

# cal poly report



CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
SAN LUIS OBISPO, CALIFORNIA 93407

Volume 28, No. 12

October 14, 1976

## CAL POLY ALUMNI ASSOCIATION

# DISTINGUISHED ALUMS NAMED

Seven former Cal Poly students have been named as distinguished alumni for 1976 and will be honored during Homecoming festivities on Friday and Saturday (Nov. 5 and 6). Dr. Edwin L. Hobson, Washington, DC; George Ikenoyama, San Luis Obispo; Lamar Smith, Santa Maria; Jack Pelzer, North Hollywood; Larry Mayhew, Beaverton, Ore.; Linda Gray McArthur, Morro Bay; and Dr. Glenn R. Stewart, Pomona; have been named by the Cal Poly Alumni Association's Distinguished Alumni Committee as outstanding alumni.

The Distinguished Alumni Committee, chaired by Donald J. Van Harreveld of San Luis Obispo, selected the alumni on the basis of the success of their application of their discipline in their working life, contributions to community and professional organizations, and contributions to the university as students and alumni. They will be honored by President Robert E. Kennedy, at a banquet to be held on Friday (Nov. 5) at the Shore Cliff Lodge located in Pismo Beach.

The alumni will also be special guests at the Diamond Brunch to be held at 11 am on Saturday (Nov. 6) in Vista Grande Cafeteria on campus. Then they will attend the Homecoming football game between Cal Poly and United States International University (formerly Cal Western) at 1:30 pm in Mustang Stadium. That night, there will be a concert in the Main Gym featuring a yet-to-be announced rock group. Sunday morning, the Old-Timers Breakfast will be held in Vista Grande Cafeteria at 8:30 am. The distinguished alumni banquet is sponsored by the Cal Poly Alumni Association, which represents over 90,000 alumni world-wide. The association has been the traditional tie between former Cal Poly students and the university for 70 years.



### HAZEL JONES HONORED IN COLORADO



Hazel J. Jones will be honored as outstanding alumna for 1976 during Homecoming festivities at Western State College, Gunnison, Colorado, this Saturday and Sunday (Oct. 16-17). Currently vice president for academic affairs at Cal Poly, Dr. Jones will join a select list of seven graduates of Western State that have been so honored since the outstanding graduates program was initiated in 1971. Dr. Jones began her tenure as vice president at Cal Poly in 1974 after having been a dean at California State University, Fullerton, for four years.

Before that, she was an associate dean for three years and a member of the faculty for seven years at Cal State Fullerton. She also taught at California State University, Los Angeles. Dr. Jones completed her bachelor's degree at Western State and, after earning a master's degree at University of California, Berkeley, completed a second master's degree and doctor's degree at University of Southern California. Dr. Jones, who expects to take part in the festivities in Gunnison this weekend, will be recognized during halftime of the Homecoming football game on Saturday afternoon, at a reception in her honor following the game, and at an alumni breakfast on Sunday morning.

### CSUC WILL SPONSOR CONFERENCE/EXPOSITION

The California State University and Colleges will be among sponsors of the first annual Science and Technology Exposition and Conference, Oct. 19-26, at the Sacramento Community/Convention Center. Expected to attract many thousands of visitors and participants, the event will accent "200 Years of Technical Progress" and provide a forum for consideration of technological issues.

"The 19 CSUC campuses fulfill an important mission through curricular programs that relate directly to the scientific environment of California," Chancellor Glenn S. Dumke said. "We are pleased to join in sponsoring this event which will exhibit scientific advances and offer a setting in which technology can be evaluated by key representatives of business and industry, governmental policy makers, educators and the technical community."

The exposition's largest exhibits will be an 8,000-square-foot earthquake display, the biggest of its kind ever assembled, and a 4,000-square-foot NASA-JPL, Viking I and II Mars project with scale model of the Viking Lander set in a realistic Mars landscape. Exhibited by the Oakland Museum, the earthquake display will chronicle recent major tremblors in China, Guatemala, the Southern California quake of 1972 and the Alaska quake of 1964.

Featuring an eight-foot Mars globe, photographs, daily data and weather reports from the red planet, the Viking exhibit will be brought to the Exposition through cooperative efforts of NASA, the Ames Research Center, Langley Research Center and the Jet Propulsion Laboratory. Though the Exposition will continue through Oct. 26 the concurrent Policy Conference will conclude Oct. 22 after extensive discussions by authorities in various fields.

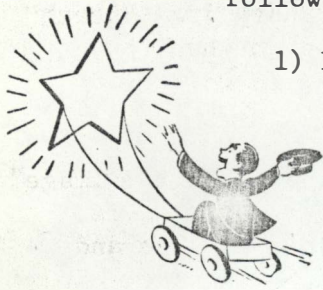
### SPECIAL ON ROSES

Forever Yours," long stemmed red roses are now on special sale at the Poly Plant Shop (OH Unit). At \$6.00 a dozen (or 50¢ each), the roses will be cut fresh daily until the crop runs out.



### APPLICATIONS SOUGHT FOR FOREIGN DIRECTORSHIPS

Applications are invited for 1978-79 openings as Resident Directors of the following overseas study centers of the CSUC International Programs:



1) Full-time appointments:

France (10 months) University of Provence, Aix-en-Provence;  
Germany (12 months) University of Heidelberg and University of Tübingen;  
Italy (10 months) University of Florence;  
Spain (10 months) University of Granada and University of Madrid;  
Sweden (12 months) University of Uppsala and architecture program in Copenhagen.

2) Part-time (1/5) appointments:

Israel (10 months) Hebrew University of Jerusalem;  
Japan (10 months) Waseda University, Tokyo; and  
United Kingdom (10 months) numerous universities, including Dundee, Leicester, Liverpool, Oxford, Sheffield.

Faculty interested in applying should see the School Dean or Division Head. Deadline for applications is Jan. 15, 1977.

### PIPPIN PENS NEW BOOK

A university professor's book on the psychology of teaching and learning from the humanistic, perceptual, and social frames of reference has been published by an Iowa publishing company. Titled "Self: In Learning and Teaching," the book is by Louis D. Pippin, (Education) who joined Cal Poly's faculty in 1970. Dr. Pippin believes that the book is directly related to the development of the competencies and attitudes necessary to good teaching.

Divided into sections on "Self and Exploration of Self," "Psychology of Learning and Strategy," and "Teaching Skills," the 188-page binder-bound book also includes workbook sections that give readers an opportunity to express their beliefs about teaching. Dr. Pippin received the distinguished teacher's award at Cal Poly in 1974. "Self: In Learning and Teaching," is being published by Kendall/Hunt of Dubuque, Iowa. It is available at \$8.95 in the bookstores and from the publisher.

### PUPPETS/STUDENTS WILL PERFORM

A program of free puppet shows for children will be presented on Wednesday (Oct. 20) and Friday (Oct. 22) at Cal Poly. The shows will be presented by members of a children's drama class as part of their classroom assignments. Performances will be from 10 am to 12 noon on Oct. 20 and from 11 am to 12 noon on Oct. 22 in Davidson Music Center 212.

Those interested in bringing groups to the campus performances are invited to telephone Michael R. Malkin (Speech Communication) for reservations. He can be reached at Ext. 2486 between 9 am and 10 am on Mondays and Wednesdays and 10 am and 11 am on Fridays. Dr. Malkin, a specialist in puppetry and teacher of the class, explained the extremely limited seating will make it impossible to accommodate individuals or groups who do not have reservations for the performances.

#### PRESIDENTIAL CAMPAIGNS SUBJECT OF PROGRAM

A program on presidential campaigns in American history will be the next event in the Arts and Humanities 1976-77 series on Thursday, (Oct. 21). Harry W. Sharp Jr. (Speech Communication) and John C. Syer (Political Science) will share the podium when they speak on "Presidential Campaigns: The Image and the Debates" at 11 am in University Union 220. Admission will be free and the public is invited to attend.

Dr. Sharp, coach of the university debate squad, will discuss "the debate and the image" in presidential campaigns. He formerly taught at University of California at Davis, where he developed a course on campaigning, and has written a number of magazine and journal articles on political campaigns.

Dr. Syer will speak on image formation and the voter. He formerly taught at Sangamon State University in Illinois and is a specialist in national government and public affairs. The Oct. 21 program at Cal Poly will be the second of the Fall Quarter for the Arts and Humanities 1976-77 series, which is sponsored by the School of Communicative Arts and Humanities and the Communicative Arts and Humanities Student Council.

#### FACULTY AND STAFF INVITED TO DONATE WORKS

Chancellor Glenn S. Dumke has established, at the new California State University and Colleges Headquarters, a library of faculty and staff works and invites California State University and Colleges faculty and staff to contribute autographed copies of one or more books or other publications they have authored while a member of one of the system's colleges or universities. The contributed works will be included in the "Fifteenth Anniversary Founding Collection," a special section of the Headquarters Library. Please send copies for donation to Hazel J. Jones (Vice President for Academic Affairs).

#### ARTICULATION CONFERENCE FOR COUNSELORS

Community College teachers and counselors involved with students in engineering, engineering technology, and industrial technology will attend an articulation conference at Cal Poly on Friday (Oct. 15). The purpose of the conference, according to Laurence F. Talbott (Associate Dean, Engineering and Technology), conference coordinator, is to discuss problems that junior college students may have when entering the School of Engineering and Technology at Cal Poly. Some of the topics to be discussed during the conference will be job placement for engineers and technologists, women in engineering, and the university's admission program.

The program will open at 9:30 am with welcoming remarks by Hazel J. Jones (Vice President for Academic Affairs) and Robert G. Valpey (Dean, Engineering and Technology). Dr. Talbott said registration and payment of the \$7 conference fee will take place between 9 am and 9:30 am in University Union 220 where all of the conference sessions will be held.

---

Typewritten copy intended for the next issue of Cal Poly Report must be received prior to 12 noon on Tuesday (Oct. 19) in the Public Affairs Office, Adm. 125. Copy intended for Cal Poly Dateline is due in the Public Affairs Office by 12 noon on Wednesday (Oct. 20).



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

James R. Conway (Speech Communication) received a letter from the University of Southern California, Los Angeles, that he completed all academic requirements for the degree of Doctor of Philosophy, Speech Communication. The diploma will be dated Feb.1, 1977.

Joseph N. Weatherby, Jr. (Political Science) has been appointed chairman of the Academic Program Committee in Humanities-Liberal Arts for the Consortium of the California State University and Colleges. This committee monitors degree programs at California State College, Dominguez Hills, and California State College, Sonoma.

John L. Merriam (Agricultural Engineering) presented a paper at the Agricultural Water Conservation Conference sponsored by the California Department of Water Resources. The presentation was part of a panel on irrigation methods. The paper covered surface methods, but includes a summary of trickle and sprinkle irrigation.

Jack D. Wilson and Joseph L. Glass (both Agricultural Engineering) also attended the Agricultural Water Conservation Conference held at U.C. Davis on June 23 and 24.

Timothy M. Barnes, Robert E. Burton, James L. Fitts, Donald W. Hensel, Gregory F. Herken, Daniel E. Krieger, Edward L. Mayo, and Joseph B. Romney (all History) attended the Pacific Coast Branch of the American Historical Association meeting at the University of California, San Diego, last Aug.

Irving P. Babow (Social Sciences) on Sep. 18 gave consultation on methodology to the Oral History Project on "Eastern European Jews in San Francisco from 1880 to 1940." The project is being conducted by the American Jewish Congress and the Magnes Museum and Library in Berkeley in cooperation with the Regional Oral History Office, Bancroft Library, University of California, Berkeley.

David R. Henry (Speech Communication) received a letter from Indiana University, Bloomington, Indiana, that he completed all academic requirements for the degree of Doctor of Philosophy, Speech Communication. This degree was officially conferred on Aug. 31, 1976.

(continued on page 6)

CANDIDATES FOR FACULTY POSITION BEING SOUGHT

Candidates for a position on the faculty of the university are presently being sought, according to Donald L. Shelton (Director, Personnel Relations). Those interested in learning more about the position are invited to contact the appropriate dean or department head. This university is subject to the requirements of Executive Order 11246 and is an Affirmative Action and Title IX Employer. All interested persons are encouraged to apply. Following is a description of the available position:

Assistant or Associate Professor, (\$13,572-\$18,756/year, dependent upon qualifications), History Department, School of Communicative Arts & Humanities. Duties: teaching lower division courses in 20th Century America and recent foreign affairs and courses in either a) Afro-American and African history, or b) Chicano history. Tenure-track position. Prefer candidates with completed doctorate in history and some teaching experience. Closing date: 12/15/76.

SUPPORT STAFF VACANCIES LISTED

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. This university is subject to the requirements of Executive Order 11246 and is an Affirmative Action and Title IX Employer. All interested persons are encouraged to apply. The positions are:

Clerical Assistant II-A, (\$673-\$804/month), Admissions & Records, Student Affairs Division. Two positions. Duties: working with student records in Records Office, assisting with registration, preparation of grades, processing applications in the Admissions Office, and various clerical functions. Requirements: high school graduate, 1 year of clerical experience, typing 45 wpm, and must have taken the General Clerical Test. Closing date: 10/21/76.

Clerical Assistant III-A, (\$804-\$962/month), Admissions & Records, Student Affairs Division. Duties: processing, updating and correcting student records in Records Office. Requirements: high school graduate, 3 years of clerical experience, typing 45 wpm, and must have taken the General Clerical Test. Closing date: 10/21/76.

Clerical Assistant II-B, (\$719-\$859/month), Activities Planning Center, Student Affairs Division. Duties: taking dictation; filing; ordering supplies; distributing mail, typing "Pony", and daily room reservations; supervising bulletin boards; and handling student assistant payroll. Requirements: high school graduate, 1 year of clerical experience, typing 45 wpm, shorthand 90 wpm, and must have taken the General Clerical Test. Closing date: 10/21/76.

Clerical Assistant II-A or II-B, (\$3.88-\$4.96/hour), Associate Dean's Office, School of Engineering & Technology. Part-time position (26½ hours/week). Duties: various clerical functions. Requirements: high school graduate, 1 year of clerical experience, typing 45 wpm, and must have taken the General Clerical Test. Clerical Assistant II-B applicants must have shorthand at 90 wpm. Hours: MTThF - 9 a.m. to 3 p.m., W - 9 a.m. to 4:30 p.m. Closing date: 10/21/76.

Departmental Secretary 1-B, (\$752-\$899/month), Economics, School of Business. Duties: reception; filing; taking dictation; typing exams, correspondence and other instructional materials; and maintaining student assistant payroll, monthly attendance report, and departmental budget accounts. Requirements: high school graduate, 3 years of clerical experience, typing 45 wpm, shorthand 90 wpm, and must have taken General Clerical Test. Closing date: 10/21/76.

Radiation Protection Specialist, (\$579.50-\$697/month), Physics, School of Science & Mathematics. Half-time, temporary-help (position will terminate 6/30/77). Duties: perform tests of radioactive sources, calibrate detection instruments, provide advice on safe practices in radiation, and conduct safety surveys. Requirements: college graduate, 2 years of experience as x-ray technician, including 1 year of supervisory experience. Closing date: 10/28/76.

WHO...WHAT...WHEN...WHERE??? (continued from page 5)

William L. Bruckart (Industrial Technology) attended the Western Material Handling and Packaging Show held at the Anaheim Convention Center, Sep. 14, to 16. The show was sponsored by The Society of Packaging and Handling Engineers (SPHE) and featured the latest in equipment, machinery, materials systems, and services from major companies throughout the United States.



October 14, 1976

ALTERNATE ENERGY RESOURCES MEETING: Twenty faculty members met Saturday, October 9, to discuss the feasibility of establishing an institute for coordinating university activities relating to alternate energy resources. Discussion concerning formally proposing an institute led to no firm conclusion, but the group unanimously passed a motion to establish a committee to begin coordinating activities in the energy area.

Fifteen of those present indicated willingness to work on the committee. Others who wish to join should call the Research Office, 2982.

\* \* \*

REMINDER: The last of three proposal writing seminars offered by the Coordinator, Research Development will be held in the Music, Speech & Drama Building, Room 125, on October 21, 11:00 to 1:00 p.m. This session will be open to all who are interested in learning more about the proposal writing process.

The seminar will cover such topics as what the basic sources of funding are, what some of the characteristics of a successful proposal are, how one writes and budgets a proposal, and how a proposal is reviewed internally before it is submitted to a sponsor.

\* \* \*

PROPOSAL WRITING GUIDES FOR NEW FACULTY. The Research Development Office has two guides concerning sponsored projects available for interested faculty:

1. "Proposal Writing: A Guide for the Perplexed" - details the internal administrative requirements for proposal review and the CAM regulations governing research and related activity.
2. "Developing Proposals for Sponsored Activities" - describes how to write the narrative of a research proposal, the special requirements of a curriculum development proposal, how to approach private foundations for funds, and how to get organized for a short deadline.

These booklets orient faculty members who are interested in submitting proposals through the Research Office. They will be available at the proposal writing seminar, or can be had by calling the Research Development Office (546-2982).

\* \* \*

PROPOSAL DRAFTS FOR DISCUSSION IN WASHINGTON: The Coordinator, Research Development, will be in Washington D.C. the week of November 15. If you have a prospectus or proposal for a sponsored activity you would like him to discuss with an agency program officer, please send it in writing to the Research Office by Friday, November 5.

\* \* \*

NATIONAL ENDOWMENT FOR THE HUMANITIES. The NEH is an independent federal grant-making agency created by Congress in 1965 to support projects of research, education, and public activity in the humanities. Application deadlines for 1977 programs of the NEH as well as descriptions of the programs themselves are offered in a recent program announcement available for review in Administration 317.

\* \* \*

NIA - SPECIAL RESEARCH AWARDS. The Special Research Awards program of the National Institute on Aging (NIA) is designed to encourage newly trained investigators to become active in aging research during the formative stages of their careers. This is particularly important because of the small number of investigators currently committed to research in aging. To accomplish this goal, the National Institute on Aging will make available funds from its research grants program to provide support for meritorious research projects in the behavioral, social, and biomedical sciences related to aging.

Special research awards will be made specifically for newly trained investigators who do not hold and have not held other Public Health Service support for the conduct of research. Candidates must have received a doctoral degree or its equivalent in research training no more than six years prior to the date a completed application is submitted to the NIH.

Further information regarding this program may be obtained by contacting: Dr. Lester Smith, C-703, Landow Building, National Institute on Aging, National Institutes of Health, Bethesda, Maryland, 20014. (301-496-1033)

\* \* \*

CONFLICT IN INTERNATIONAL RELATIONS FELLOWSHIPS. The Rockefeller Foundation has announced the continuation of its fellowship program in the field of international relations for 1976-77. The program has three principal objectives: (1) To identify and assess the critical and emerging issues which are likely to shape the international community in the decade ahead. (2) To encourage fresh thinking about sources of conflict in an interdependent world and the capabilities of contemporary societies for coping and emerging conflict. (3) To help develop the additional expertise in the above areas needed to improve policymaking and to better inform the public through the dissemination of materials of use to opinion leaders and in teaching programs. Those wishing to apply for a fellowship under this program should write to: Conflict in International Relations Fellowships, The Rockefeller Foundation, 1133 Avenue of the Americas, New York, New York, 10026. (Telephone: 212-869-8500)

*Deadline: December 1, 1976, and May 1, 1977.*

\* \* \*

NSF - COMMENTS ON PROPOSED SCIENCE EDUCATION DEVELOPMENT AND RESEARCH PROGRAMS.

Available for review in the Research Office (Administration 317) is a booklet describing programs of the Foundation's Division of Science Education Development and Research for Fiscal Year 1977. Two separate items are enclosed: (1) draft guidelines for a program that provides support for the development and testing of innovative instructional materials and delivery modes; and (2) a draft solicitation for proposals for science education research and study activities. The first consolidates the activities of three prior programs: Pre-college Development, Evaluation and Testing; Alternatives in Higher Education; and Technological Innovation in Education. The second describes a new program that the National Science Foundation plans to initiate during the fiscal year 1977.

\* \* \*

USOE - TEACHER CORPS GRANTS. Applications to obtain project grants under the Office of Education's Teacher Corps Program must be received by *December 15, 1976*. The purpose of the program is to develop and train teachers, teacher aids, and parents in an effort to improve the educational opportunities of children from low income families. Information and application forms may be obtained from the Teacher Corps, Donohoe Building, 400 - 6th Street, SW, Washington, DC, 20202.

\* \* \*



USOE - BUREAU OF EDUCATION FOR THE HANDICAPPED. Guidelines and application materials are now available for the \_\_\_\_\_ program. Support will be given for a broad range of student initiated and directed research and research-related projects which focus on the education of handicapped children.

Two award cycles are planned for FY 1977. Proposals received for the first cycle will not be held over for the second cycle, but may be resubmitted. The deadline for the first cycle is *December 1, 1976*. The deadline for the second cycle is *March 15, 1977*.

Further information and application forms may be obtained from the Research Projects Branch, Bureau of Education for the Handicapped, Office of Education, 400 Maryland Avenue, SW, Washington, DC, 20202. (202) 245-2275.

\* \* \*

USOE - VOCATIONAL EDUCATION. The Division of Research and Demonstration, Bureau of Occupational and Adult Education plans to make awards for two new Voc Ed Curriculum Coordination Centers in FY 1977. One Center will provide leadership to curriculum coordination in the Southeast United States. The other award will provide leadership for the Western area.

Applications must be received by the USOE on or before *November 15, 1976*. For further information and application materials contact: Dr. Howard Hjelm, Division of Research and Demonstration, Bureau of Occupational and Adult Education, OE, Room 5042, ROB-3, Washington, DC, 20202. (202) 245-9634.

\* \* \*

NSF - SHORT COURSES FOR COLLEGE TEACHERS. The 1976-77 program of NSF Chautauqua-Type \_\_\_\_\_ program is conducted by the American Association for the Advancement of Science (AAAS) with support from NSF. It involves the cooperation of the colleges and universities in which a Field Center is located, the college-teacher participants and their home institutions, and the Course Directors. Further information is available in Administration 317 or from the Office of Science Education, Department S, AAAS, 1776 Massachusetts Avenue, NW, Washington, DC, 20036. (202) 467-4463.

\* \* \*

NSF - BIOLOGY PROGRAM ANNOUNCED. A program in Population Biology and Physiological Ecology has been established in the NSF Division of Environmental Biology. Population genetics, behavioral ecology, plant and animal demography, and physiological ecology will be supported. Emphasis will be on the genetic relationships, population dynamics, and physiological adaptations of single species. For further information, contact Dr. John Wright, Acting Program Director, (202) 632-5846. For consideration at the Spring 1977 review panel, proposals should be submitted by *December 1, 1976*.

\* \* \*

NSF - GRADUATE AND POSTDOCTORAL FELLOWSHIPS. A *December 1, 1976*, deadline has been set by the NSF for the submission of applications for graduate fellowships. A *December 6, 1976*, deadline has been set for the submission of applications for postdoctoral fellowships. The annual stipend for the graduate fellowships is \$3,900. Postdoctoral fellows will receive an annual stipend of \$12,000. Further information and application materials may be obtained from Administration 317.

\* \* \*

#### DEADLINES

November 1	American Council of Learned Societies	Travel Grants
1	Energy Research and Development	Grad Traineeships
1	IT&T	International Fellowships

\* \* \*

## Schedule of NSF Programs for Education in the Sciences—Fiscal Year 1977

This consolidated table presents important time-schedule information concerning NSF programs for education in the sciences. It is intended as a convenient reference for: (1) individuals applying for fellowships and (2) institutions submitting proposals for the conduct of all other listed programs and projects. Although application closing dates are firm, award dates are approximate.

### INFORMATION FOR FELLOWSHIP APPLICANTS

	Program Announcement Dates	Application Closing Dates	Award Announcement Dates	Pertinent Publications
<b>FELLOWSHIPS</b>				
Graduate Academic Year 1977-78 .....	Sept. 1976	Nov. 29, 1976	March 15, 1977	SE-77-10
National Needs Postdoctoral Fellowships .....	Sept. 1976	Dec. 3, 1976	March 16, 1977	SE-77-13
Science Faculty Fellowships .....	Oct. 1976	Feb. 1977	April 1977	SE-77-14
North Atlantic Treaty Organization (NATO) <sup>1</sup> Postdoctoral Fellowships .....	Sept. 1976	Nov. 1976	Feb. 1977	SE-77-17
Senior Fellowships .....	Oct. 1976	Dec. 1976	April 1977	SE-77-18

**Note:** Because the dates above are subject to change, prospective applicants should consult specific program announcements for exact final dates.

### INFORMATION FOR INSTITUTIONS SUBMITTING PROPOSALS

*(NOT for Individuals Applying for Participation)*

	Program Announcement Availability	Proposal Closing Dates (receipt in NSF)	Grant Award Dates	Pertinent Publications
<b>DIVISION OF SCIENCE MANPOWER IMPROVEMENT</b>				
National Needs Graduate Traineeships .....	Oct. 1976	Jan. 3, 1977	April 4, 1977	SE 77-12
Minority Institutions Graduate Traineeships .....	Oct. 1976	Dec. 15, 1976	March 1, 1977	SE 77-15
<b>Student-Oriented Programs</b>				
Student-Originated Studies .....	June 1, 1976	Nov. 5, 1976	March 15, 1977	SE 77-22
Women in Science .....	Sept. 15, 1976	Nov. 19, 1976	April 25, 1977	SE 77-26
<b>DIVISION OF SCIENCE EDUCATION RESOURCES IMPROVEMENT</b>				
<b>Comprehensive Assistance to Undergraduate Science</b>				
Education .....	July 15, 1976	Oct. 29, 1976	April 20, 1977	SE 77-30
Minority Institutions Science Improvement .....	Aug. 1, 1976	Dec. 3, 1976 April 1, 1977	April 1, 1977 August 5, 1977	SE 77-31
Undergraduate Instructional Scientific Equipment .....	July 15, 1976	Nov. 12, 1976	June 13, 1977	SE 77-32
Research Initiation and Support .....	Aug. 15, 1976	Dec. 10, 1976	April 15, 1977	SE 77-38
Pre-Service Teacher Education .....	Oct. 15, 1976	Open	Open	SE 77-35

### DIVISION OF SCIENCE EDUCATION DEVELOPMENT & RESEARCH

Alternatives in Higher Education .....	Sept. 1, 1976	Open	Open	SE 77-50
Alternative Degree Programs				
Development of Instructional Materials & Modes				
Technological Innovation in Education				
Continuing Education for Scientists & Engineers				
Pre-College Materials Development, Testing and Evaluation .....	Anticipated funding restrictions may be such as to permit no new starts			

### OFFICE OF SCIENCE AND SOCIETY

Public Understanding of Science .....	Aug. 1976	Open	Open	SE 77-60
Ethical & Human Value Implications of Science and Technology .....	Oct. 1976	Jan. 7, 1977	June 20, 1977	SE 77-62

<sup>1</sup> Program administered by NSF for U.S. citizens at the request of the Department of State.