

Adopted: May 25, 1989

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

AS-322-89

RESOLUTION ON
PROPOSAL TO ESTABLISH THE CIM CENTER

RESOLVED: That the attached Proposal to Establish the CIM Center be adopted by the Academic Senate and recommended to the President for approval.

Proposed By:
See attached proposal for
names of interested faculty
May 9, 1989

**PROPOSAL TO ESTABLISH
A
COMPUTER INTEGRATED MANUFACTURING CENTER**

at

**California Polytechnic State University
San Luis Obispo**

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April 1989

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**Proposal to Establish
A
Computer Integrated Manufacturing (CIM) Center
at Cal Poly, SLO**

Time For Computer Integrated Manufacturing is Now:

American manufacturers and producers are subject to increasing competition in domestic and international product and service areas. Whereas in the past, American manufacturers had commanding market presence and control in these areas, today entire domestic product sectors are emaciated (steel production, optics, ore recovery), are unhealthy (electronic substrates), or are in continual jeopardy of succumbing to foreign competition (automobile manufacture, commercial aircraft manufacture). American industry is beginning to respond to competitive pressures in the face of evolving product and production technology. Also, lacking a strong management of technology program, many investments in technology (technology for the sake of technology) have failed.

In many cases, technology is changing so rapidly that industrial employees find themselves falling so far behind that they actively resist the introduction of new technology. Managing this technological change can help a company remain current; and an influx of graduates from existing degree programs, that have a contemporary education and exposure to current process technology, will provide a major vehicle for introducing and implementing necessary changes.

Departments in the various Schools at Cal Poly, SLO have made contributions to integrated manufacturing in areas of education, research, and development. Center participants will be uniquely able to contribute to computer integrated manufacturing because of the hands-on educational philosophy of Cal Poly. The nascent center is an asset eagerly anticipated by California and U.S. industry.

Computer integrated manufacturing is an engineering and management framework, formed to improve manufacturing process productivity through integration programs and integration technologies. In this respect CIM is a business methodology as well as an engineering discipline. The CIM Center at Cal Poly will serve the immediate needs of American industry by providing answers to specific problems and disseminating information. The center will serve the long range needs of industry by providing graduates with computer integrated manufacturing awareness and expertise.

PURPOSE:

Computer integrated manufacturing is an university-wide interdisciplinary endeavor. Efforts by individual faculty, and even orchestrated efforts by entire departments would not answer the current needs of the American manufacturing sector. The proposed Center will be an organizational vehicle to coordinate an industry-university partnership at Cal

Poly. The Center will serve as a common ground for the meeting of varied university resources and industrial opportunities. The Center will support the interdisciplinary needs of computer integrated manufacturing education and research, and will foster interaction between industry and the university, consistent with the goals of Cal Poly.

BENEFITS

Benefits to Cal Poly

The Center will provide a vehicle for:

- o the interaction of students and faculty from varied academic backgrounds;
- o the focusing of academic talent on pertinent industrial problems;
- o allowing the substantial talents of the students and faculty to flower in areas of strength, and grow into new areas;
- o the fostering of the "hands-on" experimental learning approach;
- o more efficient and effective use of university facilities;
- o stimulating research and development in CIM, and promoting education in CIM concepts;
- o stimulating activity in the development of meaningful CIM curricula and promoting the permeation of CIM concepts into existing courses;
- o promoting partnerships in the Industrial Associate and Graduate Internship programs;
- o the cooperation, interaction, and sharing with other centers on campus.

Benefits to Industry

The Center will provide a vehicle for:

- o the interaction of faculty and industry in the development of courses and workshops;
- o improving the ability of companies to conceive of new products, and to deliver these products in a timely and cost-effective fashion;
- o bringing industry needs and priorities to interested problem solvers;
- o testing preliminary concepts and prototypes;
- o sharing state-of-the-art technology with those most able to implement that technology;
- o creating opportunities for professional development;
- o finding graduates who can respond to the industry need for personnel familiar with computer integrated manufacturing, and who are willing to participate in its development and implementation.

CENTER FUNCTION

The proposed Center will be responsible for the coordination of CIM activities on the Cal Poly campus. The Center will obtain funds and provide direction for research, development and training in the computer integrated manufacturing arena. Specifically, the Center will endeavor to:

- o provide research, development and training programs using state-of-the-art computer integrated manufacturing technologies;
- o establish an Invited Lecture Series;
- o provide short courses, conferences and workshops to practicing professionals and other interested groups;
- o develop a visiting student and visiting professor program to strengthen the hands-on approach in CIM technology transfer;
- o stimulate and promote collaborative relationships with similar groups at other universities;
- o make modern equipment and state-of-the-art technology available to Cal Poly students.

Existing CIM activities include the campus IEEE Video Conference of May 1987, personnel loans by Northern Telecom, and relationships with the Consortium for Integrated Design and Manufacturing Education and the Institute for Manufacturing and Automation Research during the past two years. These activities have generated industry and government support, as follows:

TRW Faculty Assistantship.....	\$ 30,000
IBM CAFE & DMIS Projects.....	\$ 50,000
Northern Telecom University Interaction Program.....	\$ 80,000*
DEC Electronic Manufacturing Project.....	\$ 50,000
Controlled Traffic Farming Project.....	\$ 200,000
ICADS Project.....	\$ 300,000
Menon NSF ILI Grant.....	\$ 65,000
Cheda NSF ILI Grant.....	\$ 42,000

* each year for past four years

In addition industry has demonstrated its willingness to loan key personnel for extended periods of time. (Andrew Young, Northern Telecom executive loan program).

A listing of some major educational, research and development activities that could be conducted within the framework of the proposed Center follows. The unique expertise of Cal Poly personnel, and their dedication to the "learn by doing" ideal provide for a singular capability. A synergistic expansion of this capability will accompany growing industrial involvement.

Extension Programs

Short courses and seminars will include discussion topics such as Process Planning,

Design Verification, Expert Systems, Human Impact Issues, Implementation Strategies, Quality and Cost Management, and Inventory Management.

Training Programs

Training courses will be based on particular laboratory or computer facilities including Expert Systems, Simulation, Networking, and Programmable Controller Applications.

Development

Development includes identification and solution of integration problems in computer-aided design, manufacturing, and management.

BUDGET

The operating budget of the proposed Center will be closely aligned to the evolving level of industry support. While initial funding levels may not allow the employment of any staff, it is expected that eventually the Center will generate adequate funds to support the following operational expenses:

Director	0.5 time
Manager	\$80,000
Administrative Asst.	\$40,000
Technician	\$60,000
Operating Expenses	\$50,000

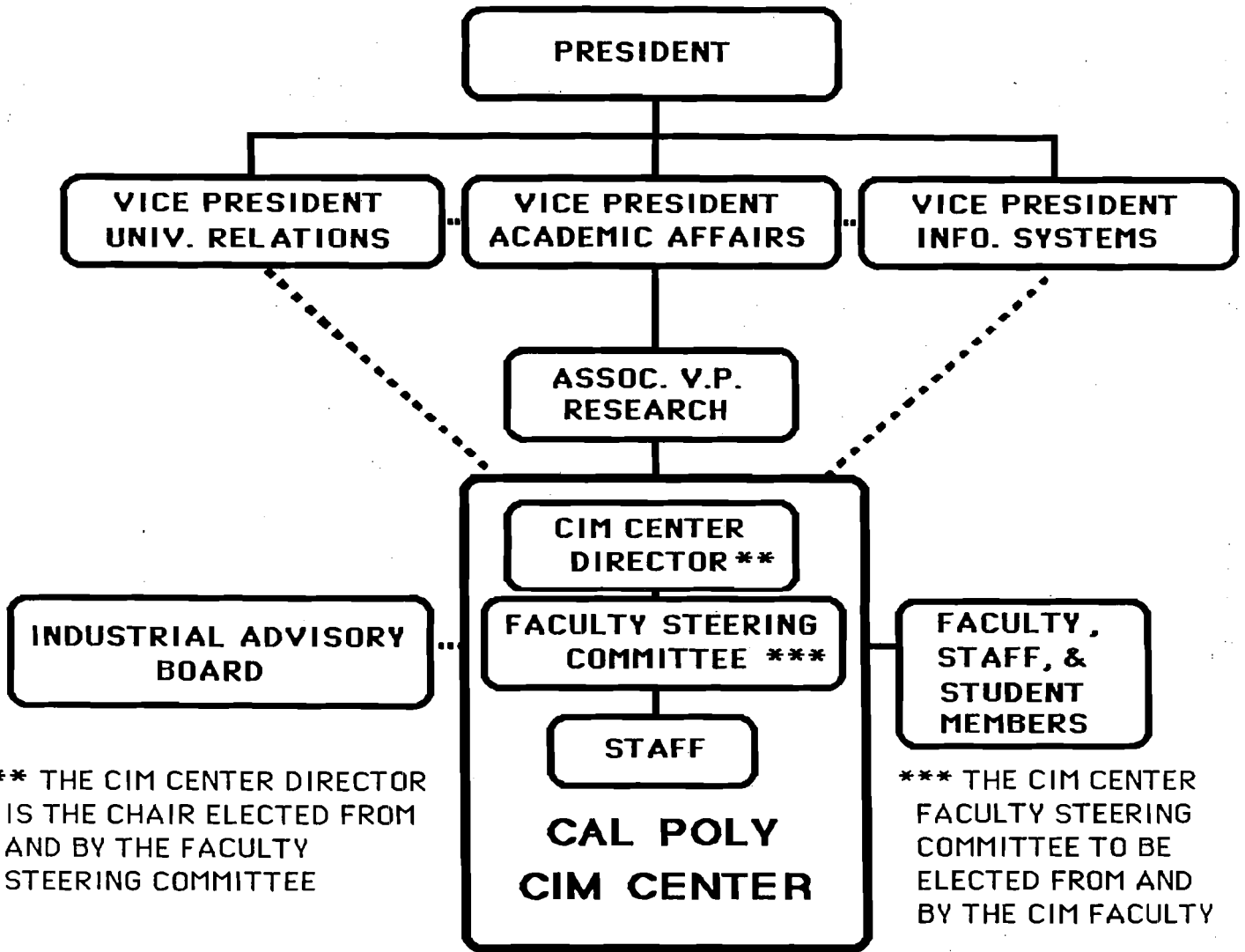
All support for this budget will come from industrial subscription, gifts, and loans from industry. No state funds are being requested.

FACILITIES

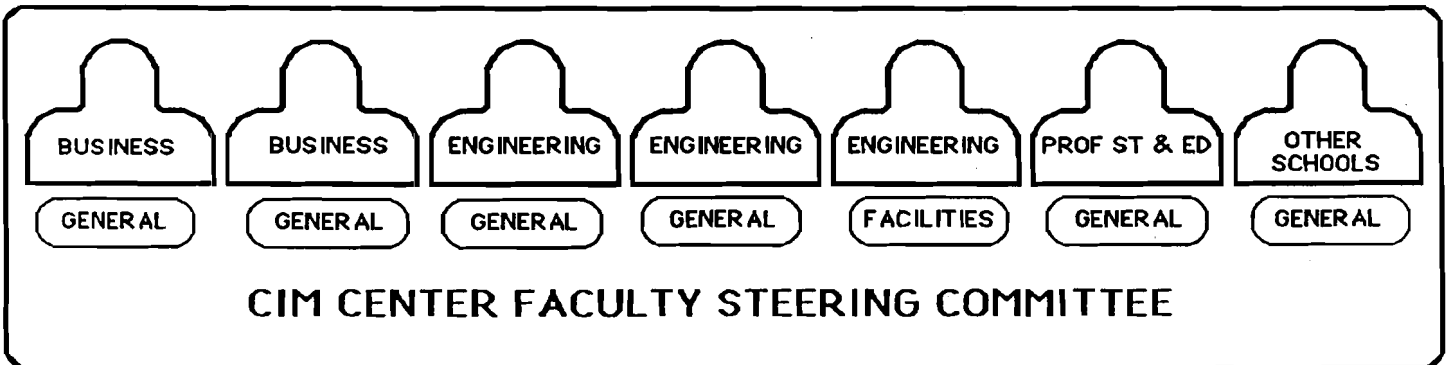
Computing and laboratory facilities exist within academic departments and within Information Systems. The distributed environment includes computer-aided design laboratories in Mechanical Engineering, Civil and Environmental Engineering, Engineering Technology, and the Computer Aided Productivity Center, manufacturing laboratories in Engineering Technology and Industrial Engineering in the School of Engineering, and Industrial Technology in the School of Professional Studies and Education as well as computing laboratories in the School of Business. The Schools of Agriculture and Architecture and Environmental Design will also be involved. SLONET and other campus communication networks provide the means to link these diffuse facilities together without physical reorganization.

Space needed for sponsored computer-integrated manufacturing projects, as required, could be accommodated within existing facilities. As industrial subscription increases, a new laboratory will be established.

CIM CENTER ORGANIZATION



**** DOTTED LINES INDICATE CHANNELS OF COMMUNICATION ONLY AND NOT DIRECT ADMINISTRATIVE RESPONSIBILITY



BYLAWS OF THE CIM CENTER

California Polytechnic State University, San Luis Obispo

These bylaws are applicable within the authorization established by the Board of Trustees of The California State University and the California Polytechnic State University, San Luis Obispo.

ARTICLE I - NAME

The name of this organization shall be the Computer-Integrated Manufacturing Center (CIM Center), referred to in these bylaws as the CIM Center or the Center.

ARTICLE II - PURPOSE AND POLICIES

Section 1 - Purpose

The primary purpose of the CIM Center is to support the multi-disciplinary needs for CIM education and applied research. The Center will foster interaction between the University and industry, consistent with the overall goals of Cal Poly.

Center members are faculty, adjunct faculty, staff, and students who have a declared interest in CIM related activities at Cal Poly.

The CIM Center will serve as a vehicle for securing industrial sponsorship and support to sustain CIM oriented projects at the Center.

Section 2 - Policies

The policies of this Center shall be in harmony with the policies of The California State University, the California Polytechnic State University, San Luis Obispo, and the California Polytechnic State University Foundation.

Section 3 - Distribution of Excess Funds

For sponsored CIM projects, unallocated excess indirect costs will be returned to the project's Principal Investigator and Administrative Unit as designated in the project approval document and in accordance with university policies.

Section 4 - Dissolution

In the event the Center is dissolved, financial assets remaining after payment of or provision of, all debts and liabilities shall be distributed to the California Polytechnic State University Foundation in trust for Cal Poly.

ARTICLE III - MEMBERSHIP

Section 1 - Class of Membership

Only faculty, adjunct faculty, students, and staff of the California Polytechnic State University, San Luis Obispo, shall be members of the Center. The membership is defined as follows:

a. - Faculty and Adjunct Faculty

Faculty members are those persons appointed by the University to faculty rank.

b. - Staff

Staff members are those persons serving the University in either an instructional or non-instructional capacity who do not hold faculty rank.

c. - Student

Student members are those persons engaged in study at the University on either a full-time or part-time basis.

Section 2 - Admission to Membership

a. - Eligibility

Membership is available to all interested faculty, students, and staff. Voting rights are restricted to faculty members.

b. - Acknowledgement of Membership

The Director of the Center shall maintain the current list of members.

Section 3 - Term of Membership

Membership shall be renewable every two years by written request of the member.

Section 4 - Fees and Dues

There shall be no fees or dues paid by members.

Section 5 - Role of Members

Members are encouraged to participate in the research and development activities of the Center. They may propose programs to be implemented by the Center. These programs will receive Center support as necessary and possible.

Members are expected to provide support to the programs of the Center and assist the Director in program development.

ARTICLE IV - ADMINISTRATION

Section 1 - Director

The Center will be administered by a Director who will be the elected Chair of the CIM Center Faculty Steering Committee. The term of election is two (2) years.

The Director will serve on a release-time or overload basis, subject to the availability of funds. The amount of time will vary from quarter to quarter and will depend on available funds and anticipated work load for the particular quarter. The Director will report to the Associate Vice President for Research, Faculty Development, and Graduate Studies and will have the prime responsibility for the development and direction of the Center.

Section 2 - Annual Report

By May 31st, the Director will submit an Annual Report to the Associate Vice President for Research, Faculty Development, and Graduate Studies with copies to the Vice President for Academic Affairs, the Vice President for University Relations, the Vice President for Information Systems, the Deans of the Schools, the Industrial Advisory Board, and the members of the Center.

The report will include a summary of the past year's activities, a plan of the proposed Center activities for the following year, a proposed budget for the next fiscal year, and a financial statement and balance sheet. Included as an appendix will be a collection of abstracts of completed, in progress, and proposed projects.

The director will meet at least annually with the Deans' Council to report on progress and discuss issues and policies with respect to the CIM Center's activities.

ARTICLE V - STEERING COMMITTEE

Section 1 - CIM Center Faculty Steering Committee

There shall be a CIM Center Faculty Steering Committee of seven members. The committee will elect from its membership a Chair who will serve as Director of the CIM Center. The Chair serves at the pleasure of the committee and will vote only in the case of a tie.

Section 2 - Election of the CIM Center Faculty Steering Committee

Membership of the CIM Center Faculty Steering Committee is apportioned as follows: One general member from the School of Professional Studies and Education, two general members from the School of Business, two general members from the School of

Engineering, a facilities coordinator member from the School of Engineering, and one general member from the other schools. All current members of the CIM Center are entitled to nominate and vote for representatives from their own school, except that CIM Center members from the Schools of Agriculture, Architecture and Environmental Design, Liberal Arts, and Science and Mathematics are entitled to nominate and vote for the one representative from their schools. The term of election is two (2) years.

Section 3 - Meetings

The CIM Center Faculty Steering Committee will meet at least quarterly to review Center programs and to set the policies of the Center. The Committee may elect to meet for special purposes at any other times upon agreement of a majority of members or by request of the Director.

Section 4 - Number Constituting a Quorum

Five members shall constitute a quorum.

ARTICLE VI - INDUSTRIAL ASSOCIATION

Section 1 - Industrial Advisory Board

An Industrial Advisory Board will be established, with membership limited to selected persons who are senior executives with companies that are supporting the activities of the Center through major grants and contracts. Members will be nominated by the CIM Center Faculty Steering Committee and recommended by the Director to the President for appointment for a three (3) year period.

Section 2 - Industrial Associates

A larger group of industrial personnel will be associated with the Center via involvement with the Center's research and development activities, short courses, conferences, and other activities. Any participation or expression of interest from an off campus person will be cause for inclusion in the Center's list of Industrial Associates.

ARTICLE VII - FISCAL POLICIES

Section 1 - Fiscal Year

The fiscal year shall correspond to that of the Cal Poly Foundation.

Section 2 - Accounts and Audit

The books and accounts of the Center shall be kept by the Cal Poly Foundation in accordance with sound accounting practices, and shall be audited annually in

accordance with Foundation policies.

Section 3 - Funding

Funding for the Center shall come from privately solicited sources, gifts, grants, overhead sharings, industrial membership fees, and fees from Center generated short courses, conferences, and publications.

ARTICLE VII - AMENDMENTS

The Bylaws may be amended by a two thirds majority of the CIM Center members entitled to vote, subject to the approval of the President. Each member shall receive an advanced notification of the proposed amendment.

Memorandum

RECEIVED

JUN 2 1989


CAL POLY
SAN LUIS OBISPO
CA 93407

To : Charles T. Andrews, Chair
Academic Senate

Date : June 1, 1989

File No.:

Copies : Malcolm Wilson

From : 
Warren J. Baker
President

Subject: **ACADEMIC SENATE RESOLUTIONS**

This will acknowledge your memo of May 26 with which you forwarded the four resolutions adopted by the Academic Senate at its May 25, 1989 meeting.

Disposition of the Academic Senate resolutions are as follows:

1. Resolution on Foreign Language Exit Requirement (AS-319-89/IC)

The position of the Academic Senate is appreciated. In addition to the direction which it gives to the Statewide Academic Senators, the perspective of the Academic Senate will be used by me and other University personnel in discussions on this issue as appropriate.

2. Resolution on Academic Calendars (AS-320-89/IC)

The endorsements of the Academic Calendars by the Academic Senate is appreciated. I also understand the concerns with regard to Saturday examinations and encourage the Academic Senate to pursue any alternatives for this as academic calendars for 1992-93 and beyond are developed.

3. Resolution on Accreditation Guidelines (AS-321-89/IC)

The position of the Academic Senate with regard to Accreditation Guidelines is appreciated, and the Vice President for Academic Affairs will utilize the Academic Senate's perspective in responding to the correspondence from the Chancellor's Office (AAPP 89-15).

4. Resolution on Proposal to Establish the CIM Center (AS-322-89)

The resolution with regard to the establishment of the CIM Center will be utilized by the University as this proposal moves forward.