



CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, California 93407
ACADEMIC SENATE
805.756.1258

MEETING OF THE ACADEMIC SENATE EXECUTIVE COMMITTEE
Tuesday, January 29, 2008
01-409, 3:10 to 5:00pm

- 3:10 I. Minutes:
Approval of minutes for Executive Committee meeting of January 8, 2008 (pp. 2-3).
- II. Communications and Announcements:
- 3:15 III. Reports:
A. Academic Senate Chair:
B. President's Office:
C. Provost:
D. Statewide Senate:
E. CFA Campus President:
F. ASI Representative:
G. Caucus Chairs:
H. Other:
- IV. Consent Agenda:
- 3:45 V. Business Item(s):
A. **Academic Senate and University committee vacancies:** (p. 4).
B. **Resolution on Teaching Associates:** Foroohar, chair of the Faculty Affairs Committee (p. 5).
C. **Resolution on Report to the Provost: Task Group on the Future of the Library:** Howard, chair of the Library Committee (pp. 6-26).
D. **Resolution on New Masters of Science Degree in Biomedical Engineering:** Hannings, chair of the Curriculum Committee (pp. 27-33).
E. **Resolution Abolishing the Academic Senate Library Committee:** Howard, chair of the Library Committee (p. 34).
- VI. Discussion Item(s):
College councils: (p. 35).
- 5:00 VII. Adjournment:

CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, California 93407
ACADEMIC SENATE

MINUTES OF
The Academic Senate Executive Committee
Tuesday, January 8, 2008
01-409, 3:10–5:00 p.m.

Preparatory: The meeting was called to order at 3:15 p.m.

- I. Minutes: The minutes of October 30 and November 6 were approved as presented.
- II. Communications and Announcements: The next Social Hour is scheduled for January 24. David Conn, Vice Provost for Academic Programs, and Kathryn Rummell, Chair of the General Education Area A/C Committee, have been selected to participate in a CSU General Education Affinity Group on February 28. Executive Vice Chancellor Gary Reichard will be visiting Cal Poly on February 27 and 28. An interdisciplinary colloquium to honor Mark Moline and Craig Russell, recipients of the 2007 Distinguished Scholarship Award, is scheduled for January 15.
- III. Reports:
 - A. Academic Senate Chair: Giberti reported on the calendar for Winter and Spring Quarter Academic Senate and Executive Meetings.
 - B. President's Office: Howard-Greene announced that budget information will be available after Governor Schwarzenegger's state of the state address.
 - C. Provost: Durgin reported that University Legal Counsel has reviewed the proposal and contract for collaboration between Cal Poly College of Engineering and Jubail University College in Saudi Arabia.
 - D. Statewide Senate: none.
 - E. CFA Campus President: Saenz reported that if Governor Schwarzenegger does not provide the CSU with the state support required by the compact, all future faculty raises could be up for renegotiation.
 - F. ASI Representative: none.
 - G. Caucus Chairs: none.
 - H. Other: none.
- III. Consent Agenda: none.

IV. Business Items:

- A. Academic Senate and University committee vacancies: the following appointments were approved.

COLLEGE OF EDUCATION
Curriculum Committee

Roberta Herter, GradSt/Ed

PROFESSIONAL CONSULTATIVE SERVICES
Research & Professional Development Committee

Marisa Ramirez, Library

UNIVERSITY COMMITTEE
Information Resources Management Policy & Planning Committee

Unny Menon, I&ME

- B. Approval of 2009-2010 Academic Calendar (Instruction Committee): Schaffner presented the Instruction Committee's recommendation of option W2 as the calendar with the most support and least problems. M/S/P to approve the Instruction Committee's recommendation.
- C. Resolution on Diversity Learning Objectives (Curriculum Committee): Hannings presented this resolution, which asks that the Diversity Learning Objectives be considered as an addendum to the University Learning Objectives. M/S/P to agendize the resolution.
- D. Resolution on Evaluation of Teaching Associates (Faculty Affairs): Due to the lack of time, this resolution will return as a first reading item at the January 29 Senate meeting.

V. Discussion Items:

- A. Future Academic Senate Chair: Giberti asked the Executive Committee to think about his successor. Elections will take place at the end of Winter Quarter.

VII. Adjournment: The meeting was adjourned at 5:00 p.m.

Submitted by,



Gladys Gregory
Academic Senate

**ACADEMIC SENATE COMMITTEES
VACANCIES 2007-2008**

COLLEGE OF ARCHITECTURE AND ENVIRONMENTAL DESIGN

Faculty Affairs Committee (2007-2009 term)

COLLEGE OF ENGINEERING

Library Committee (2007-2008 term)

COLLEGE OF LIBERAL ARTS

Budget and Long Range Planning Committee (2007-2008 term)

UNIVERSITY-WIDE COMMITTEES

Campus Planning Committee
(2 Representatives/1 Vacancy - 2007-2010 term)

CAP Ad Hoc Editorial Coordination and Review Committee
(2 Representatives/1 Vacancy – no term limit)

Intellectual Property Review Committee
(1 Vacancy, CENG Winter 2008 term)

Adopted:

**ACADEMIC SENATE
of
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, CA**

AS-___-08

**RESOLUTION ON EVALUATION OF
TEACHING ASSOCIATES**

- 1 WHEREAS, Gaining teaching experience is an important part of many graduate programs; and
2
3 WHEREAS, Teaching appointments are an important means of financial support for graduate
4 students; and
5
6 WHEREAS, The teaching skills of graduate student employees affect the quality of teaching and
7 learning in the classes they teach; and
8
9 WHEREAS, Cal Poly has not developed a policy regarding training, supervision, and evaluation
10 of Teaching Associates; i.e., graduate students who teach Cal Poly students; and
11
12 WHEREAS, Some colleges may not have developed policies and criteria for employment and
13 evaluation of their Teaching Associates; therefore be it
14
15 RESOLVED: That the Academic Senate of Cal Poly recommend the formation of an ad hoc
16 committee of Unit 11 representatives, faculty involved with graduate programs,
17 and appropriate administrators to develop a University-wide policy regarding
18 employment and evaluation of Teaching Associates; and be it further
19
20 RESOLVED: That the Academic Senate urge that these policies reflect both the CSU
21 classification and qualification standards for hiring students and appropriate
22 collective bargaining agreements governing Teaching Associates.

Proposed by: Academic Senate Faculty Affairs Committee
Date: November 2, 2007

Adopted:

**ACADEMIC SENATE
of
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, CA**

AS-__-08

**RESOLUTION ON
*REPORT TO THE PROVOST: TASK GROUP ON THE FUTURE OF THE LIBRARY***

- 1 RESOLVED: That the Academic Senate endorse the recommendations presented in the attached
2 *Report to the Provost: Task Group on the Future of the Library* (summary of
3 recommendations provided on page 2 of the report).

Proposed by: Academic Senate Library Committee
Date: October 31, 2007

CAL POLY

REPORT TO THE PROVOST

Task Group on the Future of the Library

October 2007

Task Force Membership:

Joseph Grimes, Director, Center for Teaching & Learning
Linda Halisky, Dean, College of Liberal Arts (**Co-Chair**)
Wayne Howard, Chair, Department of Agribusiness, College of Agriculture,
Food and Environmental Sciences & Chair, Academic Senate
Committee on Library Services
Timothy Kearns, Vice President & Chief Information Officer
Franz Kurfess, College of Engineering
Michael D. Miller, Dean of Library Services (**Co-Chair**)
Roxy Peck, Associate Dean, College of Science and Mathematics
George Petersen, College of Education
Jay Singh, Orfalea College of Business
Christopher Yip, College of Architecture and Environmental Design

Also participating:

Navjit Brar, Coordinator, Reference and Instructional Services,
Kennedy Library
Johanna Brown, Department Head, Collection Management,
Kennedy Library
Helen Chu, Director, Library Information Technology, Kennedy Library
Trey Duffy, Director, Disability Resource Center
Nancy Loe, Department Head, Special Collections & University Archives,
Kennedy Library
William Sydnor, Academic Advisor, Academic Skills Center

Staff Support:

Lynda Alamo, Administrative Analyst, Kennedy Library
Sallie Harlan, College Librarian, Kennedy Library

EXECUTIVE SUMMARY

The Provost's task group met Spring Quarter 2007 to examine the role of the library in support of the academic mission of Cal Poly. The areas of study and related recommendations are:

The Library as Place: In the 30 years since the Kennedy Library was built, instructional methods and library services have experienced profound changes. The library needs to be an active space that meets a multitude of academic and social needs.

- Recommendations: Renovate and expand the library as a multi-use, social and academic center of campus.

Collections: The collections budget has doubled over the past 25 years but hyperinflation in academic publishing resulted in two-thirds fewer books purchased and half as many journals. Licenses to electronic journals are often more expensive than print to purchase and maintain. Similar digital subscriptions at academic libraries increase the institutional value and prestige of the unique archival materials, faculty scholarship, and student work held in Special Collections.

- Recommendations: Provide seamless access to digital resources while continuing to support legacy collections; develop an institutional repository for faculty and student scholarship and other digital assets; work with CSU and Cal Poly colleges to better fund collections.

Services: Traditional library services such as reference and course reserves will continue to be transformed by technology. Co-locating other student services within the library creates a synergy that delivers information, learning academic skills, and opportunities to students.

- Recommendations: Enhance library services through better use of technology and a scholar-centric approach that adds value to the academic process; explore collaboration with partner groups to better support student success and faculty excellence.

Technology: For many users and uses, the library is a virtual space on the Web. The library can facilitate use of technology in day-to-day teaching, and encourage collaboration and social networking in support of learning.

- Recommendations: Selectively adopt emerging technologies to better serve faculty and students. Recruit and train library faculty and staff with superior technology skills to increase innovation.

Personnel: The library has lost half of its faculty positions in the last 25 years and one-third of its staff positions. Cal Poly ranks near the bottom of the CSU in ratio of students to librarians. At the same time, technology has increased the roles and responsibilities of library faculty and staff.

- Recommendations: Increase the number of librarians to one per 1,000 students; add limited number of staff and increase funds for professional development.

Budget: The library budget has had a net loss of more than half a million dollars in the last five years and is not as well supported as competitors such as Western Washington, Texas State-San Marcos or Virginia Tech.

- Recommendations: Make library fundraising for collections, services, and facilities a primary goal for University Advancement; tie growth of graduate programs to funding for library collections and services; secure stable funding sources for recurring expenses such as database licenses.

Task Group on the Future of the Library

Charge

In Provost William Durgin's memorandum of February 22, 2007 he instructed the *Task Group on the Future of the Library* to

“...examine the role of the library in support of the academic mission of Cal Poly. Specifically, I would like you to make recommendations about how the library should position itself to best support teaching, learning, and research in an increasingly networked, mobile, and pervasively technological academic environment. What do faculty need from the library to support their teaching and research? What do students need to support their learning and discovery in and beyond the classroom? What resources and facilities are needed in an expansion of the current building? How can we employ emerging technologies in support of learning? Who are the right campus partners to share library space?”

Drawing from current literature about library collections, services and buildings, the experience at other institutions, and your own unique knowledge of the needs of Cal Poly, I request that you formulate recommendations to create a new vision for the library that aligns itself with the evolving changes to the University's programs and mission.”

The Task Group of ten faculty and additional campus resource people met six times during the Spring Quarter 2007 to examine the collections, services, technology, and building requirements of the Robert E. Kennedy Library. Each meeting was structured around a thematic issue. The Task Group discussed library budget and personnel issues, the transformation of library collections, the evolution of services, the impact of technology and the changing expectations of students, and ideas for an improved learning environment in the library building.

The charts, spreadsheets and articles from those sessions are either included in this report or listed in the bibliography. Discussions were wide-ranging and informative. The six thematic meetings were followed by a three-hour retreat to formulate recommendations concerning the future of the library. This report is a synthesis of what was learned and a statement of recommendations for further consideration.

Library as Place

The existing Kennedy Library was designed in the 70's and completed in 1980. It is in many ways a building with great potential for the campus, but a building that time has passed by. It was built before computing was commonplace and before access to digital collections was seriously considered. In acknowledgement, the campus has begun an important new process to redesign, renovate and expand the existing library building. Architects have been retained and the program phase of this lengthy process is underway. The Program Plan is to be completed by November 2007, in time for submission to the Chancellor's Office for review. Optimistically construction may be completed by 2013.

The redesign process holds great promise for the future of the Kennedy Library. It comes at a time when basic assumptions about academic libraries, their collections, services, and role on the campus, are being seriously reconsidered. It provides an opportunity to adapt the library program as expressed in its building to the changes in technology, faculty need, and student expectations. Perhaps more than any other topic, the Task Group was eager to share their views and their hopes for an improved Kennedy building.

Better utilization of building space is more possible now than in any time in the past because of the shift to digital collections. Less paper storage means repurposing portions of the library to create learning spaces. The changes in the library program and the building are mutually supportive.

The Task Group faculty were clear that the library should hold a special position on the campus. As the largest academic building and as the intellectual heart of the campus, it should be a showcase. It should create a sense of awe not just for parents and visitors, but also to inspire the generations of students and faculty who will use it every day. Faculty spoke of a "vaulted light-filled space" and a large formal quiet reading room for serious study. It is these core spaces that set the tone and therefore need to be appealing aesthetically and generate an intellectual energy and a shared reverence for learning.

The Task Group also explored the idea of the library's role in supporting a learning environment based on Cal Poly's "learn-by-doing" philosophy. Faculty were clear that a modern library needed to be an active place that would support student discovery by adding spaces that could engage students outside of the classroom in meaningful ways. New facilities such as a gallery for scientific displays and art exhibits, quality presentation space for guest speakers, meeting rooms for student groups and faculty committees, a 24hour study room, and media production studios to support student work for an increasingly visually literate community were recommended. By offering these types of special spaces, the library can act as a campus crossroads, allowing students from different disciplines to mix, discuss shared interests, and work collaboratively.

A variety of environments were considered essential to foster information seeking, teaching, learning, recreation, and contemplation. Simple things like comfortable seating, outdoor spaces, lounge areas, access to the wireless network, and reducing the number of carrels in the building came forward as ways to foster learning. Meeting the large and growing need for group project rooms with whiteboards, display technology, easy access

Task Group on the Future of the Library

to power, and flexible furniture design was especially important to support the many study groups from all colleges.

Very much in keeping with the idea of the library as a place central to academic life is the need for social space. Rather than being a “gimmick” to get people in the door, access to food and coffee help to create an ambiance that is basic to human nature. In a place where scholars gather it provides the opportunity for student-faculty interaction and informal discussion and collaboration. People are more productive if they have access to refreshment while working.

A reconsideration of library space also provides the opportunity to think anew about which partner groups are most appropriate in an active learning environment. It allows investigation into how related units could maximize space for similar purposes and what proximities would strengthen these relationships.

Building Recommendations:

1. *Rethink library space as a “21st century union”, an active place to make the most effective use of information, to study, to learn - alone or with others.*
2. *Establish the library as a campus centerpiece and the hub of an active program to spark discovery and support the many facets of learning.*
3. *Explore the library’s role in a “learn-by-doing” environment by adding resources such as a gallery, a presentation room, media production studios, meeting spaces, and reception space.*
4. *As pressures to store paper collections eases, re-purpose library space to create flexible learning places for individual work, group projects, and collaboration.*
5. *Create a large formal study room to inspire and support serious individual study and reflection.*
6. *Acknowledge the importance of academic socialization and social gathering. Coffee and food services can provide the gathering point for such activities.*
7. *Incorporate outdoor spaces as an extension of the learning program and in harmony with the surrounding campus.*
8. *Create a 24-hour, safe study environment.*
9. *Gather partner groups in proximities that are mutually supportive and easy for students and faculty to find.*

Task Group on the Future of the Library

Collections

Since 1983 the library's collection budget has doubled. But on an annual basis, the library acquires only one-third the number of books and only half as many print journals as it did in 1983. Decades of double-digit inflation in the publishing industry have drastically eroded the library's buying power. Significant, however, is that this same period saw the rise of the Internet, the development of the Web, and the birth of electronic journals. Digital publishing has transformed the distribution of journal literature, especially in the sciences and engineering.

Kennedy Library Information Resources Expenditures							
Fiscal Year	Books Added (volumes)	Expenditures for Print Books	Print Periodical Subscriptions	Expenditures for Print Subscriptions	Electronic Periodical Subscriptions	Expenditures for Electronic Subscriptions	*Total Library Materials Expenditures
2006-							
2007	6,025	\$230,632	3,063	\$336,136	10,499	\$913,251	\$1,663,026
2005-							
2006	5,832	\$255,938	3,082	\$588,402	4,207	\$941,752	\$1,851,371
2003-							
2004	4,295	\$160,497	2,904	\$712,074		\$544,663	\$1,419,417
1993-							
1994	6,720	\$374,572	3,841	\$896,459			\$1,344,893
1983-							
1984	15,990	\$386,193	5,547	\$493,679			\$985,586

*End of fiscal year expenditures may reflect delays due to processing in Chancellor's Office.

The cost of a license or subscription to scientific literature is high, with increases of 200-700% not unusual during the last 25 years (see chart below). It is not unusual for an individual journal title to be several thousand dollars, or for a science index or database to cost tens- or even hundreds-of-thousands of dollars to acquire. In the sciences and engineering, roughly 80% of journals are accessible electronically. This access has totally changed how faculty and students in these disciplines do their research. By contrast, the availability of humanities journals in electronic form might optimistically be 40%; but it is growing, and the titles are generally cheaper than those for the sciences and engineering.

Task Group on the Future of the Library

Comparison of Average Costs for Academic Journals by Discipline						
	Avg Cost/ Periodical 1984	Avg Cost/ Periodical 1994	Avg Cost/ Periodical 2004	1984-2004 % Increase	Avg Cost/ Periodical 2006	1984-2006 % increase
Agriculture	\$24	\$57	\$134	458%	\$149	521%
Business & Economics	\$39	\$88	\$196	403%	\$218	459%
Chemistry & Physics	\$229	\$678	\$1,765	671%	\$2,045	793%
Education	\$34	\$75	\$175	415%	\$203	497%
Engineering	\$79	\$196	\$510	546%	\$593	651%
Fine & Applied Arts (includes Architecture)	\$27	\$45	\$69	156%	\$76	181%
History	\$24	\$45	\$85	254%	\$94	292%
Journalism & Communications	\$39	\$80	\$150	285%	\$169	333%
Literature & Language	\$23	\$40	\$76	230%	\$88	283%
Math, Botany, Geology, General Science	\$107	\$272	\$704	558%	\$789	637%
Political Science	\$32	\$71	\$176	450%	\$205	541%
Psychology	\$70	\$172	\$455	550%	\$539	670%
Kennedy Library Collections Budget	\$985,586	\$1,706,094	\$1,419,417	44%	\$1,851,371	88%

Sources: Bowker Annual and CSU Annual Library Statistics

The increase in the library's collection budget over the last 25 years has been used almost entirely to address the new and growing demand for electronic journals, indexes, and reference resources. Through local and CSU consortial licensing, the library is now able to offer the campus access to more than **29,000 titles** in digital form. It is also important to note that these rich information resources are not available through Google or from free web sites. Licensed digital access means that the campus community does not need to physically come to the library to use these materials. Digital resources are available 24/7 from the convenience of home, student residence, lab, or office.

With expanded access, the use of electronic resources by the Cal Poly community has grown dramatically over the last decade. As more and more electronic resources became available and as more students embraced network and mobile technologies, use of online resources has grown exponentially.

In an effort to make limited resources go further, the library has actively cancelled paper subscriptions to titles when electronic versions exist. In this way the campus does not pay twice for the same title. Other cost saving measures include discontinuing microform subscriptions and the binding of paper journals when electronic versions exist. While access to paper subscriptions has decreased, overall the campus has gained much broader access to journal and index literature through the adoption of electronic licensing.

Task Group on the Future of the Library

The number of monographic titles acquired annually at Cal Poly is down significantly from 25 years ago, reflecting cost increases of 50-200% (see chart below). Monographic purchasing has also declined to compensate for the huge increases in the cost of journals. The library's existing book collection has aged to the point where many of the titles do not constructively support the curriculum, and the library is weeding the collections in order to make room for newer titles.

	1984	1994	2004	1984-2004 % Increase
Agriculture	\$35	\$57	\$68	94%
Business & Economics	\$26	\$49	\$70	169%
Education	\$21	\$38	\$46	119%
Engineering & Technology	\$42	\$78	\$100	138%
Fine & Applied Arts (includes Architecture)	\$30	\$43	\$48	60%
History	\$26	\$34	\$43	65%
Literature & Language	\$22	\$28	\$33	50%
Math & Computer Science	\$28	\$56	\$75	168%
Physics	\$44	\$86	\$100	127%
Political Science	\$25	\$38	\$56	124%
Psychology	\$28	\$37	\$47	68%
Science	\$32	\$70	\$96	200%
Kennedy Library Collections Budget	\$985,586	\$1,706,094	\$1,419,417	44%

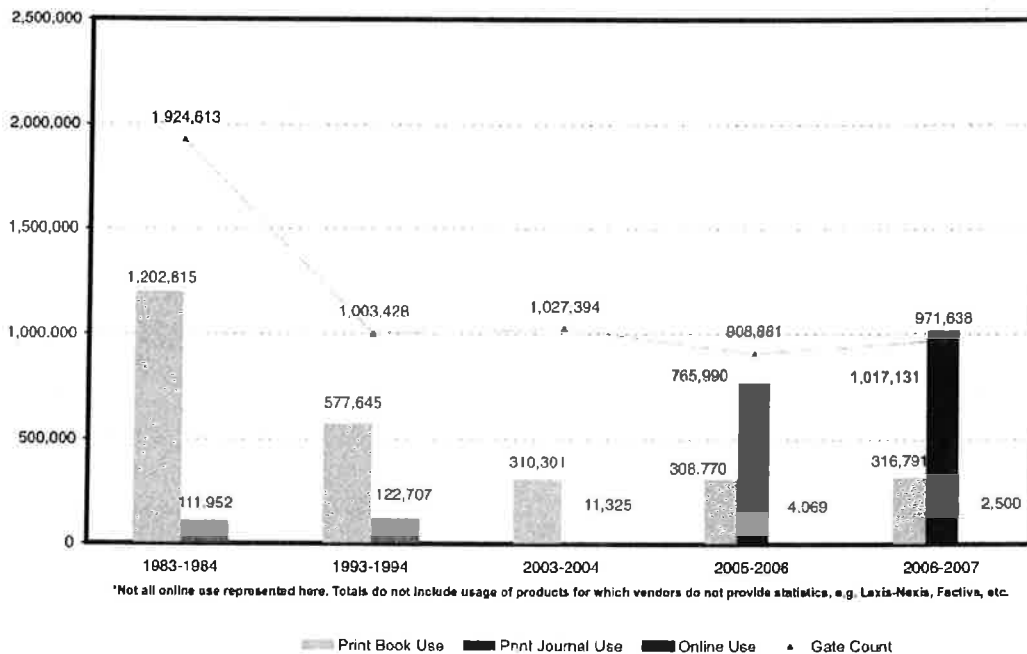
Sources: Bowker Annual and CSU Annual Library Statistics

Use of library book collections has dropped dramatically across the country and the same is true at Cal Poly. However, by becoming more selective in acquiring new monographic titles, the Robert E. Kennedy Library has been fairly successful in reaching borrowers. Approximately 52% of new books circulate in their first year.

To date digital publishing has had only a very minor impact on book publishing. More than 1,500 ebooks are available from the library but this is a technology that has not matured and there is not yet a ready acceptance on the part of students and faculty. This will undoubtedly happen, but it awaits improvements to technology and an economic model that is as easy to use and inexpensive as iTunes. Use of electronic indexes, databases, and journals has grown much more quickly.

Task Group on the Future of the Library

Kennedy Library Gate Count and Resource Use



With the transition toward digital resources, the unique holdings of the library's Special Collections/University Archives unit take on a new significance. The ability of students to use primary research materials and base projects around access to these materials becomes a very special learning opportunity. Current collections are strong in the papers, photographs and drawings of notable California architects such as Julia Morgan, William F. Cody, and Charles Butner; landscape architects such as Arthur Barton; artisans such as Edward G. Trinkkeller, and architectural historians such as Sara Holmes Boutelle and Mario Corbett. Special Collections also has local history collections that not only document noteworthy people and events of the Central Coast, but also dovetail with the university's curriculum, including environmental history and ethnic studies. Most of these holdings remain unprocessed and therefore unavailable for use due to lack of staffing. Holdings of and access to the University Archives remains modest for the same reason. This is an area that deserves support for acquisition, preservation, and scanning to improve access for classroom discovery and individual research.

Collection Recommendations:

1. Continue the transition toward digital resources, being cognizant of preferences by discipline. Use College Librarians to ensure consultation with faculty.
2. Do everything possible to make the library's resources easy to find and use.
3. Make acquisition of primary research materials, faculty and student authorship, and university documents an important and growing part of the library's collections. Provide broad access through the institutional repository.
4. Leverage resources across CSU libraries to enhance access to a broader selection of titles and to negotiate advantageous licensing agreements.

Task Group on the Future of the Library

5. *Explore a funding model that encourages colleges to contribute ongoing funds to support their discipline specific information resources.*
6. *Build an endowment to supplement campus funding of collections.*

Services

The Kennedy Library today offers a variety of both traditional and innovative services to the Cal Poly campus. The servicing of the legacy collections still accounts for a fair amount of staff effort. Increasingly staff effort is attempting to migrate the delivery of both information resources and library services to students through the campus information technology infrastructure or individual mobile devices.

Old Service	New Service
Reference Desk	Virtual Reference, AskNow
Reserves	eReserves in Blackboard
Subject Librarians	College Librarians
Library Instruction	Information Literacy

One of the most basic and most appreciated library services is reference. Students or faculty can ask anything from simple navigational issues to complex or esoteric research questions. While reference has traditionally been a physical place, increasingly it is a virtual service. Librarians have been fielding questions for years via email. More recently Cal Poly joined a world-wide consortium of libraries to offer real-time reference assistance over the Web called "AskNow." Librarians from multiple campuses schedule coverage of a "virtual" reference desk available to students for long hours of the day. A librarian from Cal Poly might be helping a student from Fresno in the afternoon but a librarian from Pomona might help a Cal Poly student later that evening. This collaboration makes reference available from literally anywhere. To further expand this type of reference access for students, Kennedy librarians will be testing an IM, or instant messaging, version of the AskNow service in the near future.

Another traditional library service is Course Reserves, a service that allows faculty to make available to students books, articles, personal papers, or any other type of information needed to support instruction. Over the last several years this service has transformed almost entirely into eReserves thereby making these same faculty readings available anytime, anywhere through library Web pages. This year, in cooperation with ITS, eReserves resources will appear directly inside relevant faculty folders in Blackboard, making access more convenient for students.

Also worth noting, several Task Group faculty commented that when they were in graduate school requests through their library's inter-library loan service would typically take weeks or months. The Kennedy Inter-Library Loan service typically provides materials within 5-7 days with articles often being delivered directly from a Web site. Considering the limited size of existing Cal Poly collections, this is a very important service.

Task Group on the Future of the Library

Kennedy librarians have made the transition from reference librarians tethered to desks in the library to College Librarians. This is more than just a name change. While librarians retain their subject focus, the College Librarian model sets expectations for librarians to maximize time spent with faculty and students, particularly in the offices, studios and labs of their college. Library instruction too has changed from an emphasis on "how to find" a book or article to developing information seeking strategies within a discipline that can be the basis for life-long learning. There is also a growing collaboration between College Librarians and the Center for Teaching and Learning (CTL). One full-time library staff member is located in CTL to support faculty. Lessons learned there are shared within the library to improve understanding of faculty pedagogy.

The library's recent effort to establish an institutional repository at Cal Poly is a good example of creating a service that provides value to scholars. By gathering together the scholarly work of faculty and students, the library can encourage broader communication among the colleges, stimulate higher quality student work, and share the quality of Cal Poly's intellectual efforts with the world.

Many of the services and resources that today's students expect are harder to provide because of limited staffing and the lack of resources necessary to develop technical expertise and infrastructure. Kennedy Librarians have produced several online tutorials and a range of specialized Web pages but have yet to expand into social networking applications such as wikis or Facebook. Because student habits have changed so radically, it is incumbent upon librarians to communicate in ways that will reach them.

With so many changes to the library's services and collections there is a renewed need to develop better communication with the campus. Indeed with much of the collection becoming digital, they become invisible to our community. The fact that people can connect to information resources through Google only because the library has licensed the material to begin with and then provided the technical information to Google is lost in their perception of the library. The library needs to devote some staff to outreach and public relations in order that the campus can make more effective use of its resources.

In order to cope with the loss of staffing over the years, the Kennedy Library eliminated a variety of staffing points, including the Learning Resources and Curriculum center, the Media Resources center, and the Government Documents and Maps center. The collections from these centers remain available to the campus, although reduced in size, and the specialized assistance previously offered has been downsized and absorbed into the library's general reference service. These program reductions have helped to transition the Kennedy Library toward a more digital future. While the loss of staff has been a limiting factor, the changes have forced the reconsideration of many traditional service models. The move from a collection-centric view of the library to a more service-oriented model provides value to the campus by supporting the unique applied teaching-learning model central to Cal Poly's identity and curriculum.

Part of changing the campus perception of the library's service model has been to invite into the library building a number of partner groups who also work directly with faculty and students.

Kennedy Library Partner Groups

- Information Technology Services (ITS)
- Center for Teaching and Learning (CTL)
- Research Scholars in Residence
- Honors Program
- Academic Skills Center (ASC)
- Peace Corps

By bringing together student and faculty service providers, the library creates a synergy among units and the expectation that the Kennedy Library is the place to go to support learning and discovery, improve skills, and explore new academic opportunities. Thought is currently being given to whether additional units should join this partnership and what are the appropriate criteria for inclusion.

Service Recommendations:

1. *Emphasize library services that are most vital for student success including information literacy, support of mobile technology, new forms of scholarship, emerging forms of publication, and social networking.*
2. *Expand the transition from traditional library services to a more scholar-centric approach that seeks to provide value to the academic process.*
3. *Adapt library services to millennial student learning paradigms.*
4. *Develop a public relations program to more effectively communicate with the Cal Poly community.*
5. *Provide increased support to students and faculty by exploring linkages among partner groups and the library to better support student success. Bring student and faculty service units together in an expanded library building.*

Technology

The most significant change for academic libraries over the last 25 years is the expanded role of technology in every aspect of its operations. Starting with the nearly invisible but essential functions of acquisitions and cataloging, library automation efforts expanded to include circulation and reserve functions and eventually replaced the card catalog. The online public catalog (OPAC) became the fastest, most comprehensive way to find materials in the library. Large library management systems of this type are called Integrated Library Systems (ILS) and they are now essential for managing and accessing the library's million plus holdings. The ILS represents substantial costs that over time have been integrated into the library's budget. With the development of the Internet and the World Wide Web, the library's Web pages became the true "front door" to the library. The Kennedy Library homepage had more than 354,152 unique visitors and more than 21,116,371 hits last year.

Task Group on the Future of the Library

The Task Group spent a good deal of time learning about millennial student characteristics, their behaviors and expectations. Students view computers and mobile phones as an extension of themselves and a normal part of their environment. They do not really think of these devices as “technology” but they expect digital resources and services to just “be there.” Students are widely and constantly “connected.”

The Task Group used the EDUCAUSE 2007 edition of the *Horizon Report* to learn about emerging technology trends in higher education. The report discusses in some detail six trends that will have significant impact on college and university campuses in the next five years. They include:

- User-created Content
- Virtual Worlds
- Social Networking
- New Scholarship & Emerging Forms of Publication
- Mobile Phones
- Massively Multiplayer Educational Gaming

All institutions and libraries are challenged to address these trends. The Kennedy Library will be introducing student-contributed content through a library wiki site and is currently experimenting with an instant messaging (IM) system to communicate reference information directly to student cell phones. The library is supporting emerging forms of publication through the introduction of its institutional repository project and through the production of online teaching tutorials.

Clearly, from a student’s perspective, technology will be at the core of how they expect to be productive. Future library support of scholarship will therefore increasingly be driven by student demand for technology and the expectation that all of the University’s programs and services will make intelligent use of its potential. Much of the library’s past efforts have tried to create the best possible information environment and then teach students how to use it. Future efforts will instead need to address where to place library resources and services intuitively into virtual “student space.”

Currently the Library Information Technology (LIT) group manages the library’s ILS and OPAC, 13,000 Web pages, 25 servers, two instructional classrooms, approximately 150 staff and student workstations, and the Learning Commons, with a total technical staff of 6.5 FTE. It is a lean operation that now needs to be at the forefront of all library services and resources. LIT is essential to the library’s future aspirations and its efforts need to be interwoven through all facets of library operations.

Technology Recommendations:

1. *Ensure that library initiatives facilitate faculty instructional efforts to incorporate technology in day-to-day work.*
2. *Implement collaboration and social networking technologies in support of learning.*
3. *Track emerging trends on a regular basis and adapt program to best serve faculty and students.*

Task Group on the Future of the Library

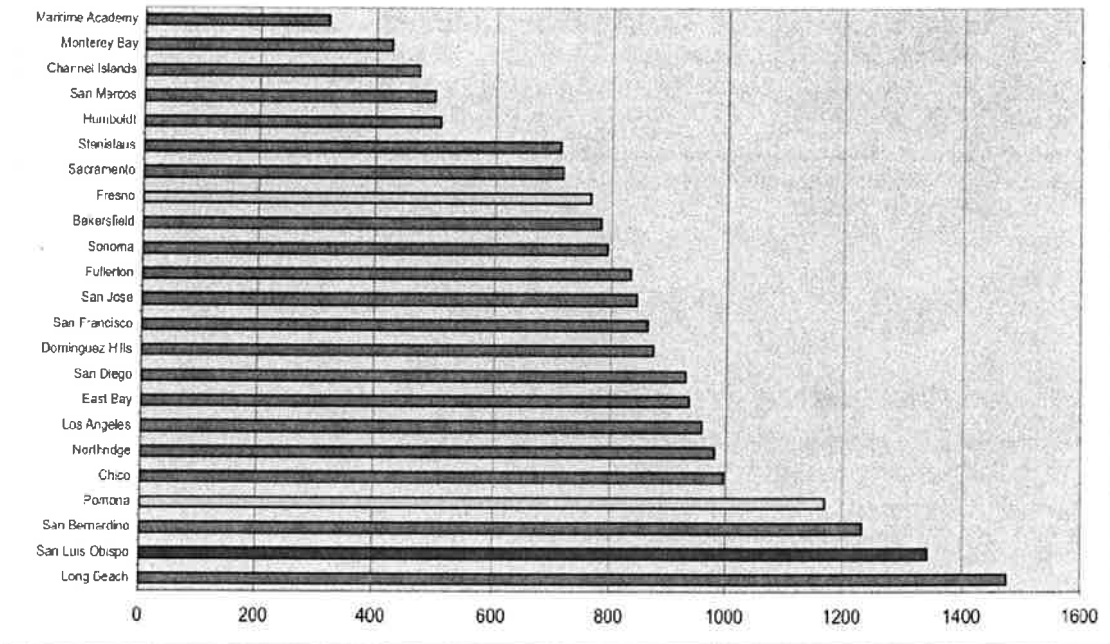
4. *Hire the best technically trained and experienced librarians and Library Information Technology staff. Train to maintain and add skills.*
5. *Continue to build a true partnership with ITS to provide coordinated technology services to the campus.*
6. *Adapt the library's budget to the reality of technology's ongoing costs.*

Personnel

Twenty-five years ago the Kennedy Library had a staff of 71 including 26 library faculty. In 2006, total staffing in Kennedy was less than 50 with only 13 librarians. This dramatic decline in staffing has hampered the library's ability to transform itself and adapt to the many technological innovations that have taken place. Staff has been able to service the legacy collections and maintain services at an acceptable level, but they are stretched to add more online resources, access to computing and computer-based services.

The current level of staffing at the Kennedy Library does not compare well with the rest of the CSU and puts Cal Poly almost at the bottom in rankings of "Students per Librarian"; only CSU Long Beach has a lower ratio. Compared to campuses of similar size, Cal Poly has one librarian for every 1,350 students; Pomona has one librarian per 1,150 students; Fresno has one librarian per 750 students.

Students per Librarian, 2005-06



Task Group on the Future of the Library

As we have gone from the traditional book library to an emerging digital library the demands on library faculty and staff have changed significantly. Consider the following chart that was shared with the Task Group:

Changing Roles of Librarians	
Changes in "Top Five Job Activities" in Terms of Time Spent 1991-2001	
<u>Job Name</u>	<u>% Change</u>
Face-to-face Reference	-12
E-mail Reference	+21
Print Collection Development	-5
E-collection Development	+24
Online Searching	+19
Mediated online Searching	-19
Library Instruction	-15
Information Literacy Instruction	+15
Design Instructional Handouts	-14
Design Web Pages	+19
Attend meetings	-14
Supervise	+14

Based on data from Cardina, Christen, and Donald Wicks, *The Changing Roles of Academic Reference Librarians Over a Ten-Year Period*, Reference & User Services Quarterly, Vol.44, No.2 Winter 2004.

The chart above represents an overall increase of 33% in the workload of librarians and is only a partial picture. Librarians who were hired with the skills to service the traditional library model continue to support the legacy collections and services, and at the same time have taken on new roles including at least some of the following:

- Licensing
- Negotiating
- Rights management
- Scanning operations managers
- Technical troubleshooters
- Software & web developers
- Web designers
- Usability testers
- Information architects
- Public Relations
- Assessment specialists
- Scholarly publishers
- Policy advocates
- Rich Media Producers

With fewer library faculty already stretched to adapt to the changing academy, it is difficult to acquire the new skills needed to grow the library's program in support of today's students or the more sophisticated needs of faculty. The library needs some additional resources to raise technical proficiency among its faculty.

Task Group on the Future of the Library

The role of staff has changed considerably too. What were once considered purely clerical positions are now totally dependent on multiple technologies for the completion of most daily tasks. In recognition of these changes, the California Public Employment Relations Board (PERB) recently granted the move of the entire Library Services Specialists series into Bargaining Unit 9 (Technical/Professional).

The staffing picture at the Kennedy Library has begun to improve. In the past year the Provost has approved new funding for two librarians, a staff position, and .5 FTE advancement position. The need for a dramatic increase in staffing is not anticipated in the future. Migration from older legacy processes to digital collections and services will gradually free up some staff to support new initiatives. Some additional "transitional" staffing would be welcome in the interim as the library attempts to add specialized skills. Overall use of staff is expected to change from stewardship of physical collections to facilitation of scholarship through expanded digital services. An increase in the number of College Librarians would also be appropriate. Right now there is only one librarian assigned per college, ignoring the current reality of student population size or the number of faculty served, or the complexity of specific college curricula.

Personnel Recommendations:

1. *Gradually increase the number of librarians to one per 1,000 students.*
2. *Add three staff positions to facilitate current efforts for student engagement and access to digital resources. Re-evaluate specialized staffing needs following the building renovation.*
3. *Increase the level of funding for professional development for library faculty and staff by 20%.*

Budget

The existing Robert E. Kennedy Library building was completed in 1980 and has had no significant renovation or upgrade in the intervening years. Yet during that time the world of learning and information has undergone a radical transformation. The IBM personal computer (PC) was introduced in 1981, the Web first gained attention in 1993, and in 2004 Google announced its intention to digitize over 10 million volumes from the holdings of major research libraries. Each of these milestones has had a significant impact on campus learning environments and libraries. As the library looks ahead to a major renovation and expansion of the existing building, it seems fitting to use an examination of the intervening 25+ years as a means of comparing what has been happening in the library.

In 1983 the library was funded solely by the State at a level of \$3.4M. In 2007, the State portion of the library budget was \$5.4M. Additional funding from the Cal Poly Plan and the State Lottery brought the total library budget up to \$6.3M. This compares reasonably well to other CSU campuses of similar size (more than Pomona, less than Fresno) but is surpassed by competitors such as Texas State-San Marcos at \$9.9M or Virginia Tech at \$12.5M. It is important to note that from FY2002-03 to FY2006-07 the Kennedy Library's overall budget had a **net decline of \$561,453.**

Task Group on the Future of the Library

National Center for Education Statistics

Data from Academic Libraries Survey Fiscal Year: 2004 (most recent year)
Sorted by enrollment

Library Name	Total FTE 12 month Enrollment	Total Library Expenditures	Total Library Expenditures Per Person Enrolled (FTE)	Librarians	Librarians Per 1,000 Enrolled (FTE)	All Other Paid Staff	Gate Count in a Typical Week	Hours Open in a Typical Week
WESTERN WASHINGTON	13,111	\$4,836,059	\$368.86	18	1.45	43	28,482	96
CSU-POMONA	16,443	\$4,015,995	\$244.24	14	0.83	37	24,943	79
CSU-SAN LUIS OBISPO	16,893	\$4,497,430	\$266.23	12	0.71	41	32,288	109
CSU-FRESNO	17,488	\$6,679,789	\$381.96	24	1.5	47	14,569	91
TEXAS STATE, SAN MARCOS	22,466	\$7,849,696	\$349.40	27	1.47	53	25,639	105
VIRGINIA TECH	25,804	\$11,686,981	\$452.91	36	4.88	90	28,782	97

Overall budget support determines the level at which the library can serve the Cal Poly community. At current funding levels the Robert E. Kennedy Library can do a reasonably good job of supporting the traditional undergraduate instructional program. Our collections are broad, our services are the ones that faculty generally expect to find, and our provision of technology is adequate.

But in the last 25 years Cal Poly has grown from a campus of 14,099 to 19,312 students. The use of technology has become deep and pervasive and has changed in significant ways the business of the academy. There is now an expectation that Cal Poly will grow its graduate programs and that support of faculty research is an important part of the teacher-scholar model. The library's current budget is inadequate to respond to these or other new challenges in the years ahead.

Budget Recommendations:

1. Increase library advancement efforts in collaboration with the University Advancement Office. Make the library a major fundraising goal in the upcoming capital campaign.
2. Tie growth of the University's graduate program to increases in the library's budget to support those programs. Consider making an analysis of the library's available information resources and services a required part of new academic program development.
3. Grow funding of Library Services to match the mission and aspirations of the University.

Conclusion

From the earliest days of the university, the library has been viewed as an important resource to support teaching and research. Despite the vast changes to the academy, the library remains an essential resource for supporting student success and faculty research. Pushed by changes in technology and student expectations, the model of the academic library is changing very rapidly. The Robert E. Kennedy Library is in a good position to navigate this transition. The opportunity to renovate and expand the library building is an excellent way to refocus campus thinking about what it needs most from Library Services. There is a compelling need – and opportunity – to match the Kennedy Library's services, collections, and technology to the mission and aspirations of Cal Poly.

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Adopted:

**ACADEMIC SENATE
of
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, CA**

AS-__-08

**RESOLUTION ON
NEW MASTERS OF SCIENCE DEGREE IN
BIOMEDICAL ENGINEERING**

- 1 WHEREAS, The Biomedical and General Engineering Department is proposing the
2 implementation of Masters of Science in Biomedical Engineering to be taught in
3 addition to the Biomedical Engineering specialization in the Masters of Science in
4 Engineering degree; and
5
- 6 WHEREAS, The existing specialization and BS degrees in Biomedical Engineering are very
7 popular and strongly supported by the Dean of Engineering and their industries;
8 and
9
- 10 WHEREAS, The Academic Senate Curriculum Committee has carefully considered this
11 proposal and recommends its approval; and
12
- 13 WHEREAS, A summary of the proposal is attached to this resolution with the full proposal
14 available in the Academic Senate office; therefore be it
15
- 16 RESOLVED: That the Academic Senate of Cal Poly approve the proposal for a Masters of
17 Science in Biomedical Engineering and that the proposal be sent to the
18 Chancellor's Office for final approval.

Proposed by: Academic Senate Curriculum Committee
Date: January 2, 2008



College of Engineering

Cal Poly San Luis Obispo

Memorandum

From:

~~To:~~

Dr. William Durgin, Provost

Date: January 9, 2008

Via:

David Conn, Academic Programs

To:

~~Via:~~

Academic Senate

From:

Mohammad Noori, CENG Dean *M. Noori*

Subject:

Letter of Support for the BMED MS Program

I am pleased to provide my full support for the establishment of the Master's of Science in Biomedical Engineering Program. This program is a logical outgrowth of an extremely popular MS in Engineering with a specialization in Biomedical Engineering. Currently, this program is the largest graduate program in the College of Engineering and has extensive industrial support from companies, such as St. Jude Medical, Medtronic, Abbott, and Edwards Life Sciences.

The BMED MS program is critical to furthering the College of Engineering and Cal Poly's mission. As such, I am fully committed to providing the necessary faculty, staff, and space in order to achieve the goal of establishing and maintaining the nation's premier professional master's program in biomedical engineering.

These are exciting times for the College and we are realizing our potential to become the best engineering college in the nation. The BMED MS Program is one of many examples of our continued success. I urge you to partner with us to create the number one BMED MS program in the nation.

APPROVED:

William W. Durgin

William W. Durgin *1/16/08*
Date

Biological Sciences Department

CAL POLY

SAN LUIS OBISPO

CA 93407

Memorandum

To : Lanny Griffin
Director
Biomedical and General Engineering

Date: November 27, 2007

From : Michael A. Yoshimura, *Michael A. Yoshimura*
Chair
Biological Sciences Department

Copies:

Subject: MS in Biomedical Engineering

The Biological Sciences Department has no objections to the proposed MS Degree in Biomedical Engineering. We do have some concerns.

The list of Elective Courses in Section 4.g only has three courses offered by the Biological Sciences Department. We realize that the current list is not meant to be comprehensive. However, below, is a list of additional courses we feel would be appropriate for students interested in some areas of biomedical engineering and wanting a biological perspective:

BIO 426 Immunology (Prerequisite: BIO 351)
BIO 432 Vertebrate/Human Anatomy and Physiology I (Prerequisite: BIO 361)
BIO 433 Vertebrate/Human Anatomy and Physiology II (Prerequisite: BIO 361)
BIO 452 Cell Biology (Prerequisite: BIO 351 or CHEM 373 and CHEM 312 or CHEM 317)
ZOO 428 Hematology (Prerequisite: BIO 351)

We also do not have problems with students in this proposed program having access to graduate courses in Biology as long as the students have the appropriate prerequisites, academic background, or consent of the instructor. However, we will have a course enrollment capacity issue if a large number of BMED students enroll in our graduate classes and compete for spaces with students in our program.

A similar concern is the requirement that the BMED students have taken ZOO 331 or equivalent. The expectation is that most of the students should have had this prerequisite prior to beginning the MS degree program. However, if a large number of students need to enroll in ZOO 331, we may have enrollment capacity issues. We would appreciate being consulted on projected enrollment needs for the biomedical engineering programs.

Cal Poly, San Luis Obispo

**Summary Statement of Proposed New Degree Program for
Review by Academic Senate
(one or two pages)**

1. Title of Proposed Program.

Master's of Science in Biomedical Engineering

2. Reason for Proposing the Program.

Currently, students can obtain a Master's of Science in Engineering with a specialization in biomedical engineering. This specialization has been on-going since 2000. The specialization was developed as a means to satisfy student demand without a formal program in biomedical engineering. It has been our intention that when a biomedical engineering department was formed, we would offer a Master's of Science in Biomedical Engineering. The Biomedical Engineering Program is now established and the MS in Engineering Specialization program is wildly popular with students within the College of Engineering, and other colleges at Cal Poly (primarily Science and Math). Furthermore, there is a profound interest from industry. All of these factors portend that the time for having a formal Master's of Science degree is now.

3. Anticipated Student Demand.

	Number of Students		
	<u>at initiation</u>	<u>3 years after initiation</u>	<u>5 years after initiation</u>
Number of Majors	60	90	120
Number of Graduates	15	35	50

4. Indicate the kind of resource assessment used in developing the program proposal. If additional resources will be required, the summary should indicate the extent of department and/or college commitment(s) to allocate them.

We have examined the library resources and believe that the program can be supported by current subscriptions, textbooks, and the interlibrary loan program. In fall 2007, we have 5 new faculty as well as the support of the Dean to add additional faculty. We have examined space allocation and have a commitment to use interdisciplinary space in Engineering IV for meeting some of the demands for space needed to support the program. We have made use of current space

allocations by creating multi-purpose laboratory space that can easily be configured for a diverse set of laboratory experiences.

5. If the program is occupational or professional, summarize evidence of need for graduates with this specific education background.

The very nature of this complex, multidisciplinary field almost necessitates that students obtain a graduate degree. Biomedical engineering combines engineering expertise with medical needs for the enhancement of health care. It is a branch of engineering in which knowledge and skills are developed and applied to define and solve problems in biology and medicine. Students choose the biomedical engineering field to be of service to people; for the excitement of working with living systems; and to apply advanced technology to the complex problems of medical care. The biomedical engineer is a health care professional, a group which includes physicians, nurses, and technicians. Biomedical engineers may be called upon to design instruments and devices, to bring together knowledge from many sources to develop new procedures, or to carry out research to acquire knowledge needed to solve new problems. Graduates with the MS in Engineering continue to find excellent employment, with about 20 to 30 percent going on the medical schools and doctoral studies. The continued popularity of the distance learning program with industry demonstrates that industry believes that there is a chronic need engineers to have an MS degree in biomedical engineering.

6. If the new program is currently a concentration or specialization, include a brief rationale for conversion.

We intend to keep the current specialization in BMED as an option for students who desire additional flexibility as well as providing a degree opportunity for those who prefer a non-thesis MS. The current concentration was proposed to meet student and industry demand before a Biomedical Engineering Program existed. The overwhelming demand indicates that a named master's program will serve both students and our industrial partners.

7. If the new program is not commonly offered as a bachelor's or master's degree, provide compelling rationale explaining how the proposed subject area constitutes a coherent, integrated degree major which has potential value for students. If the new program does not appear to conform to the CSU Board of Trustee policy calling for "broadly based programs," provide rationale:

N/A

8. Briefly describe how the new program fits with the department/college/ university strategic plans.

The MS in engineering provides an additional means create growth to the college and university by attracting students who would otherwise not come to Cal Poly. It provides a logical means for students from other engineering programs to specialize in biomedical engineering. Our industrial partners are attracted to the

program because it provides a means for obtaining a master's degree at their workplace. While other institutions offer distance learning programs, ours is synchronous, and is less expensive than private institutions. Further, Cal Poly benefits from this arrangement on many levels; for example, our students have greater access to the company through cooperative education and internships as well as obtaining full time employment.

Curriculum

Total number of units required for the major.

- 45 units minimum
- At least half of the units are 500 level
- Up to nine (9) units of thesis

A list of all courses *required* for the major, specifying catalog number, title, units of credit, and prerequisites or co-requisites (ensuring that there are no “hidden” prerequisites that would drive the total units required to graduate beyond the total reported in 4c above).

Required Course	Units	Prerequisite
BMED 460 – Engineering Physiology	4	ZOO 331, BMED 310
BMED 512 – Biomedical Engineering Horizons	4	MATH 143, CHEM 125, PHYS 131, BIO 161
BMED 530 – Biomaterials	4	BIO 213, ENGR 213, MATE 213
BMED 550 – Current and Evolving Topics in Biomedical Engineering	4	Graduate Standing or Consent
BMED 563 – Biomedical Graduate Seminar	2	Graduate Standing or Consent
BMED 599 – Design Project (Thesis), BMED 591, BMED 592 can sub for 2 or 4 units of thesis or project	9	Graduate Standing

List of *elective* courses that can be used to satisfy requirements for the major, specifying catalog number, title, units of credit, and prerequisites or co-requisites. Include proposed catalog descriptions of all new courses. For graduate program proposals, identify whether each course is a graduate or undergraduate offering.

Elective Courses (18 units)	Units	Prerequisites
Any BMED or ENGR Course at 400 or 500 level	Varied	varied
BIO 441 Bioinformatics Applications (4)	4	BIO 111 or 161
BIO 426 Immunology	4	BIO 351
BIO 432 Vertebrate/Human Anatomy I	5	BIO 361
BIO 433 Vertebrate/Human Anatomy II	5	BIO 361
BIO 452 Cell Biology	5	BIO 351 or CHEM 371 and CHEM 312 or CHEM 317
BIO 501 Cell & Molecular Biology	4	Graduate Standing
BIO 502 Biology of Organisms	4	BIO 501
BIO 542 Multivariate Biometry	4	2 courses in statistics
CHEM 544 Polymer Physical Chemistry and	3	CHEM 351

Analysis		
CHEM 545 Polymer Synthesis and Mechanisms	3	CHEM 317
CHEM 547 Polymer Characterization and Analysis Laboratory	2	CHEM 544
CHEM/MATE 446 Surface Chemistry of Materials	3	CHEM 305 or 351, or engr thermodynamics
CHEM 473 Immunochemistry	3	CHEM 371 or consent
CHEM 478 Pharmaceutical Development	3	CHEM 318
CSC 448 Bioinformatics Algorithms	4	CSC/CPE 103 or BIO 447
CE 504 Advanced Finite Element Analysis I	4	CE 501 or consent of instructor
CE 505 Advanced Finite Element Analysis II	4	CE 504
EE 513 Control Systems Theory	4	EE 301 or consent of instructor
EE 514 Advanced Topics in Automatic Control	4	EE 513
IME 437 Advanced Human Factors Engineering	3	IME 319, IME 326
ME 402 Orthopedic Biomechanics	4	ME 328 or consent
ME 404 Applied Finite Element Analysis	4	ME 329
ME 501 Continuum Mechanics and Linear Elasticity	4	ME 401 or consent
ME 502 Finite Element Analysis	4	ME 501 or consent
ME 503 Inelastic Stress Analysis	4	ME 501 or consent
STAT 513 Applied Experimental Design and Regression Models	4	One of the following: STAT 512, STAT 217, STAT 218, STAT 221, STAT 252, STAT 312, or equivalent.
STAT 530 Statistical Computing I: SAS	4	One of the following: STAT 512, STAT 513, STAT 542
STAT 542 Statistical Methods for Engineers	4	MATH 142
MATH 418 – Partial Differential Equations	4	MATH 344, MATH 304 Recommended
MCRO 423 – Medical Microbiology	5	MCRO 225 and CHEM 312 or CHEM 316
MCRO 402 – General Virology	4	BIO 351 or CHEM 373
KINE 406 – Neuroanatomy	4	ZOO 331, ZOO 332
KINE 445 – Electrocardiography	4	KINE 303 or consent
ZOO 428 Hematology	4	BIO 351

This list is not meant to be by any means exhaustive, but rather a small sampling of some acceptable courses. There are many other acceptable courses from many other disciplines. The students will develop a detailed formal study plan in consultation with their graduate advisor.

Adopted:

**ACADEMIC SENATE
of
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, CA**

AS-__-08

**RESOLUTION ABOLISHING THE
ACADEMIC SENATE LIBRARY COMMITTEE**

- 1 WHEREAS, The Academic Senate Library Committee has been in existence since at least 1976;
2 and
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4 WHEREAS, The business of the committee has been intermittent; and
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6 WHEREAS, Intermittent business is best addressed not by a standing committee but by an ad
7 hoc committee as provided for in the *Constitution of the Faculty and Bylaws of the*
8 *Academic Senate*; and
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10 WHEREAS, The Library Committee's oversight function is shared with the Academic Senate
11 Curriculum Committee and Research & Professional Development Committee; and
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13 WHEREAS, The oversight function could reasonably be shared with the Academic Instruction
14 Committee; and
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16 WHEREAS, The college librarians provide a direct and effective link to the disciplines
17 represented by each college; and
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19 WHEREAS, The Academic Senate is best served by a service structure that is compact and
20 robust; therefore be it
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22 RESOLVED: That the Academic Senate Library Committee be abolished; and be it further
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24 RESOLVED: That all references to the Library Committee be removed from the *Constitution of*
25 *the Faculty and Bylaws of the Academic Senate*; and be it further
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27 RESOLVED: That the *Constitution of the Faculty and Bylaws of the Academic Senate* be
28 revised to include "providing library oversight as it relates to instruction" among
29 the responsibilities of the Instruction Committee.

Proposed by: Academic Senate Library Committee
Date: January 23, 2008

COLLEGE COUNCILS (January 2008)

Agriculture

CAFES College Council meets for 2 hours each Tuesday morning. It is attended by dept heads, assoc deans, certain staff members (head of the farm, etc) and a few others, but I am not sure who. I was invited to attend as caucus chair under a previous dean, and while not specifically invited now, I could probably attend if I asked. I am welcome at any time there is something from the Senate. It would be nice to go, although they are boring, but it is too much time.

Agenda is items from the Dean's Council, and anything else of interest-budgets, recruitment, fund raising, college events, industry and alumni matters, etc.

Architecture

CAED has a manager's meeting every other Tuesday, which includes the dean, associate dean, department heads, and dean's staff. An attempt has been made to include the caucus chair but only one invitation has been extended.

Business

The OCOB has semi regular meeting of the Area Chairs and the two Associate Deans. The agenda varies but it includes strategic initiatives, reports from the various committees in the OCOB, etc. It also deals with our Faculty Annual Report issues, accreditation issues, etc. I was on this committee a few years ago under a different Dean. I have heard that the meetings are somewhat different now but the items I have listed above are pretty accurate. How detailed info do you want about their agenda?

Education

The COE does not have a College Council per se. We do have an Executive Committee that consists of administrative and instructional personnel. The ExCo is driven by the dean and addresses policy and administrative issues. There is a larger group (an extension of the ExCo) that includes more academic personnel.

The ExCo meets regularly at the pleasure of the dean. Strategic planning, accreditation, and budget occupy most of the agendas.

Engineering

Who attends meetings? Department chairs and guests, including the Senate Caucus Chair, Career Services, Counseling Services and administrative members on the Dean's staff.

What is on the agenda? Varies - but the guests each gives brief reports/announcement and the dean occasionally has announcements.

Library

The Chair oversees and leads the Council in its official charge: Promote library faculty effectiveness and uphold professional standards to meet library users' needs; demonstrate the library's value to the campus; advise, respond, and work in concert with the Dean of Library Services and the Leadership Team to meet the overall goals and objectives of the Kennedy Library and Cal Poly; determine policies and procedures for Library faculty appointment, retention, promotion, tenure, and post-tenure review; and recommend library policies and procedures to the Dean.

All library faculty attend - the Dean is an Ex Officio member. We generally meet once each month - agendas are created by the executive committee.

Agendas focus on a wide range of RPT and governance issues including: revisions of handbook and bylaws; recruitments; etc.