

Inventory of Learner-Centered Teaching at USC

Provided by the Committee on Academic Programs and Teaching (CAPT) Learner-Centered Task Force 2005-2006

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Charge of the Committee

This committee was formed on behalf of the Academic Senate and the Office of the Provost to survey the state of learner-centered education at USC, with particular attention to sustainable best practices that that could serve as models. Further, the impetus drives from the university's recently revised Strategic Plan and its emphasis on learner-centered education. In this context, the Strategic Plan was purposely broadly written to allow the shaping of learner-centered education at USC to reflect the university's strengths and to embrace the range of teaching and learning modalities that may differ by discipline. The inventory offered below is one that we present as representative, but likely not fully comprehensive. Our investigation found that many forms of learner-centered education have been in place at USC for several recent years in response to the emerging pedagogy in this area nationwide and in keeping with fertile interests at USC to improve our efforts on behalf of our students. The committee trusts that wide areas of instruction at USC can gain from these examples and that this document will serve as a viable aid to fellow scholars. Below are current examples of learner-centered instruction at the university.

Keck School of Medicine

The medical curriculum was revised in 2001 to change to a more learner centered educational experience. Instead of having didactic courses in various scientific disciplines during the first two basic science years (e.g., biochemistry, pharmacology), the observation that medical students really needed to understand the science in the context of body systems (Organ Systems) and the pathology as it related to disease led to an integrated curriculum with science and medicine being taught simultaneously and in coordination with each other. This was based in large part on the needs as expressed by the students (who participated on all curricular revision committees). The curriculum has also been revised to emphasize the development of life-long learning, as the body of medical knowledge has expanded exponentially over the last 20-30 years—and is nearly impossible for individual students to master in its entirety. Thus, less emphasis is placed on didactic teaching and examination of facts and rather more emphasis is placed on problem solving.

In addition, certain laboratory based coursework (gross anatomy, neuroanatomy, pharmacology) is pursued with the idea that the interactive experience of the student with instructors as well as their peers in the study of these areas will lead to a type of learning that is different from the standard didactic lecture format.

Last, a number of individual lecturers have also taken advantage of the Audience response system that is available for medical student lecturers, in order to perform mid-lecture assessments of whether the students have acquired a particular concept or are able to apply concepts to problems as they are being taught. This can be used as an interactive teaching tool, as well as a way to assess directions students are interested in pursuing in their studies.

Medical Curriculum: Clinical Years

The nature of medical teaching during the clinical years is learner-centered in that students or trainees are trained in small groups by residents, fellows, and attending physicians.

This is interactive training and results in tailoring the clinical experience to the needs of the individual trainee. This is probably the most efficient way to prevent areas of major student deficiency in terms of their ultimate clinical responsibilities.

PPP Cases

As an example of the problem solving nature of the new curriculum, a database of Patient Practice Profile Cases (PPP Cases) has been developed. These are approximately 200 of the most common disorders seen by internal medicine or family medicine physicians. The Database is designed as a series of clinical problems, and solution of these problems (diagnosis) is based on the student's understanding of basic science and clinical information or their ability to acquire that information. These cases may be presented in multiple years, and across multiple organ systems with increases in complexity and sophistication with increase in expected experience and knowledge.

Introduction to Clinical Medicine

A part of the medical curriculum that has been particularly well regarded by external accrediting bodies has been the KSOM course called the Introduction to Clinical Medicine (ICM). ICM is a small group learning process directly related to the acquisition of both interviewing and physical diagnostic skills by first and second year medical students. Groups of 6 students meet with a faculty preceptor and with patients once each week for an entire morning. The curriculum for this course includes one-on-one mentoring of the preceptor with the individual students, observation of student-patient interactions, and specific feedback on best practices in learning these clinical skills. Teaching clinical skills is further accomplished by biweekly workshops in which specialist physicians meet with the small groups of students and provide hands-on learning for certain clinical skills (e.g., auscultation, ophthalmologic examinations, etc.).

Professionalism and the Practice of Medicine (PPM)

In this required course, each group of 24 students (4 ICM groups) is provided with two faculty mentors: one basic scientist and one clinician. The 24 student groups meet on a weekly basis for 2 hours. Within the larger groups, issues are discussed and worked on by the smaller 6 person groups. The course provides a curriculum encompassing professional behavior, ethics, empathy, how to work effectively in groups, career mentoring and counseling, and cultural competence. In addition, students are required to lead sessions and to give presentations on both case reports and areas of clinical importance for their peers. They are given peer and mentor evaluations of their performance as constructive feedback. These are aspects of a career in medicine that are not traditionally taught in medical schools but ultimately play a very large role in the ultimate effectiveness and success of the student as a professional physician.

Curricular Services.

Medical students receive access to all lectures, labs, PowerPoint, and resource material on the medical school based MyMedweb, an online, interactive service. Students may participate in on-line quizzes and access to outside material suggested for further enrichment. The school is in the process of developing video streaming of lectures for the convenience of the students.

MSTP Program and student tutoring services.

The medical school supports the Medical Scholar Training Program (MSTP) and student tutoring services. If individual students exhibit difficulty in mastering the material required for competency in individual disciplines, the school sponsors and pays for one-on-one tutoring with more senior students who have exhibited strength in those areas. The MSTP program is a program where by students who have exhibited outstanding performance in certain subject areas set up individualized review sessions for groups of more junior students. The school provides a stipend for these students as well.

Medical Outreach programs/ Tom Bradley Mini Medical Schools/Juvenile Hall

There are numerous instances of outreach programs to all levels of K-12 schools that are nearby. These programs, usually operated by motivated medical students, fulfill the need to allow community children to experience what medical and health education involves, and presents the possibilities of careers in these professional areas to them as legitimate goals. Juvenile Hall, located just adjacent to the medical school also provides an opportunity for dedicated medical students to provide important health information to juvenile detainees.

Graduate Programs based at the KSOM at USC

While graduate student training by its very nature is “learner-centered” because of the one-on one mentorship of the advisor with the student, there are also aspects of the graduate programs that are also themselves “learner-centered”. Surveys of student needs and interests are performed routinely in order to assess if the students are receiving the types and quantities of the training that they wish for and need. The students and faculty participate in career advice days. Students in several programs are required to attend and participate in a one hour weekly graduate level seminar series, where they are required to present their own data, then are given immediate feedback on clarity, scientific critique, and presentation skills. This is of tremendous value in adding to student confidence in presentations in their formal career. In addition, even the examinations are specifically tailored to the interests and training of individual graduate students in a couple of these programs (Systems Biology and Disease Program, the Neuroscience Graduate Program).

Dental student training.

The curriculum at the School of Dentistry may also be regarded as a learner-centered curriculum, in that it is a true problem-based curriculum. In the initial years, groups of 6 students are aided by a facilitator in solving clinical “problems” that lead to mastery of information that will be required in their career. Once they enter their clinical years, acquisition of physical skills required for oral health management are achieved by one-on-one training similar to that seen as effective in most clinical settings.

Marshall School of Business

The Marshall undergraduate program continues to increase it’s International Education Programs. Recently four new semester abroad programs were approved bring our total number of programs to twelve. The new programs are HEC in Paris; ESADE in Barcelona; KU in Seoul; RSM in Rotterdam. Targeted are new semester abroad programs in Japan, Mexico,

Germany, India and Thailand for AY 2006-2007. For AY 2005-2006, over 100 Marshall students will attend semester abroad programs.

The Marshall undergraduate program also continues to focus on learner-centered issues. The program, has added another on-line offering to our basic business curriculum (BUAD 306 Business Finance), which brings the total number of required courses with at least some distance-learning component to five.

Leventhal School of Accounting

In 2006, the Leventhal School of Accounting will offer its third annual Summer Leadership Program for more than 50 high-school students intended to inform underserved minority youths about careers in accounting, the university experience and what USC and the Leventhal School have to offer. During this period students participate in a challenging academic program involving accounting, finance, and a group case analysis and presentation. Students also work with counselors from local accounting firms, many of whom are recent USC graduates and visit local firms and businesses. Special sessions to which parents are invited discuss the university admissions and financial aid processes. Already, a number of program graduates are admitted to or attending USC. The success of the program is receiving national attention and is likely to be a model for other universities.

A new addition includes ethics initiative for our undergraduate students. After a series of problems in the accounting profession, the Leventhal Board of Advisors recommended adopting a creative approach to exposing our students to ethical decision-making frameworks. Beginning with the fall of 2005, all entering accounting majors will attend a one-unit class that reviews a set of ethical decision-making frameworks, sponsors panel discussions from local ethics professionals, and weaves ethical decision-making exercises throughout the curriculum.

Finance and Business Economics

In an effort to enhance FBE's learner-centered approach to teaching, two courses are being delivered in a distance learning format, including Business Finance (BUAD 306) in the Fall of 2005 and Legal and Regulatory Environment of Long-term Care (BUAD 499) in the Spring of 2005.

As a part of the curriculum initiatives undertaken in 2004-2005, the faculty have developed the FBE/CIS Certificate Program in Financial Analysis and Valuation for both the MBA and undergraduate programs. The Center for Investment Studies is actively involved in bringing highly influential researchers and practitioners to meet with the students and discuss topics of high societal importance.

Management and Organization (MOR)

Learner-centered education has long been central to MOR teaching. Many of our courses include experiential training and personal development, particularly those in leadership (MOR 470 & 571), teams (MOR 473), interpersonal behavior (MOR 431 & 567), and negotiation (MOR 569 & 469). These courses tailor learning to the experience, skills, and knowledge that students bring with them to the classroom. Our required organizational behavior course (BUAD 304) has pioneered the use of the video capture room and the remote training of undergraduates.

Many of our courses subscribe to the use of “hands-on” projects in the field and include field projects aimed at helping local business. One of our undergraduate electives (MOR 431) involves an immersion weekend where students engage in service learning projects in the local community.

Marketing

Indicating the importance of a learner-centric philosophy, marketing faculty are regularly encouraged to innovate in the classroom. Nine of the 23 marketing faculty members (nearly 40%) have won one or more student, Marshall, University or National teaching awards. Several have also won awards for teaching innovation.

To further build learner-centric capabilities, weekly lunch time gatherings held by faculty members which provide a sharing of resources on learner centric teaching as well as tactics and technologies for facilitating a learner centric curriculum. Course offerings have evolved and will continue to evolve to accommodate content changes in the discipline. Such curricular changes will require both the adjustment of the content of existing course and the addition of new courses proposed for the upcoming academic year. Faculty are also encouraged to take advantage of the teaching mentoring options offered by the Center for Excellence in Teaching.

Center for Management Communication

The Center for Management Communication has always taken a learner-centered approach to fostering the communication skills of our students. The effort devoted to one-on-one conferencing in virtually all of CMC’s courses, for example, reflects the belief that education should be tailored to meet the individual needs of students. An example of the learner-centered orientation of the CMC includes *BUCO 221: Cross-Cultural Business Communication for Non-Native Speakers*. This course addresses the special needs of the growing cohort of non-native speakers whose language skills and knowledge of American culture, both in and out of the classroom, are not yet adequate for academic success at USC. To help achieve its goals and those of its students, the Center was among the first at USC to use technically advanced programs, such as 1) personal response systems (clickers) in small classes (20-30 students), 2) USC web-based and podcast blended/online advanced writing class, 3) use of electronic portfolios for document submission and writing reflection, 4) multi-course blogging (wiki) site, 5) advanced writing course collaborations with more than 50 community not-for-profit agencies.

Center for Effective Organization

In 2004, a \$1 million fixed-income fund was created to meet the needs of students who wish to have hands-on experience and career in managing fixed income assets. The SIF Program, which involves a year-long, hands-on security analysis, trading, and portfolio management, continues to elicit valuable experiential learning for its students by allowing them to manage a total of \$2.6 million of the university’s endowment fund. The Center also advances the students’ experience through investment management industry guest speakers and company visits. During these visits, students meet with analysts and fund managers in roundtable Q&A sessions and tour their facilities to learn first hand how the company manages investment assets.

LUSK Center for Real Estate

The Lusk Center engagement with learners includes students in degree and executive programs—both at USC and beyond. The Center supports professional learners via various conferences, retreats, forecasts, and research publications. Further, the Center engages actively to support degree students from undergraduate through Ph.D. via scholarship and research funding, case competitions, mentorship, student clubs, speaker series, career placement, alumni activities, and the like as are discussed above. The Center supports the Ross Minority Program in Real Estate Finance and Development, which brings real estate skill-sets to professionals engaged in economic and real estate development of underserved, minority communities. In past years, the Center has engaged in professional education programs via distance learning and like methodologies. Further, the Center seeks to support and augment the degree and executive education programs of SPPD and Marshall as well as to create externalities and scale economies across the schools as pertain to those programs.

eLearning

The primary role of the Marshall eLearning group is to produce and develop online courses and associated support materials. Our overall mission is to enhance the learning process via web-based and/or video technologies. Currently, eLearning has the capacity to digitally record activities using multiple cameras, microphones, and specialized computer hardware/software. Course lectures and content can be recorded on multiple formats within the department's 41-student classroom facility. As of this date, six (6) undergraduate and four (4) graduate courses have been, or are currently being offered online. All lectures for these courses are streamed live, via the web, and are made available to students from any location in which they have internet access. Support materials, notes, and any special assignments are also made available online.

Experiential Learning Center

The USC Marshall School of Business is one of the few business schools that provides “experiential learning” opportunities to its students. This is a teaching approach which complements the more traditional methods of lectures and case studies. The traditional methods of teaching place a heavy emphasis on the faculty as the “expert” and the student as the “recipient” of information. At the ELC, the emphasis is placed on individual learners who become “active creators” of their own learning. Experiential Learning Center is committed to bridging the gap between “theory” and “practice” by exposing students to “business-like situations” that assist them in the practice and development of critical management skills. The Experiential Learning Center (ELC) is a unique training facility used extensively to support Marshall's graduate and undergraduate programs. Through the ELC, students are offered numerous opportunities to participate in hands-on training sessions designed to improve their presentation, negotiation and organizational skills. By the use of structured exercises, role-play, videotaping and playback students learn in real-time, how to be more effective communicators and decision makers in business environments.

School of Cinema-Television.

One of the reasons many CNTV courses are learner centered already is that they are based on the idea of learning by doing. Students develop projects over the course of the semester and what they learn is applied directly to their works in progress. They "own" the learning, both the theory and the implications, immediately because they need it to improve and develop their own work. The learning is embedded in the doing which is an important part of the "learner centered" approach.

1. For many years, much of what Cinema-Television has done in its classrooms has been learner-centered. This is so because – particularly in the divisions of production, writing, interactive, animation and digital arts, and producing – teaching is done in small classes that frequently devolve into *one-on-one instruction opportunities* (e.g., “table screenings” in which instructors critique works in progress or writing instructors work through treatments or screenplays in fine detail). This approach draws from traditions in studio arts and incorporates the notion of the ‘critique’ across many types of classes, blending theory and practice.

2. Even more ‘traditional’ lecture classes include *robust multimedia*. Many faculty in Interactive Media and Critical Studies Divisions regularly incorporate new forms of social software into their classrooms, including blogs and wikis. Other faculty use a variety of visual and moving image materials in class to enhance lectures and the learning environment. Marsha Kinder has taught course that engage both graduate and undergraduate students in creating museum exhibits.

3. The School brings together several researchers and faculty members whose work is central to the creation of new educational programs. *The Institute for Multimedia Literacy*, now housed in the School of Cinema-TV, is directed by one of our faculty, Professor Anne Balsamo, and employs a large cohort of our current and recent graduate students (providing them a kind of learner-centered TA training). The educational programs offered by the IML and the Interactive Media Division builds on the literacies that have already been transformed by the key technologies of the digital age -- computers, multimedia, and visualization devices – and encourage new modes of expression and authorship. The new *IML Honors Program* is likely the first of its kind in the country and serves our entire campus. It also incorporates e-portfolios.

4. Other learner-centric pedagogical and research initiatives tie in to USC’s interest in *computer games and learning*; these include Marsha Kinder’s Russian Modernism project, Tara McPherson’s Learning Games initiative, and Tracy Fullerton’s game studies research. Each of these projects models theory-in-practice, providing their respective research teams with the opportunity to examine best multi-literacy practices in diverse educational settings, ranging from the college campus to the urban high school.

5. The School has *a well-developed internship program* that provides students with valuable experience working in various aspects of the film, television, animation, and new media fields.

6. Courses taught in cooperation with USC's *Trojan Vision* allow students to work together in a team-based format to produce weekly television shows.

7. Division of Animation and Digital Arts (DADA) student Valerie LaPointe is *artist in residence at the Wrigley Institute for Environmental Studies*. Valerie is working on her thesis film about global warming mentored by Dr. Tony Michaels. As part of her residency Valerie works with the Biological Science students to help visualize their research using animation and digital media. This will be a semester long residency and several other DADA students are scheduled to attend in the following academic year to work with Dr Michaels in a similar fashion.

8. DADA has formed a partner by design relationship with Adobe Systems Inc. This connection provides us with software and hardware to help in our education environment. It also involves *an Adobe scholarship* whereby a DADA student is trained in the latest technology and brings this back to the classroom where he/she can assist fellow students in understanding the latest techniques and help in a flexible learning environment.

School of Education

The California Commission on Teacher Credentialing (CCTC) has established standards and guidelines for the approval of programs that prepare teachers for K-12 schools. Under California state law, all teacher preparation programs in the state must be approved and accredited by the CCTC whether administered by a university, a school district, or other agencies. The pedagogy used in the implementation of the teacher preparation program is student centered. The syllabus for each course includes learning outcomes that are directly linked to the teacher performance expectations established by the CCTC, course assignments and in-class learning experiences focus on the intended learning outcomes, assessments in each course are directly linked to the expected learning outcomes, the progress of individual candidates is carefully monitored, candidates are provided immediate feedback on their performance, and provided opportunities to improve their performance. It is particularly important to point out that the imbedded signature assignments scaffold learning across courses in the program. Ultimately, the course content in the teacher preparation program prepares candidates for direct application of knowledge and skills in real classrooms during student teaching and other field experiences.

The below table offers the assessment practice used in the School of Education.

Learner-Centered Education in Preservice Teacher Education

<i>Teaching Performance Expectations (skills candidates are to acquire)</i>	<i>Embedded Signature Assignments (Program required learning experiences)</i>	<i>Teaching Performance Assessment</i>	<i>Data Collected</i>
TPE #1: Specific	Review of Lesson Plan	Candidates are	Individual electronic

<p>pedagogical skills for subject matter instruction</p> <p>TPE #2: Monitoring Student Learning During Instruction</p> <p>TPE #3: Interpretation & Use of Assessments</p> <p>TPE #4: Making Content Accessible</p> <p>TPE #9: Instructional Planning</p> <p>TPE #13: Professional Growth</p>	<p>Database: Each teacher candidate is required to submit two lesson plans a week to their electronic folder. Each lesson plan is developed for teaching a particular standard and the objectives to guide the teaching and learning of that standard. The lesson plan must justify the model of teaching in regards to introducing, reinforcing and/or extending the standard and delineating the specific script for the teacher and student roles and experiences assigned to each step of the model. Throughout the course of their professional development, teacher candidates have access to their entire lesson plan database and can revise them at any time. It is a continual and interactive learning source. (Courses EDUC 424/5A and 548A/9A)</p>	<p>assessed on the ability to plan instruction; devise appropriate assessments; to reflect on and analyze their teaching strategies; and the impact of their teaching on students' learning and comprehension.</p>	<p>lesson plan database is reviewed by Field Supervisor and a Cooperating Teacher. Both have access to the electronic database.</p> <p>Observations of classroom practice.</p>
<p>TPE #2: Monitoring Student Learning During Instruction</p> <p>TPE #3: Interpretation & Use of Assessments</p> <p>TPE #5: Student Engagement</p> <p>TPE #8: Learning about Students</p>	<p>Equity and Diversity Project (Course EDUC 204).</p>	<p>Candidates are assessed on the ability to plan instruction and devise appropriate assessments; to reflect on and analyze their teaching strategies; the impact of their teaching on students' learning and comprehension; and their success in developing and using academic language.</p>	<p>Paper evaluated and graded by Professor(s)</p> <p>Observations of classroom practice.</p>
<p>TPE #2: Monitoring Student Learning During Instruction</p> <p>TPE #3: Interpretation & Use of Assessments</p> <p>TPE #4: Making</p>	<p>The Instructional Planning and Presentation Project requires teacher candidates to compose a complete lesson and assessment plan and to videotape the class in which they teach it. This assignment asks teacher candidates to identify in writing opportunities for students to use relevant skills and strategies to comprehend and/or compose text.</p>	<p>Candidates are assessed on the ability to plan instruction; devise appropriate assessments; to reflect on and analyze their teaching strategies; and the impact of their</p>	<p>DVD presentation to Professors (Methods and Field Work)</p> <p>Observations of classroom practice.</p>

<p>Content Accessible</p> <p>TPE #5: Student Engagement</p> <p>TPE #10: Instructional Time</p> <p>TPE #11: Social Environment</p>	<p>The teacher candidate must then take clips of their video and describe the integrity of the teaching model selected as well as analyzing the students' learning. The teacher candidate must also include a chart accompanied by 3-4 pieces of student work to illustrate the range of students' success. The final piece is writing a commentary analyzing the extent to which students met the learning goals and identifying the next step in instruction. (Courses EDUC 424A/5A and 548A/9A)</p>	<p>teaching on students' learning and comprehension.</p>	
<p>TPE #4: Making Content Accessible</p> <p>TPE #5: Student Engagement</p> <p>TPE #6: Developmentally Appropriate Teaching Practices</p> <p>TPE #8: Learning about Students</p>	<p>The Psychological Foundations Project requires teacher candidates to plan an engaging, meaningful, and developmentally-appropriate learning activity (in any subject) for their students. The teacher candidate is to focus on one learning activity and at every step are to ask themselves the following: "why have I made this choice? What theories of developmental psychology support my decisions as an instructor? The culmination is a final paper in which the teacher candidate presents their conclusions and supports them with substantial evidence. (Courses EDUC 205 and 503)</p>	<p>Candidates are assessed on the ability to plan instruction and devise appropriate assessments; to reflect on and analyze their teaching strategies; the impact of their teaching on students' learning and comprehension; and their success in developing and using academic language.</p>	<p>Paper evaluated and graded by Professor(s)</p> <p>Observations of classroom practice.</p>
<p>TPE #4: Making Content Accessible</p> <p>TPE #5: Student Engagement</p> <p>TPE #6: Developmentally Appropriate Teaching Practices</p> <p>TPE #7: Teaching English Learners</p>	<p>The Theory Into Language Project requires teacher candidates to conduct an observational inquiry of a classroom with students for whom English is not the first language (4 observation sessions). Based on the observations, the teacher candidate is to choose one theory of language and analyze its effectiveness in promoting a comfortable and supportive context for learning and teaching the language. The paper should also address how employing a different theory might have improved learning outcomes and the quality of the learning context</p>	<p>Candidates are assessed on the ability to plan instruction and devise appropriate assessments; to reflect on and analyze their teaching strategies; the impact of their teaching on students' learning and comprehension; and their success in developing and using academic</p>	<p>Paper evaluated and graded by Professor(s)</p> <p>Observations of classroom practice.</p>

	in the particular classroom you observed. (Course EDUC 409)	language.	
TPE #7: Teaching English Learners TPE #13: Professional Growth	The Literacy Case Study requires teacher candidates to perform a comprehensive assessment of an at-risk student using concepts about print, phonemic awareness, comprehension, reading fluency, spelling and writing fluency. The teacher candidate will then develop an instructional plan based on the information from the assessments including a student profile determining the student's strengths and needs in reading and writing as well as specific instructional strategies that include examples for instruction in a variety of classroom settings. (Courses CTSE 410/411 and 511/512)	Candidates are assessed on the ability to plan instruction; devise appropriate assessments; to reflect on and analyze their teaching strategies; and the impact of their teaching on students' learning and comprehension.	Video Presentation by pairs of students to professor and class Observations of classroom practice.
TPE #12: Professional, Legal and Ethical Obligations TPE #13: Professional Growth	E-folio Journal Review: Throughout their professional development, teacher candidates submit electronic journal entries to their e-portfolios. The final E-portfolio Journal review requires teacher candidates to write a final piece that combines thoughtful reflection and analyses. Teacher candidates are also instructed to review their coordinators feedback in the e-portfolio as well as their previous journal submissions. These submissions address the candidates' initial understanding of professional, legal and ethical obligations while also tracking the progression of these beliefs. (Courses EDUC 424/5B and 548/9B)	Candidates are assessed on the ability to plan instruction and devise appropriate assessments; to reflect on and analyze their teaching strategies; the impact of their teaching on students' learning and comprehension; and their success in developing and using academic language.	Individual electronic journal database by Field Supervisor and Cooperating Teacher Observations of classroom practice.

School of Gerontology

Offered below are a few examples of teaching practices that are more "learner-centered" from the School of Gerontology. The need to engage students via the Socratic method occurs in all classes. Gerontology tends to have small classes, which facilitates this type of interaction and

gives all students a prime role at public speaking. The school's view is that the professor put students at ease when using this approach.

1. Gerontology by its nature is multi-disciplinary. Aging is examined and taught from desperate disciplines like sociology, demography, epidemiology, biology, medicine, religion, law, public policy, and urban planning and housing. We offer an introductory level course entitled "**GERO 200 - The science of adult development**" that introduces the student to all of these fields of investigation under the common social issue umbrella of human aging. The lead instructor weaves together the disciplines to show how they interact (for example poverty and cardiovascular disease) to generate an outcome. If guest lectures occur, the lead instructor is present to initiate discussion. There is also an on-line version of this course and the School of Gerontology makes this course available to its "residential" students to supplement the official text.

2. **GERO 491 - Practicum in Gerontology (social science track) and GERO 495 - Practicum in Geriatric Care (health science track)** : The practicum is a requirement for every undergraduate student in Gerontology (majors and minors). A faculty member in charge of this program places each student into an approved site in the surrounding community (Assisted living facilities, Kaiser Permanente, Alzheimer's Association, Area Agencies on Aging (Government), USC School of Medicine). The students work with mentors at these sites who grade their performance and the lead instructor brings all the students together for one hour each week to have a round table discussion of their practicum experience. Students get a real feel for career direction from this experience.

3. **GERO 414 - Neurobiology of Aging**: The provost office awarded the lead instructor of GERO 414 teaching initiative grant this year to develop a web based learning tool to be used during lectures and to be available to students at all times. The course is a "pre-med" course where students are challenged to become practicing physicians in the field of neurology. The interactive web tool will be a virtual patient with tabs (pathways) describing symptoms, etiology, methods of diagnosis and state of the art treatment. Each module will have interactive 3-D models to show the biological process (i.e. illustration of an antidepressant drug blocking transmitter reuptake) and there will be video clips of actual patients suffering from diseases of the aging brain as well as video clips showing how they respond to treatments. Voice over and text will be present during all phases of the course. An important goal is to make this web-tool available to all instructors at USC.

School of Policy, Planning, and Development

Curriculum and Degree Programs

The SPPD curriculum has increasingly become a collaborative product with greater integration between the various degree programs and greater choice for students in meeting their intellectual and career needs:

Internships

Internships play an integral part of the educational experience at undergraduate and graduate levels:

The undergraduate program degree (B.S., Public Policy, Management, and Planning) requires all students to serve in an internship (16 hours per week for a semester) and take an accompanying internship seminar for academic credit that provides an opportunity to reflect on the internship experience in relationship to the courses they have taken. (Several students take more than one internship during their undergraduate career, but are expected to enroll in the seminar only once.)

For the past four years, in conjunction with the Joint Education Project, SPPD has sponsored paid summer internships (USC Summer Public Service Internship) for students who have successfully completed PPD 372 Public Service in an Urban Setting. As a part of the class, students volunteer to a local nonprofit during the spring semester, and the internship allows the student to continue working 20 hours per week for two months at the organization during the summer in the areas of fund raising, grant writing, and program development.

Service Learning, Experiential Learning, and Community Based Learning

Several SPPD classes, especially at the undergraduate level, assign projects requiring students to study “real life” policy and planning issues and problems faced by communities, organizations, and individuals. These range from a class devoted specifically to service learning and student service projects in the greater USC community to courses that assign term papers based on community field observations and interviews.

Washington D.C. Semester

For the past 20 or 25 years, the former School of Public Administration and the current School of Policy, Planning, and Development offered the Washington DC Semester course. Approximately 25-40 undergraduate students per year from throughout the university spent a semester in Washington taking courses on national government, politics, and issues as well as serving in an internship. Following the closure of the USC Washington DC Public Affairs Center, USC students attended American University’s Washington program and SPPD served as the USC coordinator. Recently, the arrangement between USC and American University was discontinued.

Career Services

As a professional school, SPPD offers opportunities that enable our students to connect with representatives of the various professional constituencies of the School. These include career fairs, mentoring programs, networking events, career works, internships, and externships (the opportunity for a student to “shadow” a professional for a few days during spring break

School of Theatre

The School of Theatre intrinsically utilizes learner-centered teaching as exemplified below:

For the Junior BFA class: each student meets conjointly with the three theatre faculty in Acting (Jack Rowe), Voice (Brent Blair) and Movement (Stephanie Shroyer). The faculty discuss with the student his/her progress and the synergies across the three areas.

The School has a service learning minor Applied Theatre Arts, which organizes internships in service learning throughout the community.

In some sense all studio classes (whether in acting, movement, dance, voice, etc.) are learner centered because the students' work is the central focus during the class and the teachers often function as coaches. Teachers and classmates together reflect upon and assess work within the studio setting.

The School's Freshman course in "Text Studies for Production" (a course that enrolls approximately 125 students), has utilized a new type of assignment. Students are assigned a contemporary play that is not read as part of the course (one play per student); they apply knowledge gleaned in the course to their own play in staggered assignments that focus on literary interpretation, visualization through set and costume, casting, etc. By the end of the term they have developed a full length production plan for the play (about 25 pages). The last class is a course wide conference in which students share their production plans with each other.

Many of our School's academic courses include practical components—blending theory with practice. For example, in "Acting Theory" students read historical texts but also perform according to the various theories studied. Over the course of the term, students perform using 18th c. gestural modes, inner monologues, and active analysis. "Comedy of Manners" often includes work with fans in order to understand modes of communication used in the 18th c. "Shakespeare" offers the opportunity for students to synthesize what they have learned by creating staged scene projects as the culmination of the class.

The School's productions, special internships (such as the one recently created for our MFA in Acting with Center Theatre Group), and regular internships are considered learner-centered since they often work as capstone experiences that synthesize a student's application of classroom methods to real life circumstances.

Thorton School of Music

Learning experiences are inherently learner-centered in the School of Music, including the many performance and composition programs, which are described further below.

Performance Degree Programs

The teaching of performance-based music for instrumentalists and vocalists is learner-centered in nature. Undergraduate performance and majors take six semesters of private instruction where in weekly individual lessons instructors focus on the students' unique needs in offering constructive criticism to support improvement in technique and expression. Often, students decide what pieces they will learn and perform, although sometimes pieces may be assigned to focus the student on a specific problem area. Therefore, the individual student's musical interests determine what he or she will perform, aspects of his or her course of study and, in turn, the direction of one's career.

Performance majors also participate in several other key activities.

1. Students studying the performance of individual instruments or groups of instruments (woodwinds for example) take part in weekly masterclasses where students perform and performances are analyzed and critiqued. Instructors provide feedback but students are also encouraged to offer feedback on the performance of their peers, and tips on the solution of performance and interpretation problems. This helps the students develop skills in problem identification and the application of their own experience in suggesting solutions.
2. At the end of each semester, each student performs a jury before the department faculty where they receive written feedback on their performance and presentation. This process allows the faculty to assess the student's incremental progress and make specific comments to keep the student's development on track.
3. Each student performs must perform a senior recital (some departments also require a junior recital) to demonstrate the mastery of their instrument, musical expression and their knowledge of the appropriate musical literature. Most often, students choose the literature to perform on their own recitals.
4. All students pursuing performance degrees participate in ensemble rehearsals and performances as part of their education. Students in chamber (small) groups, in both the classical and jazz areas, are largely responsible for choosing their own repertoire and rehearsing the ensemble. These groups also meet weekly with an ensemble coach who mentors their progress and helps prepare them for concerts and educational outreach performances.

Composition Degree Students

The study of musical composition at USC parallels much of the learner-centered activity found in the performance program including private lessons, masterclasses and student recitals. It should be noted that USC also acts as a lab for their compositional endeavors. Student compositions are read regularly by school ensembles - most notably, the school symphony, wind ensemble and contemporary music ensemble. During these sessions the student composer can gauge their success and find problems in their compositions' structure, arrangement or orchestration that need additional work. Among the community of composers, these sessions are held in such high regard that professional composers often bring new works to the university campus for a first reading.

A prime example of student composers learning by hearing their own works played in a live setting is with the students in the *Scoring for Motion Pictures and Television* program. In this program, students compose original music for a scene from a film of their choice. The students begin the process by watching the original scene and discussing its dramatic and musical direction with an instructor. In some cases the original composer or director of the film will attend these "spotting sessions." These professionals mentor the students through this complicated compositional and problem solving process. After composing new music for the scene, the students create scores and parts for performance and have their worked recorded (to picture) by an ensemble of professionals at professional scoring studio

Other areas of study at the School of Music are not inherently learner-centered. Some examples of how the faculty enables the students to participate and direct their learning are found in the *Music Industry program*...

Live Concert Production (MUIN 425)

Students learn through constructing and managing projects of their own design and by observing the successes and failures of other students in the class. By the end of the semester each student chooses a band(s), secures a venue, creates a marketing plan and budget, promotes the event and finally produces a concert/performance.

An advanced section of this class will be offered for the first time in the fall of 2006. In this course, students will work with the concert production staff at a local venue such as the Greek Theater, Disney Hall or Shrine Auditorium. Students will gain hands-on experience and mentoring through interaction with professionals in the design and management of a large-scale event.

Music Media Lab (MUIN 496)

Each semester the students in this class identify a problem currently facing the music industry such as illegal file sharing or consolidation in the radio industry. As a team they research and analyze the problem and present their findings, solutions and suggestions to a panel of industry representatives at the end of the semester.

Music Distribution and Publishing (MUIN 370)

The sections of the class that focus on publishing contracts, distribution contracts and marketing plans are aimed at developing the students' critical thinking and analytical skills. Students are divided into teams and given a contract or marketing plan to evaluate. The student teams analyze the assignment and present their findings and conclusions to the class. The instructor then discusses the team's performance, important areas the students missed or omitted and the thought process that is necessary to thoroughly discover the substantive information. Student teams also explore their grasp of the material through engaging in one-on-one or team vs. team negotiating of licenses, contracts and budgets.

Internships

Students in the Music Industry program must complete eight units of internship. While the department maintains lists of contacts and relationships with companies and the industry, it is the responsibility of the individual student to identify an area of the industry in which they wish to intern and secure an internship position. In addition to the real-life interaction and experience, the students also begin networking and developing contacts—an important element of success in the music industry.

Special Programs of Note:

The Thornton Outreach Program

Students often learn more effectively through the process of teaching others. By organizing and presenting their own knowledge of a topic or skill they clarify their own understanding. With that in mind, the School of Music recognizes the importance of producing well-rounded, versatile musicians. The outreach program provides experience with ensemble, classroom and private instruction; conducting jazz ensembles; lesson design and delivery;

classroom management skills; music presentations in assemblies; and the preparation for and leadership in musical performances by the young students.

Each academic year, music majors attend a training session at which they begin to develop the skills required for their teaching position. Throughout the year, they continue to be mentored on defining goals, developing lessons and improving delivery skills. Programs offered through the USC Thornton Outreach Program include classes in general musicianship, guitar, violin, and elementary chorus. Additional programs for local children include jazz ensembles, music assembly performances, “Meet the Instruments,” and music workshops for classroom teachers.

The Thornton Protégé Program

The skills required to successfully launch a performance career are often overlooked in the traditional music conservatory education. The Thornton Protégé program identifies students who have outstanding potential and groups them in a network of performers, composers, arrangers and industry specialists to develop career plans and test ideas outside of the USC campus and within the music marketplace. The Protégé program provides mentoring (from the faculty and industry), administrative support and financial support. At a minimum, students acquire real-world knowledge about the music marketplace, trends and what it takes to have a successful career. In addition, the program extends this service to all students through seminars, workshops and networking events.

USC College

Given the breadth of instruction in the College, including GE, Thematic Option, and Honors classes, a rich diversity of current learner-centered practices continue as explained further below.

Towards its quest for full assessment, the General Education Program distributes **mid-semester student evaluations** as well as end-of-semester evaluations; the former go only to faculty, who are asked to summarize their results for the Dean of Undergraduate Programs. Students are presented with the learning objectives of each category and asked to what degree the class meets them. This gives faculty members a clear assessment of student perception at a point in the class when it can still be revised to facilitate their learning.

Working with the Center for Scholarly Technology, the College has initiated pilot electronic submission of papers written for two Social Issues classes and the Writing 140 classes affiliated with them. This is the first step toward an **electronic portfolio** that would be introduced to students in their Social Issues classes and maintained through their time at USC. Since Writing 340 classes will also require electronic submission, the portfolios should create a venue for collecting papers that could be assessed for critical thinking content, as well as providing several other benefits of individual ePortfolios.

Other technological innovations include the use of **PRS/NICE “clicker” systems** in large G.E. classes, and the introduction of **multimedia** in certain G.E. categories. The former allow greater student input in classroom discussions and provide on-the-spot assessment of

student learning; the latter allow students to submit work in formats that permit them to take advantage of a wider array of personal learning modalities. The PRS/NICE systems are now employed mostly in the natural sciences, while multimedia has been used primarily by humanists and social scientists.

Many G.E. classes take advantage of **Blackboard / Totale** sites as part of a “blended” experience.

The College has created a **General Education Course Enhancement Fund** to reduce the time spent in class with a “sage on a stage.” Faculty can use the fund to arrange trips, bring in guest speakers, and generally offer opportunities for experiential learning.

All General Education classes in the natural sciences include **laboratory sections**, which provide opportunities for hands-on, problem-based learning in a reduced student/teacher ratio.

In conjunction with Student Affairs and the Henry Salvatori Forum, the General Education program arranges a **speaker series** for all students registered in Social Issues and Writing 140 classes. Speakers have included Julian Bond, Dee Dee Myers and George Stephanopoulos, Maya Lin, and Murray Gell-Mann. This series provides some common intellectual experiences for nearly 2000 incoming students and a different opportunity to apply the skills of social analysis they are learning in their G.E. classes.

The **College Writing Program** provides many learner-centered opportunities: **The workshop approach** used in our writing classes emphasizes dialogue, encouraging each student to participate in the classroom discourse; peer groups participate in the process of giving students feedback on their writing projects. **The process approach** to writing individualizes instruction according to each student's developmental needs; instructors conduct individual conferences throughout the semester to tailor feedback and instruction for each student. Individualized instruction is also available through the tutorial services of the **Writing Center**

The Writing Program encourages **student appropriation of the rubric** and analytical terms used to assess writing so that students develop the self-judgment concerning their writing and self-awareness of their writing process.

The **American Language Institute** provides instruction for students, typically from overseas whose first language is not English. They are now working with the Writing Program to support American citizens with non-English languages of the home.

The College Language Center has developed several learner-centered online resources. For Spanish, German, French and Chinese language learners, they created **eWorkbooks**, combining audiotapes, mechanical activities, video labs, and collaborative work. They are now designing a **Virtual Italian Experience (VIE)** with clear outcomes at each stage and many pathways available to obtain those outcomes, depending on the students' preferred learning styles.

Many General Education classes allow a JEP component, which includes a community placement arranged by the **Joint Educational Project**, USC College's thirty-year-old program

in service learning. Students interested in political campaigns and other political institutions find internship opportunities through the **Jesse Unruh Institute of Politics**; both non-profit and for-profit internships are available through the **Career Planning and Placement Center**.

In collaboration with the Career Center, the College offers an internship class, MDA 250 Internship for Liberal Arts: Work and Career -- Theory and Practice. Offered over the summer as an **on-line internship class**, it allows students to accept placements across the United States and overseas.

Individual faculty engage in a wide variety of learner-centered activities as part of their General Education classes. One professor walks on coals; another allows students to download his lectures on their Ipods. Faculty Fellows at the **Center for Excellence in Teaching** conduct workshops that encourage their colleagues to experiment with new pedagogic techniques intended to increase student engagement.

The **Thematic Option Program** creates an academic community for highly motivated students, with small classes, selected faculty, and challenging workloads. The program organizes an **undergraduate conference** each year, in which students present papers on themed panels, often with faculty respondents.

Freshman Science Honors creates a community of natural science students with events, small labs, academic support and an emphasis on understanding scientific research.

The Supplemental Instruction Program matches students at risk in demanding natural science classes with peer mentors who have already excelled at those classes.

The College Advising Office runs a series of **Learning Communities** every semester, bringing together groups of twenty incoming students who take two classes together and share in events, trips, and other activities. Students self-select into these communities by their interest in the academic focus of each group.

The College Advising Office also conducts year-round **workshops** for pre-law, pre-med, and other pre-graduate students, including discussions about the various schools, guest speakers, and opportunities to develop and critique personal statements. In workshops on choosing majors, students learn about the decision-making process and share their ideas about their personal academic and professional goals.

Freshman Seminars allow first-year students to choose among 25 topics each fall and another 10-12 in the spring, each chosen to engage their interest. These are 2-unit classes limited to 18 freshmen, evaluated on a credit/no credit basis. Their purpose is to help students discover the intrinsic excitement of intellectual inquiry and to understand how college professors expect them to learn. Many seminars have included opportunities for experiential learning, such as travel to sites around Los Angeles and activities that require personal artistic expression.

For second-year students, the College offers **Sophomore Seminars**, sponsored by the Academic Culture Initiative; these are 2-unit courses on provocative topics, taught by our most promising graduate students.

The **Interdisciplinary Major** allows individual students to propose a major that enables them to focus on some area of inquiry which falls between standing disciplines. Students solicit the support of at least two faculty members, who serve as the individual student's guidance committee. As part of the application students must explain why their project could not be done within a regular major and minor.

The Center for Active Learning in International Studies (CALIS) is a collaborative program of the East Asian Studies Center and School of International Relations, which sponsors outreach programs for students in kindergarten through twelfth grade. USC faculty, graduate and undergraduate students work with high school students and teachers in seminars and study groups, providing curriculum and websites to build the skills and knowledge necessary for engagement in an increasingly globalized world.

One program managed by CALIS is the **Teaching International Relations Program (TIRP)**, which sends about 200 USC undergraduate volunteers into 75 local high school classrooms each year to teach a series of four class sessions. The focus is on case studies and analytical techniques for understanding global conflicts. USC College faculty members support the program by allowing students to earn credit in their college courses for participating. This is a program run by USC students for students in the local area.

AngeLingo is USC College's online journal. Working with faculty from the College Writing Program, the undergraduate editorial board select articles, design the publication, and manage an essay contest that awards prizes to two winners at different ends of the political spectrum. The magazine can be found online at angelingo.usc.edu.

Two new options were created last spring for highly self-motivated students:

- 1) **Individual Programs of Study (IPOS)** allow individuals to propose a combination of classwork, service learning, and other educational experience for 8-18 units during a single semester; and
- 2) **Collaborative Learning Projects (CLP)** allow groups of students to propose programs of collective learning. Each of these options requires the support of a faculty member. IPOS projects are letter-graded; CLP projects receive only credit/no credit grades.

Overseas study programs immerse students in a cultural context different from their own and allow them to learn in whatever modalities suit their personal styles. The College offers overseas programs at more than forty sites in thirty countries around the world.

Opportunities for **undergraduates to engage in research** under the guidance of faculty mentors are also learner-centered educational experiences. Individual students work with many College scientists in their laboratories. For example, College students have won awards in almost every category at the recent Provost's annual **Undergraduate Research Symposium**.

Special Examples of Undergraduate Learner-Centered Teaching in the College:

THE GENDER STUDIES PROGRAM

SWMS 311: Gender Studies and the Community: Internship: The Gender Studies Program requires that majors complete a semester working as an intern at an appropriate organization, foundation, or enterprise that focuses in some manner on gender issues. Students have supervisors at their place of internship who report on the quality and content of the student's internship to the Chair of Gender Studies. In the term paper that students write as a requirement for the course, they are encouraged to critique their experience as an intern, providing feedback for the organization where they worked as well as allowing them to reflect on the strengths and weaknesses of their experience as an intern.

SWMS 410: Senior Seminar: Students are encouraged to work on term paper projects that relate to their own academic interests or future career plans. They can also choose to write term papers that are related in some way to their internship experiences. Each of them is also responsible for leading the class discussion one week during the semester, thus learning how to formulate interesting and relevant discussion questions as well as learning how to lead a class discussion.

UNRUH INSTITUTE OF POLITICS

The Institute's internship program serves approximately 100 students a year, with students interning in the offices of elected officials, city county and state offices, non-profit organizations, media organizations, consulting firms, and law firms. The current internship database includes over 900 internship listings in Los Angeles, Sacramento, Washington, DC and abroad. The Institute also offers approximately 6 fellowship awards to students to offset the cost of participating in an internship during the summer. Past award recipients interned at; the American Civil Liberties Union, Italy's Tethys Research Institute (non-profit NGO committed to the research and conservation of marine mammals), INHURED International (a human rights, non-governmental organization in Nepal) and at the Department of Defense in Washington, DC.

In February, the Institute selects between 10 and 15 students to participate in a Sacramento Legislative Seminar. Students have the opportunity to meet with elected officials and their staffs, lobbyists, and members of the media. The Institute covers airfare and hotel costs and works with the California Center for Education in Public Affairs Inc. to organize the panels and reception at the Seminar.

The Institute also supports a number of student-initiated activities including the Unruh Political Student Association, (UPSA). UPSA helps to maintain a strong connection between the Institute and the student body. UPSA keeps the Institute aware of the issues and concerns that are of interest to or affecting students at USC. UPSA members provide support for Unruh events, help with publicity and organize their own events such as student debates and lunchtime Speaker Series. UPSA also writes and publishes The Speaker, a student newsletter that covers USC political events in the fall and spring semesters. This newsletter is distributed to alumni, elected officials, faculty and students.

Viterbi School of Engineering

The Center for Engineering Diversity

The Center for Engineering Diversity (CED) at the University of Southern California is dedicated to promoting scholastic, personal and professional excellence among underrepresented students in the Viterbi School of Engineering. CED engenders scholastic and personal achievement within our community of scholars while preparing students for successful careers as industry professionals and encouraging the pursuit of graduate degrees.

MESA (Mathematics, Engineering, Science Achievement)

MESA is a statewide program offering middle school and high school students an eclectic group of competitions, events, enrichment programs, meetings, workshops, and trips to corporate partners. MESA also provides professional development and training for teachers.

Mission Science

The fundamental purposes of Mission Science are to reinforce children's natural curiosity and to instill an excitement about science and technology by providing "hands-on" projects and experiments. We provide real workshops, with tools and workbenches so students can work on projects, tinker with things and ideas, and learn about science in an informal atmosphere.

Special Programs

The special programs offered the Pre-College program provide training and support for science activities, competitions, and demonstrations. Hundreds of students and teachers benefit from their participation.

W.V.T. Rusch Engineering Honors Program

The W.V.T. Rusch Undergraduate Engineering Honors Program (EHP) provides a unique opportunity for talented students to participate in academic and social activities directed towards honors students. The program is open to qualified students in any year of undergraduate study, and is designed to provide a stimulating intellectual experience to supplement the usual undergraduate experience.

Engineering Freshman Academies

The Engineering Freshman Academies are a unique opportunity for USC engineering freshmen to meet other engineering students and faculty; learn about what professional engineers do; and understand how engineers affect society, technology, history and politics. The focus of the fall semester Academies is the technical, political, ethical and societal impacts of engineering. We want to give our students a global picture of what engineers actually do and how engineering and the work of engineers relate to society.

Viterbi Academic Resource Center

The Viterbi Admission & Student Affairs Office provides a **FREE** peer-tutoring program for all undergraduate engineering students. Tutors and review sessions are available for all lower-division math, physics, and chemistry courses, as well as many engineering courses. In addition, specially trained tutors can consult with you on your schedule and study habits.

Career Services

The USC Viterbi School of Engineering Career Services office acts as a liaison between employers and technical students, providing events and programs designed to connect outstanding engineers with top employers. We work with students in the USC Viterbi School of Engineering to assist them with resume reviews and job- and internship-search strategies.

Women in Engineering

Female engineering undergraduates are invited to participate in special networking events to give engineering students the opportunity to interact with fellow students, female faculty, alumni, and corporate representatives. Opportunities for students include student organization involvement, mentoring programs, fun social events, technical tours, undergraduate research grants, conference travel grants, computer access, and a graduate student network.

Overseas Programs

Engineering is a global profession and studying abroad for a semester or a summer is a great way to learn more about other cultures as well as gain perspective on technology issues in other countries. Today companies are more often international in scope or collaborate with partners overseas. The opportunity to study abroad provides you with the opportunity to gain meaningful international exposure prior to entering the workforce.

The Viterbi School offers a six-week program each summer in either London, Paris, Madrid or Rome. Students participating in this program can make progress towards their engineering degree by taking two major related courses while also exploring Europe. Courses are taught by Viterbi faculty as well as European faculty and students have the opportunity through the courses to evaluate and compare a variety of engineering concepts to those in the US in order to broaden their perspective of technological issues.

Merit Research Program

Each year, a select group of entering freshmen are invited to work with faculty on current research projects. The Merit Research Award is a four year award provided the student makes satisfactory academic progress toward their engineering degree, maintains a B average overall and completes a short renewal form each spring. Students in the Merit Research Program are paid a bi-weekly wage for the time spent working in the laboratory. Hours are flexible to provide students with the opportunity of integrating their research with academic responsibilities and co-curricular activities.

WISE Research Grants

The Viterbi School is a recipient of funds from the Women in Science and Engineering Program, which provides an opportunity for undergraduate women majoring in engineering to apply for and receive funds to support their research activities in the laboratory with our faculty. Awards are provided on an annual basis and students can apply for a WISE grant at the beginning of any semester. Additionally, summer awards are also available for students who want to devote more time to research activities during the summer months.

Summer Research Opportunities Board

In addition to the research opportunities available through the Viterbi School and other USC departments and programs, students also have the ability to pursue research in the summer at other academic institutions throughout the country.

Workshops for Engineering Students

Each year, the advisors in the Admission & Student Affairs office offer workshops for undergraduate engineering students on such topics as Time Management, Minors, Graduate School in Engineering, How to File for Financial Aid, and How to Transfer in Summer Coursework.

Illumin

This online magazine (<http://illumin.usc.edu>) is written, edited, and published by undergraduate engineering students. An editorial board of engineering students decides on all publication and marketing issues. The magazine has readers from an average of 75 countries per month and has had excerpts reprinted in textbooks and course readers.

Community Consulting Projects

For the past five years, the Engineering Writing Program (EWP) has sent engineering undergraduate students in WRIT 340: Advanced Writing Communication into the community to complete consulting projects in the form of technical reports. Students actively help determine the scope and focus of the projects. Agencies ranging from homeless shelters to elementary schools, churches to youth centers, mental health facilities to environmental advocacy groups have participated in this project-based service-learning program. Over the years students have helped reconfigure computer labs, found ways to make buildings accessible to the handicapped, designed playgrounds, and analyzed security and database needs, among many other tasks. Several organizations have implemented the student ideas, and some have used the student reports to help obtain grants ranging from \$5,000 to \$800,000.

Distance Education Network

Continuous advancement of online collaboration tools

As the number of DEN students increase, and as VSoE faculty become more comfortable teaching online, the number of collaborative projects and student groups have increased significantly. As a result, DEN has enabled students and faculty to meet virtually through various collaborative tools including Blackboard, Breeze and WebEx. DEN's next project is the implementation of the Digital Amphitheatre, developed in conjunction with the Information Sciences Institute (ISI). The aim of the Digital Amphitheatre is to create a digital meeting place, an environment where DEN students can feel that they are interacting with each other, rather than using a complex and costly teleconferencing system.

An exemplary example from engineering:

The BMES ERC Science and Engineering Education and Outreach Program

The Biomimetic MicroElectronic Systems Engineering Research Center (BMES ERC) is in its third year of a 10-year, comprehensive and innovative, science and engineering education outreach kindergarten through graduate school initiative. The BMES ERC Science and

Engineering Outreach Program is designed to 1) introduce and/or enhance experiential learning that promotes understanding of and enthusiasm for basic science, engineering, and technology development and 2) develop a *culture of mentorship* in which bioengineering knowledge and the motivation to engage in scientific and engineering research is transferred from BMES ERC investigators to successive generations of students through a “brigade of mentors.”

In all, the BMES ERC K-12 Science and Engineering Outreach Program impacts the science literacy of more than 2,000 minority and economically disadvantaged Los Angeles Unified School District students and their teachers each year. It is a coordinated, comprehensively integrated conduit program combining USC’s broad educational and outreach resources with community efforts and resources to educate children and their teachers about the unlimited potential of science and engineering to enrich not only their classroom learning but also their lives.

All facets of the program are facilitated by experience-dependent mentoring throughout the entire curriculum, using BMES ERC testbeds and thrusts research as focal points of learning and motivation. Our science and engineering education program includes four integrated endeavors: K-12, college, graduate, and postgraduate experiences and has formed partnerships with local schools to create an educational continuum of rigorous science and engineering curricula from kindergarten through graduate and/or medical school. Through its outreach program, BMES ERC scientists and engineers transfer the excitement, knowledge, and skills generated by their research to students from grade school through graduate school.

University Support for Learner-Centered Teaching

As detailed below, the university currently has two well-established programs to aid learner-centered instruction by USC faculty, including the Center for Excellence in Teaching and the Center for Scholarly Technology.

Center for Excellence in Teaching

The mission of the Center for Excellence in Teaching (CET) is to provide shared leadership, vision, and support in the pursuit and development of effective and innovative teaching and mentoring in order to foster and enhance deep and lifelong learning. Major programs directly related to a learner-centered education at USC and offered by CET include:

Fund for Innovative Undergraduate Teaching

Since 1999, the Fund for Innovative Undergraduate Teaching has supported initiatives across the undergraduate curriculum designed to affect demonstrably both students’ learning and their learning environment. During 2006-2007, the fund is devoted specifically to projects designed to enrich and expand the classroom experience for first-year undergraduates. Three fundamental attributes of successful projects include: **innovation** (a fresh perspective to learning strategies); **impact** (potential impact on student learning: improved learning effectiveness, increased number of students, transferability of innovation within the School or the University, opportunity for faculty to adopt a new learning strategy that would transfer to other

courses they teach); and, **assessment of student learning** (a clear plan to assess student learning as a result of the proposed change or innovation).

References:

http://www.usc.edu/programs/cet/awards_grants/fund/index.html

http://www.usc.edu/programs/cet/awards_grants/fund/winners/index.html

The USC Mellon Academic Mentoring Support Program

The USC Mellon Academic Mentoring Support Program aims, over a period of three years, to foster the growth and development of new and innovative mentoring at USC, as well as to recognize excellent mentoring already existing at our University. With this program CET contributes to the current institutionalization of mentoring throughout our university so as to further support our institutional learner-centered mission.

Reference: <http://www.usc.edu/programs/cet/mellon/grants/index.html>

CET Faculty Fellows

CET's Fellows form, as a group, an interdisciplinary forum for the discussion of the diversity of approaches to teaching and learning and of disciplinary differences. They serve students (directly via mentoring and organizing special courses, and indirectly as evangelists for teaching excellence throughout the University) and faculty colleagues, by sharing their teaching strategies, successes, and challenges both in and out of the classroom. In addition, the Fellows collectively seek to provide an intellectual resource on teaching, learning, and policy evaluation for University administrators tasked with responding to challenges posed by the changing national educational environment.

Reference: http://www.usc.edu/programs/cet/faculty_fellows/

A most successful example of the Fellows' work is ***The Future Professoriate Program***. The purpose of this one-year program is to prepare doctoral students considering higher education careers to become leaders in their professions. The program is highly innovative in its focus on shaping students' understanding of the fundamental principles of learning in the context of teaching and research. Through the creation and participation of an active interdisciplinary "learning community" established among the students and CET Fellows, the program provides an array of diverse and mutually enriching learning environments and strategies. These include participation in lectures and workshops, crafting reflective statements, face-to-face discussions, online activities, development of an engaging academic portfolio, and mentoring from CET Fellows. It incorporates career guidance, job negotiation skills, and modern theories of learning (including insights from experimental and theoretical psychology and neuroscience) by exploring and evaluating various innovative research as well as teaching and learning approaches.

Practical aspects of the program include the preparation of an academic C.V., conference presentation skills, negotiation tactics, the development of a teaching philosophy, the construction of a clearly articulated research statement, a journal of reflective statements about teaching and learning, and syllabus development.

Ref: http://www.usc.edu/programs/cet/careers/future_professoriate/

CET's "Learner-Centered" Approach with Departments, Schools, and Students

CET is "learner-centered" in its work with departments and schools as it responds to specific requests to facilitate the development and implementation of learner-centered initiatives. Such collaborative work is purposely undertaken behind the scenes yet CET remains immediately available for resources, advice, recommendations, process, and implementation.

Learning happens in many levels in many ways. In a learner-centered environment students are empowered to become engaged responsible learners as well as partners in their own education by: capitalizing on their own learning interests and curiosity; developing their own skills to find, synthesize and use information in creative ways and with a sense of purpose; and, participating in the exciting process of knowledge construction. This, in turn, leads to a much richer life-long learning experience for them as they develop into independent autonomous learners. To foster innovative student ownership and enthusiasm for the learning process at USC and to promote outstanding student achievement, CET supports student-led forums on learning.

Reference: http://www.usc.edu/programs/cet/student_forums/

Reference: <http://www.usc.edu/programs/cet/about/>

Programs and Resources

Throughout the school year, CET offers public programs to promote learning at USC. Some learner-centered events offered include:

- Engaging Students in a Learner-Centered Classroom
- Designing Objectives-Based Courses and Syllabi
- TEACHnology: Beyond PowerPoint
- Engaging Students in the Learning of Science
- Creative Collaborations in Teaching Across Disciplines

For every event, CET provides on their Web site asynchronous access to PDFs of handouts, QuickTime videos of speakers, helpful links, and other information such as bibliographies and publications like the CET *Teaching Nuggets*, a handbook for new teaching assistants and junior faculty. The resources may be found at this URL:

<http://www.usc.edu/cet/resources/>. Videos can be accessed at this

URL: <http://www.usc.edu/cet/usc/programs/video/>. Alternatively, students and faculty may subscribe to CET at the iTunes podcast directory and have videos sent directly to them whenever a new video is uploaded.

In addition to the public events and their resources, CET has developed online modules for new teaching assistants. These include tips, policies, ethical issues, video interviews with undergraduate students, faculty and current TAs. The purpose is to help ensure that USC's TAs are well trained and ready to interact with students and respond effectively to their learning needs. These modules can be accessed at http://www.usc.edu/cet/ta_resources/

Awards

One of CET's core initiatives is to continue to work towards improving the university-wide recognition of the importance of teaching and life-long learning as one of the most significant aspects of our balanced academic pursuits. Our goal is to assure that the value of

excellence in educating our students and ourselves is an iterated priority and is rewarded appropriately. Awards currently under CET's administration are the following:

- The Associates Awards for Excellence in Teaching
- The University Outstanding Teaching Assistant Awards
- CET's Awards for Excellence in Teaching (for teaching assistants)
- USC Mellon Awards for Excellence in Mentoring.

Center for Scholarly Technology

The Teaching and Learning section of the Center for Scholarly Technology (TLS-CST) supports the learning technology needs of USC faculty. The center provides both online and face-to-face learning technology support including tutorials, hands-on workshops, responses to specific questions, and departmental and individual consultation. There are many different ways to achieve learner-centered education within any discipline, class format, student demographic, or teaching style. TLS-CST provides relevant and simple information supplemented with many rich, timely, and respected resources on both new and well-established learner-centered and technology-enhanced themes, strategies, practices, issues, and trends.

Faculty are invited chart new territory in their fields or simply experiment with new technologies to enhance student learning, consider participating in one of our existing pilot programs or propose a new pilot program based on your own ideas.

NICE PRS "Clickers" in Science, Math, and Social Science Classes and Small Lab Sections

The use of "Clickers" in large science and math courses have had a significant impact on how these courses are taught -- fostering an ongoing feedback loop between instructor and students, they also have had a large impact on the way social science courses are being taught. In many ways, clickers bring anonymous polling into the classroom such that students can work with real live and dynamic data as it happens. This has also been the case in Sociology and Psychology. Likewise, many science courses are bringing their clickers into their small section labs to gather real time aggregated data from students as they work on their lab experiments and discussions.

The CST website offers several reviews of faculty experiences using clickers at the website <http://www.usc.edu/isd/locations/cst/tlsnew/tls/pops.html>.

General reference: <http://www.usc.edu/isd/locations/cst/tlsnew/ats/prsclickers.html>

Online Journaling and Digital Portfolios

Online journaling portfolios allow for a learner-centered approach to writing by allowing students to create, critique, and iterate upon their work by receiving feedback from instructors, peers, and even from personal reflection on their own work. Online portfolios have been an important part of curriculum and assessment in the School of Social Work, School of Policy Planning and Development, Business, the Masters in Public Health program, and the Joint Education Project.

Ref: <http://www.usc.edu/isd/locations/cst/tlsnew/themes/eport.html>

Ref: <http://www.usc.edu/isd/locations/cst/tlsnew/themes/reflection.html>

Online Collaboration for Coursework and Research

Increasingly, online web services allow for enhanced collaboration, both synchronously and asynchronously (using tools such as wikis and blogs). Several academic programs have made use of online collaboration tools, including Nutrition, Architecture, Business Writing, Computer Science, PPD, Communication, Religion, Education, ITP, Political Science, and Marketing.

The affordances of new technologies such as Weblogs (blogs) and wiki webs allow students to collaborate on formal and informal projects with an unprecedented degree of ease and efficacy. These technologies can be leveraged to:

- Provide learners with a place to collect their thoughts and reflections on their work and on their own thinking (metacognition).
- Allow learners to work in a shared digital space in order to collect resources, write collaboratively, and provide critique on their peers' contributions.
- Edit and update work in an environment where versions can be tracked and older versions can be retrieved trivially easily.
- Create persistent knowledge-bases and conceptual webs that help students to make links between and among concepts in a course.

The word "blog" is a shortened form of the term "Web log". Blogs are Web sites that act as personal journals. Blogs are very much like diaries or journals; they just exist in a digital space.

Wikis are Web sites that can be edited and updated right from your Web browser and do not require knowledge of HTML to make updates to content. Wikis are co-owned by a small group of people. All owners (or members) of the wiki can make changes to content by adding, editing, or deleting pages. This is often referred to as the "democratized" nature of the wiki.

Ref: <http://www.usc.edu/isd/locations/cst/tlsnew/pilot/blogsandwikis.html>

Blackboard/Totale

Blackboard is USC's centrally supported online course management system with <http://totale.usc.edu> as its entry point and resource site. Course sites are created upon faculty request and populated automatically with student enrollment data. Course materials and learning objects are then added by the faculty and course TAs for students to retrieve. Faculty and students can communicate with each other using email and other tools in a password-protected, secure environment.

Blackboard course shells also include a rich suite of online tools for course participation and management – e.g., an online grade book, assessment tools, and collaboration tools.

Beyond tools for managing course content and communications, Blackboard offers tools to manage homework assignments such that an instructor-to-student secure channel on submitted homework and related documents is available. Blackboard offers advanced assessment tools that allow for feedback and anonymous polling. All together, Blackboard is a supported and secure online system to help instructors manage courses and to help students access course content and communications. Blackboard is a course management system with a core strength in improving efficiency, but also offers tools for improved teaching and learning efficacy.

Ref: <http://www.usc.edu/isd/locations/cst/tlsnew/ats/blackboard.html>

Podcasting

On-campus organizations such as the Distance Education Network have learned over time that residential students enjoy having access to online education resources, such as audio and video tapings of course lectures. Emerging syndication technologies, such as podcasting, has made capturing and making audio available to students more accessible for faculty members and students. Pilot projects in podcasting have been (or are currently being) vetted in various academic programs, including Religion, Political Science, Architecture, Business, and ITP.

Podcasting is synonymous with audio blogging. Podcasting provides a relatively easy way for faculty to post their course lectures online and for students to download and listen to the lectures from their home computers or from a mobile device, like a cell phone or an iPod.

Ref: <http://www.usc.edu/isd/locations/cst/tlsnew/pilot/podcasting.html>