

CAL POLY REPORT

California Polytechnic State University
San Luis Obispo, California 93407

November 6, 1980
Volume 32, Number 11

University police win citizen praise

Members of the University Police have received commendations from community citizens twice in recent weeks, according to Richard C. Brug, (Director, Public Safety).

The first came from the mother of a child living near the campus who said: "I would like to express my very deepest gratitude to you for your help in locating the dog that bit my daughter while she was walking to school. Your prompt response saved her from having to unnecessarily undergo the very painful rabies shots. I appreciate your help more than I can say."

The second expression came also from a family living near the campus: "One of your officers on duty was very nice and helpful. I had an (automobile) accident involving a deer on Hwy. 1. The officer was kind enough to locate my husband . . . on campus, drive him to the accident scene, and then gave myself and our three children a ride . . . All of us certainly appreciate the assistance received from him and the Cal Poly Police Dept."

VETERANS DAY SCHEDULE UNIVERSITY LIBRARY

Although Tuesday (Nov. 11) is an official campus holiday, the University Library will be open regular hours. The entire Library will be open from 8 am to 10 pm and the lobbies, photo-duplication room, circulation desk, limited loan/reserve, room 207A, and the general stacks will be open until 12 midnight. The regular schedule, including extended hours, will also be maintained on Monday (Nov. 10).

BANKERS COMING TO POLY FOR LIVESTOCK SEMINAR

Over 40 bank administrative personnel are expected to be in attendance at the livestock seminar being presented by Cal Poly faculty from Sunday through Friday (Nov. 9-14). The event, designed to acquaint bankers with the workings of various aspects of the livestock industry, includes lectures as well as trips to representative livestock operations in the San Luis Obispo area.

The program begins with a dinner on Sunday (Nov. 9) at the San Luis Bay Inn near Avila Beach. Erick Thor, Bank of America vice president and senior economist, will be the featured speaker. Each day, seminar participants will receive overviews from Cal Poly faculty on a particular aspect of the livestock industry.

On Monday (Nov. 10) the beef industry will be examined. Cal Poly faculty members making presentations include Frank Fox, Mike Hall, Dave Schaffner, and Steven Blank. A tour of

the Sanford White Ranch is also scheduled.

On Tuesday (Nov. 11) the seminar will focus on the dairy industry with Cal Poly's Gene Starkey, Herman Rickard, Les Ferreira, and Gerry Wagner making presentations. Also scheduled are visits to the Cal Poly Dairy and the Jake Bjerre Dairy.

The poultry and turkey industry will be discussed on Wednesday (Nov. 12) with Cal Poly's Robert Voitle, Roland Pautz, and Leo Sankoff making the presentations. A tour of the Rosemary Farms of Santa Maria is also scheduled.

The pork and sheep industries will be studied on Thursday, Nov. 13, with Cal Poly's Andy Thulin and Rob Rutherford making the presentations. The seminar concludes on Friday (Nov. 14) with a visit to Cal Poly's Food Science Building and a discussion of beef carcass evaluation and USDA grading standards by Cal Poly's Bob Vance.

Staff represented on committees

President Warren J. Baker has appointed staff members to a number of campus standing committees. These appointments are for a period of one year, or until replaced. The appointments to the Academic and Administrative Councils were made by the respective Vice Presidents.

Academic Council	Norma Henderson (Academic Affairs)
Administrative Council	Barbara Ciesielski (General Office)
Campus Planning Committee	Gerry Gentilucci (Plant Operations)
Commencement Committee	Peggy Smith (Records)
El Corral Bookstore Committee	Beverly Hensel (Business)
Facilities Use Committee	Boykin Gartrell (Custodial Services)
Foundation Food Services Committee	Dodie Imel (Library)
President's Council	Stella Nuncio (Learning Resources and Curriculum)
Public Safety Advisory Committee	Anne Pickens (Transportation Services)
Registration and Scheduling	Barbara Andre (Housing)
Student Affairs Council	Vicki Stover (Financial Operations)
University Union Board of Governors	David Graham (Health Center)
University Union Board of Governors	Steven Gallardo (Financial Aid)

IRS institute coming to Poly

Accountants, attorneys, and other tax professionals are invited to attend the IRS General Tax Institute for Practitioners on Friday and Saturday (Nov. 21-22) at Cal Poly. Partnerships, tax-free exchanges, capital gains and losses, and current developments will be discussed during the two-day workshop by revenue agents and taxpayer service specialists from the Los Angeles District Office of the Internal Revenue Service.

The program will be presented in the Cal Poly Theatre, under the sponsorship of the Accounting Department and School of Business in cooperation with the Internal Revenue Service. The \$85 fee for the workshop includes lecture sessions, materials, refreshments, luncheons, and parking.

More information about the tax institute can be obtained by telephoning the Accounting Department at Ext. 1384.

Poly students assist professionals

Students and professional architects had a unique opportunity to work together last month on a revitalization project for the Fulton Mall in Fresno. Professional architects from the San Joaquin Valley worked as a Regional Urban Design Assistant Team from the American Institute of Architects (AIA) together with 14 architecture students from Cal Poly.

The team was headed by Fresno architect and past president of the San Joaquin Valley Chapter of AIA, Warren Thompson, along with Bill Patnaude, also of Fresno, and Lawrence Segrue of Visalia. The professionals and students spent three days analyzing the problems of the Fresno

Fulton Mall, arriving at a solution, and then preparing a proposal for change.

Their suggestions for improvements will be presented to the Fresno City Council in early November. The group expects many of the proposed plans to be implemented.

Paul Neel, state vice president of the California Council of AIA and a faculty member at Cal Poly, helped coordinate the event and expressed high commendation of the total effort. Neel noted the fine quality of work produced and expressed a desire to have other architecture organizations follow the example set by the Cal Poly-SJVC/AIA team.

Exhibit will open

Dramatic contrasts in color, form, and pattern will be featured in local artist Dennis Combrink's exhibition debut, "Two Dimensional Diversity," at Cal Poly from Sunday (Nov. 9) through Monday (Dec. 1). The show in the University Union Galerie will open with a reception for the artist at 7 pm on Sunday, Nov. 9. The reception will be free and the public is invited. Complimentary refreshments will be served. Classical music will be performed on piano, and flutist Joseph Rodgers will play.

Combrink was born in Sacramento in 1948. He attended Cal Poly for four years and the University of Copenhagen for a year to complete requirements for his degree in architecture. He graduated in 1974 and decided to pursue art seriously as well as free-lance as an architect. He has lived in San Luis Obispo for 11 years.

Combrink's work is made of pencil, pen and ink, watercolor, and gouache. He enjoys working with various media to explore different colors, forms, and textures. His art is displayed at Beckola and A Mediterranean Cafe in San Luis Obispo, and Jonah's in Baywood Park.

Galerie hours for the show at Cal Poly are Monday through Friday, noon to 9 pm., and Saturday and Sunday, noon to 5 pm. "Two Dimensional Diversity" is presented by the ASI Fine Arts Committee.



UNIVERSITY EQUIPMENT ACCOUNTABILITY

Current inventory listings will soon be distributed to all departments on campus by the Property Office. Departments are reminded that any changes in these listings should be reported to the Property Office as specified in the Campus Administrative Manual, Section 502.2.

Accountability for nonexpendable property and equipment can be changed only by authorized transfer or survey. All retirements other than off-campus transfers of location must be accounted for by a Property Survey Report, Form 152, which is prepared by the Property Office. On-campus transfers are to be made by means of memoranda addressed to the Property Accounting Supervisor. Off-campus transfers are accounted for by a Transfer of Location, Form 158.

When these procedures are followed, considerable time is saved in locating items by both Property Office personnel and the affected department's faculty and staff. Physical verification of accuracy of an inventory is made at least once each fifteen months. For further information, please contact Marilyn York, Property Accounting Supervisor, at Ext. 2570.

Lost and found/surplus sale

There will be a sale of all unclaimed lost and found and surplus property articles on Tuesday (Nov. 18) between 8:30 am and 3 pm in the University Warehouse, Building #70. Tuesday will be used for the receiving of bids. Bids will be compiled on Wednesday (Nov. 19) and lists of highest bidders will be posted in the Warehouse, Adm. Bldg. and University Union Plaza.

All highest bidders will pickup items on Thursday (Nov. 20) only, between 8 am and 3 pm. Friday (Nov. 21) will be used for second and third highest bidders to claim items not claimed by highest bidders. Second highest bidders will claim items between 8 am and 11 am and third highest bidders will claim items between 12:30 pm and 3 pm.

Clothing, books, jewelry, calculators, typewriters, duplicators, electrical and electronic equipment, drafting machines, cameras, musical instruments, and various miscellaneous items will be available. The university reserves the right to reject any and all bids. A 6 percent sales tax will be added to all bid prices.



Cal Poly Report copy intended for the next issue should be submitted to Betty Holland, Adm. 210, Ext. 2576, prior to 12 noon on Monday.

Cal Poly Dateline is compiled by the Public Affairs Office, Adm. 401, Ext. 2246, and is published on Mondays. Typewritten copy intended for the next issue should be submitted to Cathy Burt, Adm. 401, prior to 12 noon on Wednesday.

Publications Editor: Fred Wolf, Ext. 2158, Adm. 210.

STAFF VACANCIES

Vacant support staff positions have been announced by Robert M. Negranti, Staff Personnel Officer. Descriptions of the positions and other vacancies are posted outside the Personnel Office, Adm. 110, Ext. 2236. Contact the Personnel Office to obtain an application. The University is subject to all laws governing Affirmative Action and equal employment opportunity including but not limited to Executive Order 11246 and Title IX of the Education Amendments Act and the Rehabilitation Act of 1973. All interested persons are encouraged to apply.

Clerical Assistant III-B, \$1130-\$1354/month, Financial Aid. Responsibilities include file maintenance, attendance records and reports, maintenance of department forms and supplies; typing reports; stenographic and secretarial support to the Director; preparation and monitoring of Department OE budget; Financial Aid Notarial activity; Student Assistant supervision. Requirements: Three years of clerical experience, type 45 wpm, shorthand 80 wpm, and must have taken the General Clerical Test. A knowledge of office methods, ability to perform difficult clerical tasks and act independently is essential. Closing date: 11/21/80.

Part-time Custodian, \$5.53-\$6.61/hour, Plant Operations. General housekeeping including care of carpets, vacuum and spot clean. Dust and polish furniture. Clean and sanitize bathroom and fixtures, apply appropriate finish to floors, clean mirrors, walls and woodwork. Wash all windows, blinds, and sills. Clean and sanitize kitchen, apply appropriate finish to floor as needed. Clean other areas of kitchen as needed (cabinets, walls, appliances). Perform related work as required and instructed. Hours: 9 a.m. to 1 p.m., Monday, Wednesday and Friday. Closing date: 11/21/80.

Departmental Secretary II-Steno, \$1130-\$1354/month, Biological Sciences Department. Duties include organizing, managing and supervising clerical work load; coordinating appointments; preparing attendance reports; taking dictation; recording minutes of meetings, transcribing dictaphone dictation; responsible for the preparation of confidential matters. Requires familiarity with a wide variety of university, school and department procedures. Requirements: Four years of progressively responsible clerical experience, type 45 wpm, shorthand 80 wpm, and must have taken the General Clerical Test. Closing date: 11/21/80.

FACULTY VACANCIES

Candidates for positions on the faculty of the University are presently being sought, according to Donald L. Shelton (Director of Personnel Relations). Those interested in learning more about the positions are invited to contact the appropriate dean or department head. This University is subject to all laws governing Affirmative Action and equal employment opportunity including but not limited to Executive Order 11246 and Title IX of the Education Amendments Act and the Rehabilitation Act of 1973. All interested persons are encouraged to apply.

Senior Assistant Librarian (Assistant Acquisitions Librarian), \$18,612-\$25,740/year; for twelve months. Responsible for the operation of both the Serials and Order Sections of the Acquisitions/Collection Development Department. Requires ALA accredited Library science degree. A minimum of three years of acquisitions/serials experience is required, and familiarity with OCLC and automated acquisitions systems preferred. A master's degree in a subject field, or its equivalent, is required for promotion and tenure. Apply to David B. Walch, Director, University Library. Position available February 1, 1981. Closing date 12/31/80.

Assistant Professor, \$17,964-\$21,600/year, dependant upon qualifications and experience, Journalism Department, School of Communicative Arts and Humanities. Position begins September 1981. Teach news writing and editing, magazine writing and other courses in the area of research or professional interest. Ph.D.—earned or near completion—and news media experience required. Knowledge of layout and visual aspects of printed page desirable. Closing date: 12/10/80.

Department Head, \$22,620-\$34,476/academic year, depending upon qualifications, Construction Department, School of Architecture and Environmental Design. Full-time position to teach courses in the major with part-time administration. Emphasis on teaching construction practice and theory, mainly in laboratory classes. Master's degree with approximately ten years in responsible construction operations; administrative experience desired. Background in engineering, construction practices, estimating, planning, scheduling, costs, economy and computer applications desirable. No tenure in Department Head position; however, tenure on teaching faculty can be awarded under current University guidelines. Position available September, 1981. Closing date: 2/2/81.

Assistant/Associate Professor (Public Relations/Journalism), \$19,692-\$24,828/year, dependent upon qualifications and experience, Journalism Department, School of Communicative Arts and Humanities. Position begins September 1981. Join department of 270 majors, lead popular PR concentration. Teach public relations principles, writing, media production, advertising principles, other courses depending on personal interests and departmental needs. Able to direct students enrolled in PR agency/news bureau activity. Some knowledge of public opinion research methods helpful. Minimum requirements: Master's degree and professional experience in responsible PR or information position(s). Preference given to Ph.D. or Ph.D. candidates, and those with teaching experience. Closing date: 12/10/80.

Assistant/Associate/Full Professor, \$19,692-\$28,560/year; dependent upon qualifications and experience, Computer Science and Statistics Department, School of Science and Mathematics. Position available for 1981-82 academic year. Duties include teaching undergraduate and graduate courses. Ph.D. in Computer Science preferred. Ph.D. in a closely related field or a Masters Degree with significant industrial and teaching experience in computer science considered. Preference given to candidates with experience in the areas of data base management, compilers, and programming languages. Closing date: 3/9/81.

Assistant Professor (Broadcast Journalism), \$17,964-\$21,600/year, dependent upon qualifications and experience, Journalism Department, School of Communicative Arts and Humanities. Position begins September, 1981. Ph.D.—earned or near completion—and news media experience required. Ability to teach news writing and reporting for broadcast but able to handle basic news writing for print too. Opportunity to teach in area of research interest. Department has on-air, 2000-watt FM station for news laboratory. Closing date: 12/10/80.

Assistant/Associate Professor, \$17,964-\$22,620/year; dependent upon qualifications and experience, Computer Science and Statistics Department, School of Science and Mathematics. Position available for the 1981-82 academic year. Duties include teaching lower and upper division statistics courses, course development, and professional development. Ph.D. required. Applicants with strong background in applied statistics are particularly encouraged to apply. Closing date: 3/9/81.

WHO...WHAT..WHEN...WHERE???

Steven H. Yoneda, *Athletics*, attended the annual meeting of the California chapter of the National Athletic Trainers Association held in San Jose, Aug. 1-3.

Adelaide Harmon-Elliott, Allen Miller, and Peter Ross, all *Mathematics*, attended the Fourth International Congress on Mathematical Education at University of California, Berkeley, Aug. 10-16. Peter Ross was in charge of the Poster exhibits. He presented a short communication on "Students' Difficulties in Solving Calculus Word Problems."

Quintard Taylor, *History*, delivered a paper titled "Slave Family Life on the Fazenda and Plantation: A Comparison of Brazil and the United States, 1750-1850" at a conference on records, family history and Genealogy, held in Salt Lake City on Aug. 12. The paper will be included in the Conference Proceedings, published by Brigham Young University Press in 1981.

Ron Batterson and Rey Yeh, both *Architecture*, attended the California Council of Architectural Education conference in San Diego on August 29.

James Dearing, *Music*, was the tenor soloist with the Paul Hill Chorale for two performances in Washington, D.C., October 11, 1980.

Constance Gray, *Biological Sciences*, attended a symposium on the brain in San Francisco, Oct. 11-12. The program was part of the continuing education in health sciences series of the University of California, San Francisco. Among recent findings presented was evidence that the aging brain suffers far less cell loss than long believed.

Vern Swansen, *Architecture*, attended the Western Regional Meeting of the Association of Collegiate Schools of Architecture in Seattle Oct. 16-19. The major concern of the symposium was the manner of presenting History of Architecture to architectural students. In attendance were 54 instructors representing 24 schools.

James H. Nash, M.D., Health Center, attended the 44th annual meeting of the Pacific Coast College Health Association in Portland, Oregon, Oct. 20-22. Titled, "Update 1980," the conference addressed issues facing university, college, and community college student health services during the eighties.

Pat C. Pendse, *Biological Sciences*, attended the National Science Foundation Chautauqua short course titled "Recent Advances in Genetics and Fetal Development: Biological and Social Implications" at the University of Utah in Salt Lake City on Oct. 23-24.

Stan J. Dundon, *Philosophy*, delivered a paper at the Humanities and Technology conference in Atlanta on Oct. 23-24. As part of the session, technology assessment, Dundon dealt with the new challenges to traditional ethical systems in nuclear technology assessment, and the use of "experts" in formulating these assessments.

Odile Clause and Lynne Landwehr, both *Foreign Languages*, attended a seminar on French Renaissance titled, "Visages de la Renaissance," in Sonoma Valley, October 24-26.

Denna Riedlsperger and Blanca Rosenthal, both *Foreign Languages*, attended a seminar on the Interdisciplinary uses of German, held at the Goethe Institute in San Francisco October 24-26. Dr. Rosenthal presented a paper titled, "German as the Language of Science and Technology."

Cynthia Nazzaro and Moon Ja Minn Suhr, *Physical Education*, attended the California Dance Educators Association Annual State Conference 1980 at Orange Coast College in Costa Mesa, Oct. 24-26. Both Nazzaro and Suhr took master classes.

Walter W. Perlick, head, *Business Administration*, was recently honored with a plaque at the tenth anniversary meeting of the Financial Management Association, held in New Orleans. The award recognized Dr. Perlick's work as the executive director of the FMA National Honor Society, an honorary that has over 100 chapters across the country.

Arthur L. Schwartz Jr., *Business Administration*, recently presented a paper titled, "Resolving Disequilibria on the New York Stock Exchange: An Analysis of Specialists' Indications" at the Financial Management Association Annual Meetings in New Orleans, La.

James L. Webb, *Physical Education*, has had an article titled, "Nutritional Effects of Oral Contraceptive Use: A Review," published in the October, 1980 issue of *The Journal of Reproductive Medicine*.

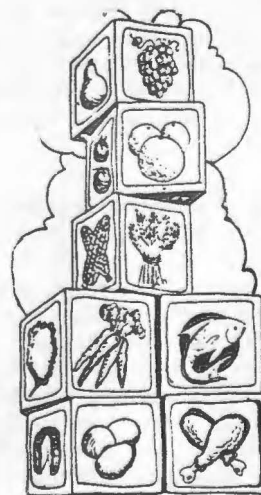
New bibliography on vitamin C

A new bibliography on vitamin C has been published by the University Library. Composed by Phyllis Hansen (Assistant Cataloger) the bibliography contains 166 references including items pertaining to vitamin C as a supposed cure for cancer, the common cold, and the flu, metabolism and vitamin C, as well as the adverse effects of vitamin C.

Titled "Vitamin C: A Selected Bibliography," the new volume is the fifth in a series of bibliographies published by the university library. The series was started about two years ago to make the library collections more accessible. According to Ms. Hansen, a staff member chooses a subject of interest and compiles a bibliography for the series as time is available. All books listed are available in the Cal Poly Library.

The first bibliography on collective bargaining was completed in 1978. Since that time, others on sex role stereotyping in children's literature, the Presidency of Andrew Jackson, and calling a constitutional convention have been completed.

Ms. Hansen became interested in vitamin C after reading an article on its discovery. She spent six months researching books and magazine and newspaper articles that provide general information on the subject. Copies of the new bibliography are available in the Cal Poly Library.



encouraging notes

November 6, 1980

The Washington, D.C. office of the CSUC system has published a special issue of "Dateline: Washington" devoted to a discussion of congressional action and current federal programs concerning the development of university and industry cooperation. Because of the special applicability of this topic to Cal Poly, that six-page report is reproduced in toto in this issue of "Encouraging Notes."

UNIVERSITY/BUSINESS COOPERATION

SPECIAL DATELINE REPORT
October 1980

In the past two or three years universities, industries and policy-related organizations have focused increasing attention on the potential benefits to be derived from university-industry ties in the areas of research and training. The Secretary of Education and several Congressmen, especially Senator Adlai Stevenson of Illinois and Representative George Brown of California have proposed closer ties. In a recent report, Industries and the Universities: Developing Cooperative Research Relationships in the National Interest, the National Commission on Research stated "There are many societal needs with dimensions exceeding the capabilities and scope of either universities or industry. The time has come to explore new ways for the two segments of society to produce synergistic results through programs of cooperative research."¹ The report went on to list the benefits of cooperative activities to universities and to industry. Some of the benefits to the academic community include: 1) the acquisition of additional funds for research through patents and/or industrial contributions, 2) access to technical expertise within industry, 3) curriculum enrichment through greater awareness and use of technology, and 4) enhanced sophistication on the part of faculty regarding use of innovative research techniques and the marketing of project results. The report suggested that any potential threat to academic freedom through such cooperative endeavors could be obviated by advance planning and open public relations.

Both the university and industrial sectors have also acted on their own initiative or through the stimulus provided by associations. For example, a Business-Higher Education Forum was organized by the American Council on Education in 1978. Among other endeavors, the forum has approved a "scholar-in-business" program to provide fellowships to tenured faculty to expose them to business careers. The fellowships will be financed by companies hiring the professors. The forum will also study factors which block research and development cooperation between industry and universities, and has recently set up an energy panel to plan energy research that could be supported by both government and industry.

The U.S. Congress has been responsive to the interest of various public and private groups in developing cooperative university-industry activities which would focus on national problems and manpower needs. It has enacted legislation which, in many cases, has already been implemented in the Executive agencies. This Special Dateline Report will summarize existing federal programs and legislative endeavors which are likely to become viable grant programs in the near future.

¹/National Commission on Research. Industries and the Universities: Developing Cooperative Research Relationships in the National Interest. Free copies available through Cornelius Pings, 337-32 California Institute of Technology, Pasadena, CA 91125.

DEPARTMENT OF COMMERCE

1. Minority Business Development Agency. The purpose of this agency is to help assure that members of minority groups have an equal opportunity to participate in the nation's commerce through the provision of management and technical development services to minority business enterprises via grants, contracts, or cooperative agreements with public and private entities, including educational institutions. Institutions of higher education may share their expertise with minority enterprises in such areas as: 1) purchasing and procurement, 2) financial management, 3) administration, and 4) the penetration and expansion of domestic and foreign markets.

The programs within the MBDA are divided into research and technical assistance. Two major efforts of the research program are the development of a data base on minority businesses through the purchase of existing data and the identification of new areas of service, technology or manufacturing which businesses and industries could enter and the requirements (capital investment, personnel, etc.) to enter those areas. The research program is carried out both in-house and through contracts. Although the program has not supported any unsolicited proposals, staff indicate they will consider such proposals from economists and business researchers which address significant, national problems related to minority businesses. Approximately \$1 million is expected to be available in FY 1981. For further information contact: Rick Stevens, Research Program, Minority Business Development Agency, Department of Commerce, 14th & Constitution Ave, NW, Wash., DC 20230, (202) 377-3344.

In the area of business management and technical assistance, MBDA awards funds to organizations, including colleges and universities, to provide management counseling and technical assistance to economically and socially disadvantaged individuals who need assistance in starting and operating a business. Contracts, cooperative agreements and grants are used for this purpose. Services can include such activities as providing direct general business services to minority individuals and firms seeking information, counseling, financial packaging assistance and assistance in identifying and exploiting business opportunities, new and/or expanded markets.

In addition MBDA provides assistance for business development activities. Recently, a competition was held to grant three awards to provide services on a regional basis for a national acquisition assistance program to increase the number of larger sized minority owned businesses. The grantees will provide independent analyses to minority businesses to improve the quantity and quality of information available to minority buyers before a final price is negotiated. Grants and contracts for technical assistance range from \$10,000 to \$3 million.

For further information contact: Lonnie Murray, Minority Business Development Agency, U.S. Department of Commerce, Room 5090, Main Commerce Bldg, Wash., DC 20230, (202) 377-3237 or Ramon Romero, Department of Commerce, Regional Office, 450 Golden Gate Ave, Room 15043, San Francisco, CA 94102.

2. The Stevenson Technology Innovation Act of 1980 (S.1250) has passed Congress and been signed by the President (P.L. 96-480). The legislation establishes an Office of Industrial Technology in the Department of Commerce which will oversee the establishment of a wide variety of university-affiliated centers. Some centers might focus on an area of technology concerning a number of industries (i.e., the generic technology centers described in the next section of this report); others might evaluate inventions, train students in entrepreneurship and invention, or assist in the start-up of innovative small businesses. A center might be organized around a group of university activities rather than limited to a single department or located in a single building. (Many centers of this nature are already being supported by the National Science Foundation).

As dictated by the legislation, activities of the Centers shall include one or more of the following:

- 1) research supportive of technological and industrial innovation including cooperative industry-university basic and applied research;
- 2) assistance to individuals and small businesses in the generation, evaluation and development of technological ideas supportive of industrial innovation and new business ventures;
- 3) technical assistance and advisory services to industry, particularly small businesses; and
- 4) curriculum development, training, and instruction in invention, entrepreneurship, and industrial innovation.

Grants or Cooperative Agreements at the Department of Commerce will be awarded on a 75/25 matching basis--the Government assuming the major part of the cost. Centers may begin with nonrenewable planning grants for the development of management and evaluation plans and the development of a means for the continuing participation and financial support from the private sector.

The legislation also instructs the National Science Foundation to establish Centers for Industrial Technology but the Foundation is not restricted to the matching grant formula designated for Commerce Department centers. How these centers and the innovation centers already supported by NSF will be coordinated with the Commerce centers was not worked out in the legislation. The innovation centers concentrate on education and training and are less likely to be self-supporting than Generic Technology Centers. No funds are authorized for NSF in this bill. Necessary funds will continue to be included in the NSF appropriations bill.

The Stevenson Technology Innovation Act also establishes an NSF/DOC program to foster the exchange of scientific and technical personnel between universities, industries and Federal laboratories. At NSF this effort may continue to be concentrated in the Science Faculty Professional Development Program, but it is largely left to the two agencies to determine how such exchanges will be supported.

3. In order to bypass the long legislative process and act in accordance with an Administration plan, the Department of Commerce has proceeded to establish a small Cooperative Generic Technology Program which will award three grants in FY'81 to consortia of universities, industries and private laboratories which will focus research and resources on industrywide problems in the areas of powder metal processing, welding and joining, and tribology (friction and wear). Proposals are judged on the likelihood that a proposed center will become self sufficient (through industry and other nongovernmental funding) and the degree to which the center would enhance industry structure and competition as shown in its activity plan. This pilot program was announced in the August 14 and September 4 Federal Register and had an October 4, 1980 deadline. Although the Administration requested \$5.2 million to get the new program started, Congress is likely to appropriate less than that. However, it is also assumed the program will be greatly expanded under S.1250, which authorizes over \$200 million through 1985. For additional information contact: Frederick Haynes, Department of Commerce, 14th and Constitution Ave, NW, Rm 3520, Wash., DC 20230, (202) 377-5905.

4. Economic Development Administration - University Centers: EDA gives support to universities and consortia of universities to provide outreach services, such as management and technical assistance, to create job opportunities in economically depressed areas. There are currently in operation 32 centers in 28 states, one of which is at California State University at Chico, and serves a 12 county region. Substantial cost-sharing is required for the centers. EDA provides heavy funding in the early years of a center, then gradually decreases its support to \$50,000 per year if the center is successful. Staff has indicated there would be interest in funding another project in California, in the Bay Area, for example, if requirements for matching and continuation of the center could be assured.

Approximately \$3 million is available each year for new and existing centers. EDA usually adds two new centers each year. For further information contact: Glenn Fatsinger, University Center Program, Economic Development Administration, Department of Commerce, Wash., DC 20230, (202) 377-2116.

SMALL BUSINESS ADMINISTRATION

1. Small Business Research Program. The Small Business Research Program supports research by individual businesses and colleges and universities working with independent small businesses which deals with policy-oriented issues or which seeks to develop alternative policy approaches to solving small business problems. Areas of study can include effects of government programs, policies and regulations on small businesses; contributions of small businesses to the economic and social welfare of the U.S.; or the development of theories or methodologies useful in studying small business problems. Grants range from \$35,000 to \$60,000. Approximately \$1 million is available each year. FY'81 deadlines have not yet been established; in FY'80 deadlines were in January and March.

For further information contact Alice Cullen, Research Program Coordinator, Small Business Administration, Office of Economic Research, 1441 L St, NW, Wash., DC 20416, (202) 634-4864.

2. Small Business Development Centers. The Small Business Administration supports small business centers to provide technical assistance and management services to small businesses in the region. Centers help local businesses in solving problems concerned with operations, administration, accounting or other matters and provide an environment for students to acquire experience in small business

management. The first round of awards included nine university-based centers. The California State University and Colleges was fortunate in receiving awards for two centers--California State University, Chico and California State Polytechnic University, Pomona.

For further information contact Bruce Whiting, Office of Small Business Development Centers, Small Business Administration, 1441 L St, NW, Wash., DC 20416, (202) 653-6634.

NATIONAL SCIENCE FOUNDATION

1. Industry/University Cooperative Research: To encourage industry/university cooperative ventures, NSF supports research planned and carried out jointly by academic and industrial researchers. The research should focus on fundamental scientific questions of a basic or applied nature rather than on technological development. NSF looks for projects which show promise of making a long-term contribution toward product or process innovation or which provide knowledge as a foundation for new or improved technologies. A central pool of funding is allocated for this program and available to all the research directorates within the Foundation. The joint proposals are sent out for peer review and evaluated like any other NSF proposal. Under one NSF industry/university grant, a research team of chemical engineers from the University of Pennsylvania and the General Electric Corporate Research and Development Center developed a new type of chemical reactor which is expected to use less energy, requires a smaller capital investment than conventional reactors, and separates and concentrates the products. Proposals are accepted throughout the year, but should be submitted at least nine months prior to the proposed starting date.

For further information contact Frederick Betz, Industry/University Cooperative Research, National Science Foundation, 1800 G St, NW, Wash., DC 20550, (202) 357-7784.

2. Science Faculty Professional Development Program: The Science Faculty Professional Development Program funds full-time faculty with at least five years of teaching experience at the undergraduate level, to pursue 3 to 12 months of research or study for the purpose of enhancing their ability as a classroom teacher. While affiliations can be made with either academic institutions or with industrial laboratories, NSF encourages affiliation with nonacademic facilities. For example, a physics professor spent a year at GTE Labs in Massachusetts working on communications satellites. Faculty members must make arrangements with the host organization before applying and indicate in the proposal the plan of work to be carried out. Tenure of the award is flexible so that faculty may carry out their projects during several consecutive summers, a semester, or a full academic year.

NSF makes approximately 80 awards each year with a maximum stipend of \$2,250 per month plus a travel allowance. The host institution receives \$150 per month to defray project costs. The next deadline is January 5, 1981. For further information contact Edward Karlander, Science Faculty Professional Development Program Directorate for Science Education, Wash., DC 20550, (202) 282-7795

3. University/Industry Cooperative Research Centers. NSF supports cooperative research centers that involve one university and six to twelve private sector companies which conduct research in a particular scientific area, such as polymer processing or computer graphics. The Center is usually interdisciplinary and often includes substantial involvement from business and engineering schools. The R&D program covers basic and applied research in various scientific disciplines and generic technologies with prospects leading to new products and services for the participating companies. Typically a center will receive funding of up to \$100,000 for an 18-month planning and assessment phase to evaluate the feasibility for a long term self-sufficient cooperative program. The second phase of funding is the implementation phase which usually does not exceed \$1 million over a three to five year period, with the NSF share decreasing each year.

At the present time there are six centers in operation and five in the planning stage. One center which is now completely self-sufficient is the Polymer Processing Center located at the Massachusetts Institute of Technology. In addition to the benefits from research centers also provide undergraduate and graduate students an opportunity to work with industry. For further information contact Robert Colton, University/Industry Cooperative Research Projects, Office of Planning and Resources Management, National Science Foundation, Wash., DC 20550, (202) 357-7527.

Many other programs at the National Science Foundation can be also used for activities related to industry/university cooperation. For example, NSF has made awards to industrial laboratories to conduct Undergraduate Research Participation Projects, or a curriculum revision based on industry-related problems in mathematics might be fundable through LOCI. The Research Initiation Grants in Engineering and Earthquake Hazards Mitigation has also established a category for university/industry cooperative research. Development in Science Education can support continuing education for industrial personnel.

DEPARTMENT OF EDUCATION

1. Business and International Education: Although Congress has not yet passed an appropriations bill, it has authorized \$7.5 million for each year between FY'81 and '85 for a "Business and International Education Program" as Title VI Part B of the recently-passed legislation to amend and extend the Higher Education Act. The Secretary of Education is authorized to make 50 percent matching grants or contracts to institutions of higher education to provide internationally-related education and training to business personnel. Specific activities which may be supported under the new program include:

- (1) innovation and improvement in international education curricula to serve the needs of the business community, including development of new programs for nontraditional, mid-career, or part-time students;
- (2) development of programs to inform the public of increasing international economic interdependence and the role of American business within the international economic system;
- (3) internationalization of curricula at the junior and community college level, and at undergraduate and graduate schools of business;
- (4) development of area studies programs and interdisciplinary international programs;
- (5) establishment of export education programs through cooperative arrangements with regional and world trade centers and councils, and with bilateral and multilateral trade associations;
- (6) research for and development of specialized teaching materials, including language materials, and facilities appropriate to business-oriented students;
- (7) establishment of student and faculty fellowships and internships for training and education in international business activities;
- (8) development of opportunities for junior business and other professional school faculty to acquire or strengthen international skills and perspectives; and
- (9) development of research programs on issues of common interest to institutions of higher education and private sector organizations and associations engaged in or promoting international economic activity.

To be eligible an institution of higher education must submit with its application, an agreement between the institution and business enterprise, trade organization or association engaged in international economic activity (or consortium thereof) to carry out the activities listed above. The institution must also provide assurance that the proposed activities will supplement, not supplant, activities conducted by institutions of higher education in international areas. Since this new provision was not included in the Labor, Health and Human Services, and Education appropriations bill for FY 1981, it may not be funded until next year unless included in a supplemental appropriations bill.

2. Cooperative Education: The Cooperative Education program supports projects which integrate formal classroom study with work experience specifically related to academic training. Projects can consist of alternating or parallel periods of work and study. Program staff encourage projects which involve large numbers of students and which include several academic departments (particularly in areas other than engineering and business.) Funding to cover faculty/staff release time to develop and implement cooperative arrangements with the employers, consultants' time and other costs related to the project is available for up to five years with federal support decreasing substantially each year. The maximum grant per year is \$175,000 for a single institution and \$125,000 per institution for a consortium arrangement.

For further information contact Morris Brown, Cooperative Education, Department of Education, 7th & D Sts, SW, Wash., DC, 20202, (202) 245-2146.

ENVIRONMENTAL PROTECTION AGENCY

The purpose of the Minority Institutions Research Support Program is to enable institutions of higher education with at least a 25 percent minority student enrollment (includes Black, Hispanic, American

Indians and other ethnic minorities) to obtain research support in environmentally-related areas, such as solid waste management, ecology, etc. Such research can include industrial research. Suggested research topics which are solicited from EPA research laboratories are contained in the EPA program guide. Topics include such areas as comparison of energy use and its related costs of pollution control technology, meteorological air pollution research and research in solid waste management. The size of grants varies widely, but cannot exceed \$60,000 per year for a three year period. Although proposals may be submitted at any time, those sent early in the fiscal year (beginning October 1) are likely to be given more consideration. The person to contact for further information is: Clyde Bishop, Minority Institutions Research Support Program (RD-680), U.S. Environmental Protection Agency, 401 M St, SW, Wash., DC 20460, (202) 426-4527.

DEPARTMENT OF TRANSPORTATION

Congress has passed a FY 1981 appropriations bill for the Department of Transportation which includes \$12 million for the Research and Special Programs Administration to be used for the Cooperative Automotive Research Program. Under this legislation, DOT can only obligate \$6 million within the first six months, while Congress acts to pass appropriate authorizing legislation. The program is now located in the newly established Office of Basic Automotive Research in DOT.

The Cooperative Automotive Research Program (CARP) will be directed toward basic research related to automotive technology and will be funded jointly by the federal government and industry with universities, industry and government labs carrying out this research. DOT will be the lead agency in FY 1981, with NSF also participating. Additional federal participants, including NASA, Commerce, DOE and EPA, are expected for later years. Funds will be awarded through grants and contracts, with the major portion of funds going to colleges and universities. Additionally, the program will encourage the exchange of personnel between industry and universities. The major automobile manufacturers have signed an agreement in support of this program.

The research areas covered by the program include combustion, thermal and fluid sciences; electrochemistry; materials science and processing; environmental science; behavioral science; and acoustics and vibration. A detailed framework for research needs developed by a team of scientists and engineers from industry, government and universities appeared in the Congressional Record on September 18, 1980, p. S12813. DOT plans to hold a meeting in early December to publicize the program.

For further information contact Brooks Bartholow, Department of Transportation, CARP, 400 Seventh St, SW, Wash., DC 20590, (202) 426-4433.

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards awards approximately \$2 million annually to support research in a wide range of scientific areas which relate to NBS's work in fields such as building technology, communications, electronics, fire research and consumer product technology. Designated areas of interest are listed in NBS's program guide. While not specifically listed as an agency focus, industry-university cooperative research is funded through this research program. Recently NBS funded a project involving research on the rubber plant by a university and a rubber manufacturer. For further information about research opportunities contact Gordon Cauley, Staff Assistant and NBS Grants Administrator, National Bureau of Standards, Department of Commerce, Wash., DC 20234, (301) 921-3521.

PROPOSED LEGISLATION

Representative George Brown has proposed the establishment of an independent National Technology Foundation to administer engineering, applied science programs, and campus based technology centers now supported by the Department of Commerce and the National Science Foundation. The bill (H.R.6910) would authorize \$2 billion over the next three years for the foundation which would support basic and applied research at the centers for industrial technology and provide grants for technical training, scholarships and curriculum development. The proposal has met with opposition from the two agencies involved and has received mixed responses from many persons in the industrial and university sectors. Those in favor feel it would broaden support for the centers and personnel exchanges; those in opposition claim the foundation would create an isolated bureaucratic entity which would remove programs that are now effectively managed at NSF and the Department of Commerce. Thus far, Rep. Brown has only held hearings. He intends to reintroduce the legislation during the next session of Congress.

NOTE: It is rumored that a cooperative industry/university research program in advanced steel technologies is likely to be included in the President's FY'82 budget, but details are not yet available.