Academic Programs and Centers, and Independent Research Laboratories, Centers, and Institutes

Vice Provost and Dean of Research and Graduate Policy and Dean of the Independent Laboratories, Centers, and Institutes: Arthur Bienenstock
Associate Dean of Research: Ann M. Arvin
Associate Dean of Graduate Policy: Godfrey Mungal

Independent Research Laboratories, Centers, and Institutes perform multidisciplinary research that extends beyond the scope of any one of the University's organized schools.

The following laboratories, centers, and institutes report to the Vice Provost and Dean of Research and Graduate Policy:
Stanford Institute for Economic Policy Research
Geballe Laboratory for Advanced Materials
Edward L. Ginzton Laboratory
Global Climate and Energy Program
W. W. Hansen Experimental Physics Laboratory
Stanford Humanities Center
Stanford Center for Innovations in Learning
Institute for International Studies
Center for the Study of Language and Information
Stanford Institute for the Quantitative Study of Society

The Hoover Institution on War, Revolution and Peace and the Stanford Linear Accelerator Center (SLAC) report to the President and Provost. SLAC is independently operated under a contract with the Department of Energy.

Following is a description of the activities of these organizations and other academic programs and centers, including research activities, and where applicable, courses offered.

STANFORD CENTER FOR CHICANO RESEARCH

Faculty Executive Committee: Al Camarillo (History, Comparative Studies in Race and Ethnicity), Jim Leckie (Engineering), Yvonne Maldonado (Medicine)

The Stanford Center for Chicano Research (SCCR) is an affiliated research unit of the Center for Comparative Studies in Race and Ethnicity (CSRE) and one of the founding member institutions of the Inter-University Program for Latino Research (IUPLR). The objective of the SCCR is to facilitate basic and policy-oriented research on the nation's second largest ethnic minority group, Mexican Americans. As part of the IUPLR consortium, the SCCR also serves as one of the sites to support research projects involving faculty and graduate students and is currently supported through various grants from government agencies.

The participating faculty of SCCR include professors from several departments in the School of Humanities and Sciences, as well as faculty from Business, Education, Engineering, Law, and Medicine. The SCCR was founded in 1980 and remains the only research center of its kind at a major private university.

STANFORD INSTITUTE FOR ECONOMIC POLICY RESEARCH

Director: John B. Shoven
Deputy Director: Gregory Rosston

The primary mission of the Stanford Institute for Economic Policy Research (SIEPR) is to encourage and support research on economic policy issues in areas such as economic growth, technology policies, environmental and telecommunication regulation, tax reform, international trade, and monetary policy. SIEPR pursues four interrelated goals in support of this mission: (1) stimulating graduate student and faculty research on economic policy issues of continuing importance; (2) communicating its findings broadly; (3) building a community of scholars conducting research on policy issues; and (4) linking the policy community at Stanford with decision makers in business, government, and academia.

SIEPR is a University-wide research center, involving economists from the schools of Business, Engineering, Law, Humanities and Sciences, as well as the Hoover Institution and the Institute for International Studies. Affiliated faculty and students maintain appointments in their home departments while working on SIEPR projects. In addition, scholars visiting from other institutions may apply for affiliation with SIEPR.

Much of the research at SIEPR takes place in research centers or research programs. The Stanford Center for International Development (SCID; Roger G. Noll, Director) fosters research on the economic problems of developing economies and economies in transition, as well as analyzing the political aspects of economic policy reform and historical episodes of reform. For more information about this program call (650) 725-8730. The Center on Employment and Economic Growth (CEEG; Tim Bresnahan, Director) is focusing on the relationship between long-term economic growth, the economic success of individuals and families in their jobs and careers, and the role played by higher education and how it can supply workers and technology in the work force. The program on regulation is part of this center. The Center for Public and Private Finance (CPPF; John B. Shoven and Michael J. Boskin, co-Directors) encompasses work on macroeconomics and monetary policy, tax and budget policy, and finance.

Separate research programs within SIEPR and their directors are the California Policy Program (Thomas MaCurdy); the Energy, Natural Resources, and the Environment Program (James L. Sweeney); the Knowledge Networks and Institutions for Innovation Program (Paul A. David); the Program on the Japanese Economy (Masahiko Aoki); and the Program on Market Design (Susan Athey and Paul Milgrom).

SIEPR does not offer courses for academic credit, admit students, or award degrees. SIEPR is located on the first floor of the Landau Economics Building, 579 Serra Mall, at the corner of Serra and Galvez Streets, phone (650) 725-1874, or http://siepr.stanford.edu.

GEBALLE LABORATORY FOR ADVANCED MATERIALS

Director: Arthur Bienenstock

The Geballe Laboratory for Advanced Materials (GLAM) is an Independent Laboratory that reports to the Dean of Research. The Laboratory supports the research activities of a number of faculty members from the departments of Applied Physics, Chemical Engineering, Chemistry, Electrical Engineering, Materials Science and Engineering, Mechanical Engineering, and Physics. The multidisciplinary foundations of faculty, students, and research provide a dynamic academic environment for a broad spectrum of scientific research areas including high temperature superconducting materials and devices, mesoscopic devices, magnetic recording and storage media materials, electronic materials, opto-electronic materials, nanoscale materials and phenomena, nanoprobe devices, highly correlated electronic systems, computational materials science,

condensed matter theory and physics, polymeric and biological materials, crystal growth, and thin film synthesis of complex oxides.

GLAM also provides advanced materials characterization and synthesis facilities for its members as well as for the Stanford materials research community at large. They include a focused ion beam (FIB), scanning electron microscopy (SEM), scanning probe microscopy (SPM), transmission electron microscopy (TEM), x-ray diffraction analysis (XRD), and x-ray photoelectron spectroscopy (XPS) for characterization and thin film deposition capabilities for synthesis of materials. These facilities are managed by professional staff who also conduct research and development of new tools and techniques in areas related to advanced materials synthesis and characterization.

The Geballe Laboratory for Advanced Materials is housed in the new Moore Materials Research Building McCullough Building complex.

EDWARD L. GINZTON LABORATORY

Director: David A. B. Miller

The Ginzton Laboratory houses the research activities of a number of faculty members from the departments of Applied Physics, Electrical Engineering, and Mechanical Engineering. The multidisciplinary foundations of faculty, students, and research provide a dynamic academic environment for scientific research including fiber optics, laser physics and applications, mesoscopic devices, microelectromechanical and microacoustic devices and systems, optoelectronic devices and systems, photonics, nanophotonics and crystals, scanning optical microscopy, quantum cryptography and computing, tunneling and force microscopy, and ultrafast and nonlinear optics.

W. W. HANSEN EXPERIMENTAL PHYSICS LABORATORY (HEPL)

Director: Robert L. Byer

HEPL is an independent laboratory celebrating over 50 years of fundamental science and engineering research. HEPL faculty and students are engaged in research in accelerator physics, astrophysics, dark matter in the universe, free electron lasers, fundamental tests of relativity in space, gamma ray observations, gravitational wave detection, quantum condensed matter, and space based solar physics studies. Many of the programs involve satellite-based studies in fundamental physics and engineering.

HOOVER INSTITUTION ON WAR, REVOLUTION AND PEACE

Director: John Raisian

The Hoover Institution, founded in 1919 by Stanford alumnus Herbert Hoover, is a public policy research center devoted to advanced study of politics, economics, and political economy, both domestic and foreign, as well as international affairs. Hoover fellows are the foundation of the research program. This varied and distinguished community of scholars strives to conceive and disseminate ideas defining a free society within the framework of three programs.

American Institutions and Economic Performance, which focuses on interrelationships of U.S. political and legal institutions and economic activity, often referred to as political economy.

Democracy and Free Markets, which focuses on political economy in countries around the world.

International Rivalries and Global Cooperation, which focuses on interrelationships among countries, examining issues of foreign policy, security, and trade.

By collecting knowledge, generating ideas, and disseminating both, the Institution seeks to secure and safeguard peace, improve the human condition, and limit government intrusion into the lives of individuals, all of which are consistent with three prominent values: peace, personal freedom, and the safeguards of the American system.

STANFORD HUMANITIES CENTER

Director: John Bender

Associate Director: Elizabeth S. Wahl

External Faculty Fellows: Marilynn Desmond (English and Comparative Literature, Binghamton University), Jeff Dolven (English, Princeton University), Karen Henson (Music, King's College, Cambridge), Rebecca Lemon (English, University of Southern California), Denise Schmandt-Besserat (Art and Middle Eastern Studies, University of Texas at Austin), Jonathan Schofer (Hebrew and Semitic Studies, University of Wisconsin–Madison), Miguel Tamen (Literary Theory and Romance Literatures, Universidade de Lisboa), Alan Taylor (History, University of California, Davis)

Rockefeller Fellows in Black Performing Arts: Jayna Brown (English and Ethnic Studies, University of Oregon), Helen Mugambi (Comparative Literature, California State University, Fullerton)

Internal Faculty Fellows: Karol Berger (Music), Zephyr Frank (History), Denise Gigante (English), Tamar Schapiro (Philosophy), Peter Stansky (History), Gavin Wright (Economics), Chao Fen Sun (Asian Languages)

Geballe Dissertation Graduate Student Fellows: Raul Coronado, Jr. (Modern Thought and Literature), Brian Epstein (Philosophy), Jared Farmer (History), Amelia Glaser (Comparative Literature), Karen Gross (English), Sanja Perovic (Comparative Literature), David Platt (Classics), Jessica Straley (English), Heather Webb (French and Italian)

The Stanford Humanities Center promotes research and education in the humanities at Stanford and nationwide. In particular, it stresses work of an interdisciplinary nature, accomplished through the following programs: one-year residential fellowships for Stanford faculty, faculty members from other institutions, and Stanford graduate and undergraduate students; public presentations (such as lectures, conferences, and publications); and a research workshop program sponsored by the Mellon Foundation that brings faculty and graduate students together regularly to advance ongoing research on topics of interdisciplinary interest.

Fellows are selected on the basis of an open competition. They pursue their own research and participate in a weekly seminar at the center throughout the year. Faculty fellows also contribute to the intellectual life of the Stanford community through activities such as giving departmental courses, participating in ongoing research workshops, or organizing conferences. The courses given by fellows in 2003-04 are listed below.

COURSES

ASIAN LANGUAGES

CHINLIT 191/291. The Structure of Modern Chinese
4 units, Aut (Sun)

DRAMA

DRAMA 155B. Early 20th-Century Black Performers and Performance
4 units, Spr (Brown)

DRAMA 157M. Postcoloniality, Performance, and African Popular Culture
4 units, Spr (Mugambi)

ECONOMICS

ECON 18N. The Economics of the Civil Rights Revolution
2 units, Win (Wright)

PHILOSOPHY

PHIL 279. Research Seminar in Ethical Theory
3 units, Win (Schapiro)

STANFORD CENTER FOR INNOVATIONS IN LEARNING

Directors: Stig Hagstrom, Roy Pea
Executive Director: Sam Steinhardt

The Stanford Center for Innovations in Learning (SCIL), established in February 2002, is dedicated to conducting scholarly research and related activities that advance the sciences, technologies, and practices supporting learning and teaching from early childhood through postsecondary education. Important related activities include our participation in an international network of similar research centers, the Wallenberg Global Learning Network (WGLN), and our support for innovative teaching at Stanford in Wallenberg Hall, our newly renovated home.

Researchers at SCIL focus on the most significant issues in learning and teaching, and on the ways that innovative uses of technologies can help address those issues. Research projects typically involve collaboration among faculty, senior staff members, and students from several disciplines, and often include scholars from other institutions and countries. SCIL serves as a focal point for joint research ventures between Stanford faculty and international business and educational institutions.

SCIL's research is based on a key insight of the last two decades of work in the learning sciences, namely that learning is not a free-floating cognitive process, but instead a concrete social activity in which physical setting, social interaction, and the structuring and sequencing of events matter. The three main thrusts of our research agenda are strengthening the learner, structuring learning environments, and making learning visible.

Given the increasing role technology is likely to play in improving learning theory and practice around the world, another of SCIL's objectives is collaborative research and development with international partners. SCIL is a member of the Wallenberg Global Learning Network (WGLN), an alliance between Stanford and learning laboratories in Sweden and Germany, supported respectively by the Knut and Alice Wallenberg Foundation and two German government research organizations. The WGLN supports research projects that link Stanford researchers in the sciences, humanities, and medicine to their Swedish and German colleagues.

SCIL is located in Wallenberg Hall (Building 160 in the front of the Quad). For more information, see http://scil.stanford.edu/.

CENTER FOR THE INTERDISCIPLINARY STUDY OF SCIENCE AND TECHNOLOGY

Co-Directors: Michael Friedman, Robert McGinn
Executive Committee: Michael Friedman, Timothy Lenoir, Robert McGinn, Eric Roberts
Phone: (650) 725-0119

The Center for the Interdisciplinary Study of Science and Technology (CISST) brings together faculty, undergraduate and graduate programs, and research initiatives concerned with understanding science and technology in an interdisciplinary context. It is concerned equally with the historical, philosophical, and cultural study of science, technology, and medicine, and with critical analysis of issues raised by scientific and technological innovations in contemporary society. CISST houses two major programs: HPST (History and Philosophy of Science and Technology) and STS (Science, Technology, and Society); see their respective sections in this bulletin for their programs. CISST also sponsors visiting scholars, postdoctoral researchers, workshops, and speakers, providing a bridge between the humanities and social sciences, and the sciences and engineering.

At the undergraduate level, CSST houses STS, an undergraduate major that grants both a B.A. and a B.S. degree. The STS is designed to foster understanding of issues raised by the natures, consequences, and social shaping of technology and science in the contemporary world. To this end, the STS curriculum combines interdisciplinary, humanistic, and social scientific studies of science and technology in society with attainment of either technical literacy or fundamental understanding in some area of engineering or science.CISST also offers an honors program in STS that is open not only to STS majors but also to students in other majors who wish to pursue a senior honors project that addresses a question arising from the relations among science, technology and society. Prospective majors or honors students should consult the STS section in this bulletin.

CISST also publishes a selection of undergraduate research in STS in our electronic undergraduate journal, *Techne* (http://www.stanford.edu/group/STS/techne).

At the graduate level, CISST houses an interdisciplinary graduate program, the Program in History and Philosophy of Science and Technology (HPST), jointly administered by the History and Philosophy departments; it involves faculty and students in these and other departments in the humanities. Prospective students interested in applying to the graduate program should consult the HPST description in the catalogue as well as the admissions requirements of the appropriate department in which they wish to apply for a M.A. or a Ph.D.

The Center web site (http://www.cisst.stanford.edu) contains a current listing of courses, speakers, visitors, and workshops, and a more detailed account of faculty teaching and research.

INSTITUTE FOR INTERNATIONAL STUDIES (IIS)

Director: David Holloway
Deputy Director: Coit Blacker

The Institute for International Studies promotes individual and collaborative research on contemporary, policy-relevant issues that are international and interschool in character. Working in partnership with the seven schools at Stanford (Business, Earth Sciences, Education, Engineering, Humanities and Sciences, Law, and Medicine) and with the Hoover Institution, IIS fosters excellence in research and teaching across disciplinary, school, and national boundaries. The priority areas of research are in the fields of international and regional peace and security; economic development and political change in East and Southeast Asia; the global environment challenge; and the delivery of health care in a comparative perspective.

Opportunities for undergraduate research include the Goldman Interschool Honors Program in Environmental Science, Technology, and Policy and the CISAC Interschool Honors Program in International Security. The institute manages 10 undergraduate and graduate fellowship programs.

The constituent centers and programs within IIS include the Asia/Pacific Research Center, the Center on Democracy, Development and the Rule of Law, the Center for Environmental Science and Policy, the Center for Health Policy, the Center for International Security and Cooperation, the European Forum, and the Stanford Japan Center—Research.

In the areas of public service and outreach, IIS administers the Stanford Program on International and Cross-Cultural Education (SPICE), which develops internationally-oriented curricula for use by public school teachers.

The IIS central office is located at 100 Encina Hall, telephone (650) 723-4581. For more information about particular IIS programs, contact the programs directly (area code 650):

Asia/Pacific Research Center (A/PARC), 723-9741, Andrew Walder, *Director*

Center on Democracy, Development and the Rule of Law, 724-7197, Coit Blacker, *Director*

Center for Environmental Science and Policy (CESP), 725-2606, Walter P. Falcon, Stephen Schneider, *Co-Directors*

Center for Health Policy (CHP), 723-1020, Alan M. Garber, M.D., *Director*

Center for International Security and Cooperation (CISAC), 723-9625, Scott Sagan, Christopher Chyba, *Co-Directors*

European Forum, 723-4716, Timothy Josling, Convenor

Inter-University Center for Japanese Language Studies, 725-1490

Stanford Program on International and Cross-Cultural Education (SPICE), 723-1116

Stanford Japan Center-Research, 011 75-752-7073, extension 40

UNDERGRADUATE PROGRAMS

INTERSCHOOL HONORS PROGRAM IN ENVIRONMENTAL SCIENCE, TECHNOLOGY, AND POLICY

The Center for Environmental Science and Policy (CESP) coordinates a University-wide interschool honors program in environmental science, technology, and policy. Undergraduates planning to participate in the honors program are required to pursue studies in environmental sciences, technology, and policy, with a concentration in a single discipline. After completion of the prerequisite units, students join small group honors seminars to work with specific faculty members in the environmental field on an honors thesis that incorporates both scientific principles and the policy aspects of selected environmental issues.

Courses in environmental studies appear under the course listings of the schools of Earth Sciences, Engineering, and Humanities and Sciences. Information about and applications to this program may be obtained from CESP, E401 Encina Hall East; telephone (650) 723-5697.

COURSES

IIS 195. Interschool Honors Program in Environmental Science, Technology, and Policy—Students from the schools of Humanities and Sciences, Engineering, and Earth Sciences analyze important problems in a year-long small group seminar. Combines research methods, oral presentations, preparation of an honors thesis by each student, and where relevant, field study.

1-9 units, Aut, Win, Spr (Naylor, Falcon, Daily, Schneider)

INTERSCHOOL HONORS PROGRAM IN INTERNATIONAL SECURITY

The Center for International Security and Cooperation (CISAC) coordinates a University-wide interschool honors program in international security. Students selected for the honors program will fulfill individual department course requirements, attend a year-long seminar on international security research, and produce an honors thesis with policy implications. In order to qualify for the program, students must demonstrate sufficient depth and breadth of international security course work. Ideally, applicants to the program should have taken MS&E 195/ POLISCI 138, International Security in a Changing World, MS&E 193/ POLISCI 134P, Technology and National Security, POLISCI 110B, Strategy, War, and Politics, and at least one related course such as ECON 150, Economic Policy, STS 110, Ethics and Public Policy, SOC 160, Formal Organizations, SOC 166, Organizations and Public Policy, and POLISCI 114T, Major Issues in International Conflict Management.

Information about and applications to this program may be obtained from the Center for International Security and Cooperation, E201 Encina Hall East, telephone (650) 723-1625.

COURSES

IIS 199. Interschool Honors Program in International Security—Students from the schools of Humanities and Sciences, Engineering, and Earth Sciences meet in a year-long seminar to discuss, analyze, and conduct research on international security. Combines research methods, policy evaluation, oral presentation, and preparation of an honors thesis by each student.

9-15 units, Aut, Win, Spr (Chyba, Fearon, May, Lederberg, Sagan, Stedman)

CENTER FOR THE STUDY OF LANGUAGE AND INFORMATION (CSLI)

Director: Byron Reeves
Executive Director: Keith Devlin

CSLI supports research at the intersection of the social and computing sciences. It is an interdisciplinary endeavor, bringing researchers together from academe and industry in the fields of artificial intelligence, computer science, engineering, linguistics, logic, education, philosophy, and psychology. CSLI's researchers are united by a common interest in communication and information processing that ties together people and interactive technology.

The technologies of interest at CSLI are at the cutting edge of the information revolution. They include natural language processing, voice user interfaces, ubiquitous computing, collaborative work environments, handheld devices, information appliances, automatic language translation, conversational interfaces, machine learning, intelligent agents, electronic customer relationship management, and distance learning applications.

A primary goal of CSLI is to have a substantial and long-term intellectual impact on the academic and business communities involved with interactive technology. Our industry research partners and sponsors have a broad and facilitated access to ideas, faculty, students, and laboratories. Partners can share in the intellectual property of CSLI, and in the governance committees of the Center that establish research directions and funding priorities. CSLI accelerates knowledge transfer to products and services by involving executives and researchers in Stanford classrooms. CSLI partners can meet Stanford students studying in over 20 different degree programs across campus.

Course work related to the research at CSLI can be found in the "Program in Symbolic Systems" section of this bulletin.

CSLI is located at the corner of Campus Drive West and Panama Street, in Ventura Hall and Cordura Hall; telephone (650) 725-3286.

STANFORD INSTITUTE FOR THE QUANTITATIVE STUDY OF SOCIETY (SIQSS)

Director: Norman H. Nie
Web Site: http://www.stanford.edu/group/siqss

Founded in 1998, the Stanford Institute for the Quantitative Study of Society (SIQSS) is a multidisciplinary research institute affiliated with Stanford University's Office of Research and Graduate Policy. The Institute is devoted to producing and sponsoring high-quality empirical social science research about the nature of society and social change.

The central mission of SIQSS is to provide important social knowledge for the larger society and to develop the empirical social sciences as a primary tool for understanding social reality. SIQSS seeks to fulfill this mission by undertaking large-scale, socially relevant, theoretically

important, and methodologically sound social research. Examples of research on which the Institute is working and attempting to expand include projects on Information and Technology in Society; Education and its Social Outcomes; and the 2000 Census; as well as an online scholarly journal, *IT & Society*.

Scholars participating in SIQSS research programs and activities are drawn from diverse disciplines throughout Stanford University and from other academic institutions. SIQSS currently supports quantitative research through the following: Long-Term Institute-Initiated Research Programs, Stanford Faculty Research Grants and Student Research Assistantships, Stanford Faculty Fellows, Interdisciplinary Seminars, and the American Empirical Series.

SIQSS's administrative office is located at 417 Galvez Mall, Encina Hall West, on the first floor.

INSTITUTE FOR RESEARCH ON WOMEN AND GENDER

Acting Director: Barbara C. Gelpi

During the last decade, research on women and gender has had a profound influence on the social and medical sciences, and the humanities. Since its founding, the Institute for Research on Women and Gender's primary mission is to support scholarship on subjects related to women and gender and to organize educational programs that communicate these findings to a broader public.

Stanford faculty, staff, graduate students, and members of the community work together to stimulate a more informed analysis of issues concerning gender.

Institute projects span a wide range of disciplines, but rest on certain shared premises: that gender is a vital category of analysis for contemporary scholarship and policymaking and that the experiences of women as individuals and as a group can best be understood within their historical, social, and cultural contexts. The institute sponsors interdisciplinary research seminars and conferences that examine gender issues in areas such as aging, art, education, employment, family structures, gender segregation in the workplace and educational institutions, health care, history, law, literature, and psychology. Many scholarly publications have resulted from these activities.

SOCIAL SCIENCE HISTORY INSTITUTE (SSHI)

The goal of Social Science History Institute is to re-engineer the manner in which students in social science departments learn about historical institutions and data, and the manner in which students in history and related disciplines are trained in social science methods. Historians and social scientists share many of the same substantive interests (the development of economies, political systems, and social structures, for example), but they approach them with different and complimentary methods and bodies of evidence. There is, however, a great deal of potential for historians and social scientists to draw on the strengths of each other's methods to improve their own work and to foster increased interaction among the various disciplines that employ history as a laboratory to operationalize social science theories. The Social Science History Institute seeks to realize this potential by transplanting state of the art research methods from classics, economics, history, political science, and sociology across the boundaries of each discipline. Toward this end, SSHI offers a variety of seminars, conferences, and research support for both faculty and graduate students.

STANFORD LINEAR ACCELERATOR CENTER (SLAC)

Director: Jonathan Dorfan

The Stanford Linear Accelerator Center is devoted to experimental and theoretical research in elementary particle physics and astrophysics, to the development of theory and new techniques in particle accelerators, to research and development in particle detectors, and to the use of the SPEAR electron storage ring as a source of intense vacuum ultraviolet and x-ray beams for research in biology, chemistry, material science, environmental science, medical science, and physics. The center is on 425 acres of Stanford property west of the main campus and is operated under a contract with the Department of Energy. In a new initiative, Stanford University's Kavli Particle Astrophysics and Cosmology Institute is being established on the SLAC campus.

SLAC is operated by Stanford as a national facility so that qualified scientists from universities and research centers throughout the country and world, as well as those at Stanford, may participate in the research programs at the center. Stanford graduate students may carry out research for the Ph.D. degree with members of the SLAC faculty. Graduate students from other universities also participate in the research programs of visiting groups.

Research assistantships are available for qualified students by arrangement with individual faculty members. There are also opportunities for summer employment in the research groups at the center. Students interested in research in the area of high energy physics, particle astrophysics, and accelerators should contact Professor Rafe H. Schindler, the high energy physics graduate student adviser. Research opportunities for students interested in the SPEAR X-ray science program are discussed below under SSRL.

STANFORD SYNCHROTRON RADIATION LABORATORY (SSRL)

Director: Keith O. Hodgson

SSRL, a division of the Stanford Linear Accelerator Center, is a National User Facility which provides synchrotron radiation, a name given to x-rays or light produced by electrons circulating in a storage ring at nearly the speed of light. These extremely bright x-rays can be used to investigate forms of matter ranging from objects of atomic and molecular size to man-made materials with unusual properties. The obtained information and knowledge is of great value to society, with impact in areas such as the environment, future technologies, health, and national security. Many of its 19 active faculty hold joint appointments with campus departments.

SSRL has research programs in materials sciences as well as accelerator physics and development of advanced sources of synchrotron radiation, especially ultra short pulse, x-ray free electron lasers. The lab is interdisciplinary with graduate students actively pursuing degrees from Stanford campus departments that include Applied Physics, Chemical Engineering, Chemistry, Earth Sciences, Electrical Engineering, Materials Science and Engineering, Physics, and Structural Biology.

Students interested in working at the facility should contact a member of the SSRL faculty, one of the assistant directors, or other members of the Stanford faculty who use SSRL in their research programs. Full information can be found at http://www-ssrl.slac.stanford.edu.