meetings of multidisciplinary groups (Political Science, Communication, Computer Engineering, Mechanical Engineering, Law, Theater and Dance, History) of SCU faculty selected as Center Scholars that could

eventually lead to collaborative research projects and publications—for example, my current collaboration with Hans-Peter Dommel from Computer Engineering, a member of this group, on the use of an innovative IP (Internet Protocol) telephony system for synchronous distributed ("distance") education.

In sum, I see myself as a researcher contributing to a better understanding of a range of issues in educational technology (including teacher preparation, technology integration in teaching and learning, electronic portfolios as assessment tools, and the roles for educational technology in economic and social development), aiming to give these key issues greater visibility in both the research and practitioner literatures. Longer term, I expect to gradually broaden my research horizons to engage in international research projects led directly by me or in cooperation with a growing network of professional colleagues interested in my work. This strategy should allow me to better integrate my work as faculty in Education with my role as Program Director for the Center for Science, Technology, and Society, and perhaps also serve as a model for the kinds of interdisciplinary collaborations promoted by the Center and by the university's ideal of the "public intellectual."

Teaching

I have developed five courses at SCU, two for the teacher credential program (ED249—Interpersonal and Intercultural Communication, and ED271—Instructional Technology for Teachers [formerly ED305]) and three for the MA emphasis in Teaching and Learning with Technology (ED450—Education and Technology; ED451—Teaching with Technology; and ED454—Assessment, Evaluation, and Technology. In addition, I have supervised several students in Independent Study (ED310), provide advising to all students enrolled in the MA-TLT program, and through multiple meetings offer support to adjunct faculty who teach courses in the MA-TLT program.

As a teacher I have strived to become a constructivist educator. This means that I design my courses and each of the class sessions to be as student-centered as possible, aiming to engage them in meaningful learning tasks and offering challenging and rewarding experiences. Particularly for the ED271 course, my goal is to work with students (candidates for the teaching credential) to better understand how the constructivist philosophy and related pedagogies such as project-based, collaborative learning support the meaningful integration of technology into everyday teaching and learning.

In the MA courses, I consistently encourage my students to consider two different though somewhat complementary options, particularly for the "culminating projects." One is to think about doing something other than the traditional academic paper, whether it is a web site, a digital video, or a multimedia project. The other option is to write their academic papers as if they were going to be submitted for publication to a peer-reviewed journal. Both of these options have yielded interesting products (one of them a journal article co-authored with a student, Stacey Conradson) that have helped the students assimilate the material better, significantly enhance their critical and analytical skills, and made my job as teacher more interesting, challenging, and rewarding.

Following up on work that I started while still with the Apple Classrooms of Tomorrow program, since Summer 2002 I have taught sections of ED271 (Instructional Technology for Teachers) situated in a local elementary school, where students have the opportunity not just to learn computer applications for personal productivity and to enhance teaching and learning, but also to observe how "master" teachers and students work in an environment with high availability of technology. As noted earlier, this intensive one-week workshop experience has already resulted in a publication (Hernández-Ramos & Giancarlo, 2004), and I expect to continue this practice to further refine the model and perhaps create separate sections for multiple subject and single subject candidates (the latter assuming I can find a cooperating middle school or high school that fits the profile of the elementary school we are already working with). For university-based courses, access to both the Electronic Portfolio Laboratory and the mobile laptop cart translates into more opportunities for pedagogical innovation and meaningful integration of technology for teaching and learning.

Becoming a constructivist educator is an ongoing process. I believe my teaching will continue to improve with every course I lead or co-lead, working with students and faculty peers to better understand the possibilities afforded by technology to improve teaching practices and learning outcomes.

Service

My shared appointment means that I am never at a loss for service opportunities. In Education, in addition to student advising and attending all pertinent department meetings, my main contribution is as Director of the MA emphasis in Teaching and Learning with Technology. Beyond teaching (see above), this aspect of the job requires me to attend recruitment events, locate and hire adjunct faculty to teach MA courses, and direct students as they work on their culminating projects (thesis, curriculum projects, etc). I serve in the Masters Committee for the department, and have organized at least two faculty technology workshops related to the grants I administer (TSC and Fletcher Jones). I anticipate continued involvement in the planning and supervision of workshops for faculty particularly around the projects derived from the Fletcher Jones grants (laptops and handheld PDAs for faculty, and the development of the electronic portfolio system). Thanks to the Fletcher Jones grant funds, I hired and supervise Fern Silva, the Education Computer Lab Coordinator since December 2003.

Outside of the SCU community, as Assistant Professor of Education I have volunteered at Horace Mann Elementary School's technology committee since 2001, and led two workshops on technology integration for their teachers at their site and one here at SCU. In December 2001 I served in the dissertation committee examining Mr. Manuel Gándara in Mexico's Universidad Autónoma Metropolitana. In March 2002 I offered a two-hour workshop on multicultural awareness for 200 teachers at Lincoln High School. In 2002 and 2003 I was the Education department's liaison with the Internal Drive Foundation for their "Tech Camps" taking place at the SCU campus. In 2004 I gave a keynote presentation to the Panamerican Roundtable of Los Gatos/Saratoga (120 people in attendance), and have been selected as "Faculty Associate" of the George Lucas Educational Foundation for the 2004-

2005 cycle. Dr. Milton Chen has said about the people chosen to be in the first group of associates, "The Faculty Associates are inspirational leaders to showcase 'best practices' in education in the Digital Age as they represent GLEF throughout the country through this honorary designation. These accomplished individuals share our conviction about improving our schools through project-based learning in classrooms, by developing skilled educators and supporting involved communities."

During the 2003-2004 academic year I was asked by Don Dodson to serve in the search committee for the new Executive Director of the Center, to replace Dr. Jim Koch. The committee worked from September 2003 until April 2004, when it successfully concluded its work with the hiring of Dr. Geoffrey Bowker.

Thanks also to my Center involvement, I serve in the Steering Committee for the new Center for Nanostructures, led by Dr. Cary Yang (Engineering). The Center for Nanostructures is "a regional alliance representing many of the major institutions of higher learning with strong educational missions, in partnership with a set of middle school, high school, and community college districts."

At the request of Dean Sonny Manuel, S.J., I worked to prepare the presentation on the new School of Education, Counseling Psychology, and Pastoral Ministries delivered to the Board of Trustees in May 2003.

At the university level, during the 2002-2003 academic year I served in a committee chaired by Ron Danielson gathered to advise on the selection of a new course management system, to replace the Prometheus system. The following year I was selected to participate in the Ignatian Faculty Forum. Tracey Kahn (Psychology) and Juan Velasco (English & Modern Languages and Literatures) provided leadership in this unique experience for current and future campus leaders that allowed me to learn more about Ignatian spirituality, Jesuit values and history, and benefit from the insights and wisdom of a trusted and supportive community of colleagues. I will continue my participation during the 2004-2005 academic year.

In closing, I am grateful to the university, to my colleagues, and to my students for the opportunity to work and learn here, and look forward to the opportunities and challenges ahead with great enthusiasm.

Sincerely,

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&
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