

Caltech Catalog

California Institute of Technology
Pasadena, California 91125
(626) 395-6811

September 2015

The mission of the California Institute of Technology is to expand human knowledge and benefit society through research integrated with education. We investigate the most challenging, fundamental problems in science and technology in a singularly collegial, interdisciplinary atmosphere, while educating outstanding students to become creative members of society.

While every effort has been made to ensure that this catalog is accurate and up to date, it may include typographical or other errors. The Institute reserves the right to change its policies, rules, regulations, requirements for graduation, course offerings, and any other contents of this catalog at any time.

You can view the *Caltech Catalog* online at <http://catalog.caltech.edu/>. Please note that the contents of websites that link to online course entries are not part of the official catalog.

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ACADEMIC CALENDAR 2015-16

FIRST TERM 2015

September 16-18

International student orientation

September 20-27

New student check-in and orientation
for undergraduates

September 21-25

New student check-in and orientation
for graduate students

September 24

Undergraduate Academic Standards and
Honors Committee—1 p.m.

September 28

Beginning of instruction—8 a.m.

October 16

Last day for adding courses and remov-
ing conditions & incompletes

October 28–November 3

Midterm examination period

November 9

Midterm deficiency notices due—
9 a.m.

November 11

Faculty meeting—noon to 1 p.m.

November 18

Last day for dropping courses, exercis-
ing pass/fail option, and changing
sections

November 19–December 4

Registration for second term, 2015-16

November 26-27

Thanksgiving (Institute holiday)

December 4

Last day of classes
Last day to register for second term,
2015-16, without a \$50 late fee

December 5-8

Study period

December 9-11*

Final examinations, first term, 2015-16

December 11

End of first term, 2015-16

December 12–January 4

Winter recess

December 16

Instructors' final grade reports due—
9 a.m.

December 25-28

Christmas (Institute holiday)

December 29-31

Special release days

SECOND TERM 2016

January 1

New Year's Day (Institute holiday)

January 4

Beginning of instruction—8 a.m.

January 5

Undergraduate Academic Standards and
Honors Committee—9 a.m.

January 18

Martin Luther King Day (Institute
holiday)

January 22

Last day for adding courses and remov-
ing conditions & incompletes

February 3-9

Midterm examination period

February 15

Presidents' Day (Institute holiday)

February 16

Midterm deficiency notices due—
9 a.m.

February 22

Faculty meeting—noon to 1 p.m.

February 24

Last day for dropping courses, exercis-
ing pass/fail option, and changing
sections

February 25–March 9

Registration for third term, 2015-16

March 9

Last day of classes
Last day to register for third term,
2015-16, without a \$50 late fee

March 10-13

Study period

March 14-16*

Final examinations, second term,
2015-16

*First due date for final examinations

Academic Calendar

March 16
End of second term, 2015–16
March 17–27

Spring recess

March 21
Instructors' final grade reports due—
9 a.m.

THIRD TERM 2016

March 28
Beginning of instruction—8 a.m.

March 29
Undergraduate Academic Standards and
Honors Committee—9 a.m.

April 15
Last day for adding courses and remov-
ing conditions and
incompletes

April 27–May 3
Midterm examination period

May 9
Midterm deficiency notices due—
9 a.m.

Last day for seniors to remove condi-
tions and incompletes

May 13
Last day for admission to candidacy for
the degrees of Master of Science
and Engineer, and for scheduling
an examination for the degree of
Doctor of Philosophy

May 18
Last day for dropping courses, exercis-
ing pass/fail option, and changing
sections

May 19–June 3
Registration for first term, 2016–17,
and for summer research

May 27
Last day of classes—seniors and gradu-
ate students
Last day for presenting theses for the
degrees of Doctor of Philosophy
and Engineer

May 28–31
Study period for seniors and graduate
students

May 30
Memorial Day (Institute holiday)

June 1–3*
Final examinations for seniors and grad-
uate students, third term, 2015–16

**First due date for final examinations*

June 3
Last day of classes—undergraduates
Last day to register for first term, 2016–
17, without a \$50 late fee

June 4–7
Study period for undergraduates

June 6
Instructors' final grade reports due for
seniors and graduate students—
9 a.m.

June 8
Undergraduate Academic Standards and
Honors Committee—9 a.m.
Curriculum Committee—10 a.m.
Faculty meeting—2 p.m.–3 p.m.

June 8–10*
Final examinations for undergraduates,
third term, 2015–16

June 10
Commencement—10 a.m.
End of third term, 2015–16

June 15
Instructors' final grade reports due for
undergraduates—9 a.m.

June 22
Undergraduate Academic Standards and
Honors Committee—9 a.m.

July 4
Independence Day (Institute holiday)

September 5
Labor Day (Institute holiday)

FIRST TERM 2016–17

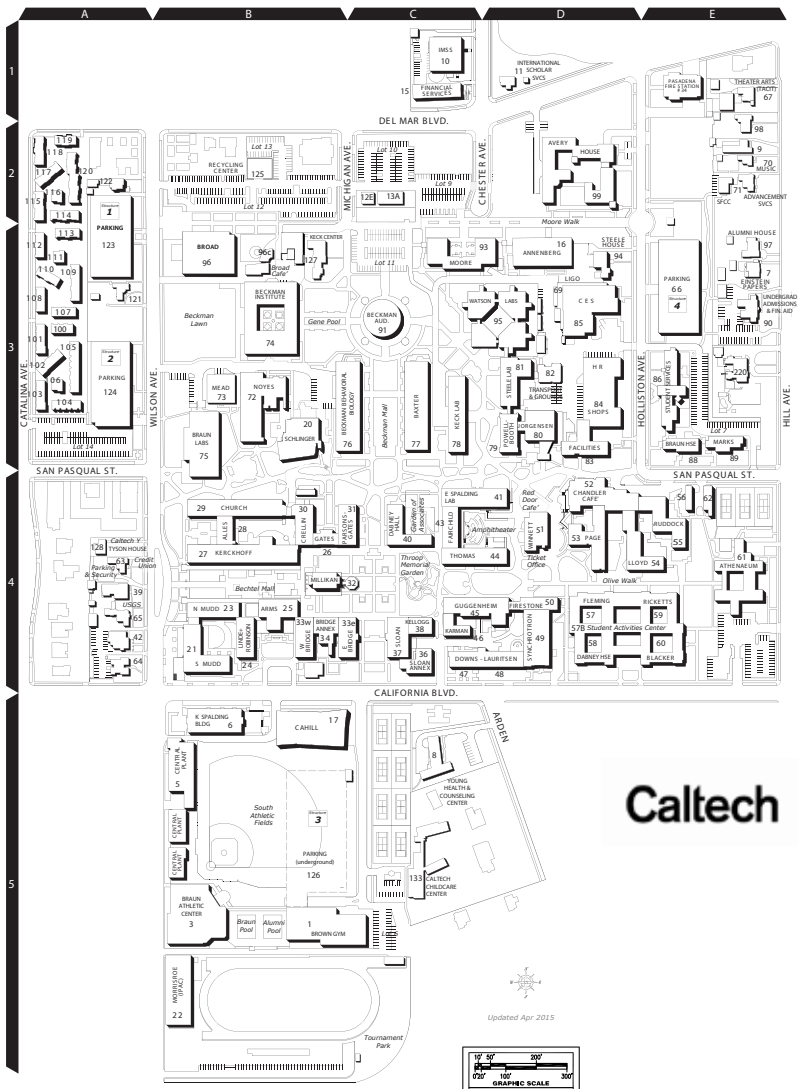
September 14–16
International student orientation

September 18–25
New student check-in and orientation
for undergraduates

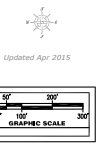
September 19–23
New student check-in and orientation
for graduate students

September 22
Undergraduate Academic Standards and
Honors Committee—9 a.m.

September 26
Beginning of instruction—8 a.m.



Caltech



Caltech Campus Building Directory

Buildings by Name	Bldg No	Map Grid	Buildings by Name	Bldg No	Map Grid
263 S Chester (International Scholar Services)	11	D1	Financial Services	15	C1
275 S Hill (Theater Arts (TACTT))	67	E1	Firestone Laboratory	50	D4
287 S Hill (Rickenbaugh House)	98	E1	Fleming House	57	D4
295 S Hill	9	E2	Gates Annex	26	B4
305 S Hill (Music House)	70	E2	Guggenheim Laboratory	45	C4
315 S Hill (Advancement Svcs (front) SFCC (rear))	71	E2	Human Resources/Facilities Management Shops	84	D3
315 S Wilson	122	A2	Information Management Systems & Svcs (IMSS)	10	C1
320 S Michigan Ave	12E	C2	Jorgensen Laboratory	80	D3
330 S Michigan Ave (Audio Visual Annex)	13A	C2	Karman Laboratory	46	C4
345 S Hill (Alumni House)	97	E2	Keck Center	127	B3
355 S Holliston (Steele House)	94	D3	Keck Laboratories	78	C3
363 S Hill (Einstein Papers House)	7	E3	Kellogg Radiation Laboratory	38	C4
375 S Wilson (Pruftrock House)	121	A3	Kerckhoff Annex	27A	B4
383 S Hill (Undergrad Admissions & Financial Aid)	90	E3	Kerckhoff Laboratories	27	B4
415 S Hill Ave	220	E3	Lauritsen Laboratory (Downs-Lauritsen Labs)	48	D4
505 S Wilson (Tyson House/Caltech Y)	128	A4	LIGO	69	D3
515 S Wilson (Credit Union/Parking & Security)	63	A4	Linde+Robinson Laboratory	24	B4
525 S Wilson (U.S. Geological Survey)	39	A4	Lloyd House	54	D4-E4
535 S Wilson (Fitzhugh House/USGS)	65	A4	Marks House	89	E3
551 S Wilson (Investment Office)	42	A4	Mead Laboratory	73	B3
565 S Wilson (Audit Svcs & Inst Compliance)	64	A4	Millikan Library	32	B4
1320 San Pasquel St	56	E4	Moore Laboratory	93	C3
1350 San Pasquel St	62	E4	Morrisroe Astroscience Laboratory (IPAC)	22	B5
Alles Laboratory	28	B4	Mudd Laboratories - North	23	B4
Annenberg Center for Info Sci and Tech (IST)	16	D3	Mudd Laboratories - South	21	B4
Arms Laboratory	25	B4	Noyes Laboratory	72	B3
Athenaeum	61	E4	Page House	53	D4
Avery House	99	D2	Parking Structure 1 (North Wilson Avenue)	123	A3
Baxter Hall	77	C3	Parking Structure 2 (South Wilson Avenue)	124	A3
Beckman Auditorium	91	C3	Parking Structure 3 (California Avenue)	126	B5
Beckman Behavioral Biology Labs (BBB)	76	B3-C3	Parking Structure 4 (Holliston Avenue)	66	E3
Beckman Institute	74	B3	Parsons-Gates Hall of Administration	31	B4
Blacker House	60	E4	Powell-Booth Laboratory	79	D3
Braun Athletic Center	3	B5	Recycling Center	125	B2
Braun House	88	E3	Ricketts House	59	E4
Braun Laboratories	75	B3	Ruddock House	55	E4
Bridge Annex	34	B4	Satellite Utility Plant	66B	E3
Bridge Laboratory - East	33E	B4	Schlinger Lab for Chemistry and Chem Engr	20	B3
Bridge Laboratory - West	33W	B4	Sherman Fairchild Library	43	C4
Broad Café	96C	B3	Sloan Annex	36	C4
Broad Center for the Biological Sciences	96	B3	Sloan Laboratory	37	C4
Brown Gymnasium	1	B5	South Undergrad Housing Complex Basement	57B	D4
Cahill Center for Astroscience and Astrophysics	17	B5	Spalding Lab, Eudora (Eudora Spalding Lab)	41	C4
Caltech Childcare Center (New)	133	C5	Spalding, Keith (Keith Spalding Building)	6	B5
Catalina Graduate Housing	100-120	A2-A3	Steele Laboratory	81	D3
Central Engineering Services (CES)	85	D3	Student Activities Center	57B	D4
Central Plant (incl. Cogen & Cooling Towers)	5	B5	Student Services, Center for (CSS)	86	E3
Chandler Dining Hall (Chandler Café)	52	D4	Synchrotron Laboratory	49	D4
Church Laboratory	29	B4	Thomas Laboratory	44	C4
Crellin Laboratory	30	B4	Transportation & Grounds Operations	82	D3
Dabney Hall	40	D4	Undergraduate Admissions & Financial Aid	90	E3
Dabney House	58	D4	Watson Laboratories	95	C3-D3
Downs Laboratory (Downs-Lauritsen Labs)	47	C4	Winnett Center (Café/Bookstore/Ticket Ofc)	51	D4
Facilities/Facilities Management	83	D3	Young Health and Counseling Center	8	C5

General Information



INTRODUCTION

People who follow the news in science and engineering are often astonished the first time they see Caltech. Unadorned signs mark the borders of a campus that is just half a mile across. Inside, gardens, fountains, and café patios fill sunny spaces between historic buildings. The small, park-like campus comes as a surprise, given Caltech's record of world-changing discoveries and inventions and the luminaries educated here.

Behind the gracious old façades—and several striking contemporary ones—are some of the world's most advanced laboratories. In addition, faculty and students develop and use facilities around the world and in space. They founded NASA's Jet Propulsion Laboratory (JPL), which is managed by Caltech and is an integral partner in research. JPL enables the nation to explore space for the benefit of humankind by developing robotic space missions. Caltech also manages major collaborations such as a Department of Energy research hub to work toward artificial photosynthesis and the Laser Interferometer Gravitational-Wave Observatory, or LIGO, which involves some 500 scientists worldwide in the effort to directly detect ripples in space-time. Faculty and students design instruments and experiments for the world's particle accelerators, seismic networks, pollution-research aircraft, deep-ocean submersibles, and ground- and space-based observatories studying Earth, the planets, and the cosmos.

Caltech students and faculty pioneered the fields of molecular biology, geochemistry, aerospace, earthquake engineering, and astrophysics, to name just a few. They developed the principles of jet flight, key tenets of seismology (including the Richter scale), methodologies for integrated circuit design, empirical and laboratory approaches for economics and political science, and technology to view and study chemical reactions at the atomic level as they occur. They discovered fundamental building blocks of matter, the nature of chemical bonds, the specializations of the left and right brain hemispheres, the role played by chromosomes in heredity, the age of Earth, the origin of elements by reactions in stars, and the geometry of the universe.

The effect of Caltech's dedication to fundamental research combined with enabling technologies is evident in the more than 2,600 U.S. patents Caltech has obtained since 1980, outstripping other universities on a per capita basis. Forty to fifty Caltech inventions are commercially licensed each year. Since 1995, faculty and students have created more than 180 start-up companies. And these numbers—and the contributions to science and society mentioned above—do not touch on the accomplishments of alumni who have left Caltech for diverse careers around the world.

Caltech's history of achievement stems from the caliber of people who choose to come here and from their ready access to other superb scholars and to cutting-edge facilities. When undergraduates arrive, they have the opportunity—sometimes for the first time in their lives—to discuss with passion exciting, challenging problems in

science, math, and engineering with people who can respond in kind. Many work side by side with faculty in the labs before their first year is out. Together, faculty and students stretch themselves intellectually, moving ahead fast and sometimes leaving whole new fields in their wakes.

The following pages offer an overview of Caltech's aims and programs and a brief history of how it evolved into one of the world's major research institutions.

Mission, Educational Objectives, and Structure

The mission of the California Institute of Technology (Caltech) is to expand human knowledge and benefit society through research integrated with education. We investigate the most challenging, fundamental problems in science and technology in a singularly collegial, interdisciplinary atmosphere, while educating outstanding students to become creative members of society.

Caltech provides an outstanding education that prepares students to become world leaders in science, engineering, academia, business, and public service. The Institute aims for these educational outcomes:

- Graduates can analyze, synthesize, and communicate ideas.
- Graduates demonstrate integrity, personal and professional responsibility, and respect for others.
- Bachelor of Science graduates can identify, analyze, and solve challenging problems within and across science and engineering disciplines.
- Bachelor of Science graduates can apply their analytic skills to other areas of knowledge and understand issues important in our society.
- Master of Science graduates can apply advanced knowledge in a specialized area in preparation for their professional careers.
- Doctor of Philosophy graduates can independently identify, analyze, and solve fundamental research problems with breadth and depth.

Caltech is an independent, privately supported university. It has six academic divisions: Biology and Biological Engineering; Chemistry and Chemical Engineering, Engineering and Applied Science; Geological and Planetary Sciences; the Humanities and Social Sciences; and Physics, Mathematics and Astronomy.

Undergraduate Program

Undergraduates earn Bachelor of Science (B.S.) degrees, with options (majors) available in applied and computational mathematics; applied physics; astrophysics; bioengineering; biology; business economics and management; chemical engineering; chemistry; computer science; economics; electrical engineering; engineering and applied science; English; geobiology; geochemistry; geology; geophysics; history; history and philosophy of science; interdisciplinary studies; mathematics; mechanical engineering; philosophy; physics; planetary science; and political science.

A Caltech education includes not just the depth of an option, but also breadth in the basic sciences, humanities, and social sciences. Required courses in biology, chemistry, humanities, mathematics, physics, and the social sciences expose students to diverse intellectual pursuits and help prepare students for the interdisciplinary nature of contemporary research in science and technology. Caltech has offered more than 275 humanities and social science courses, and most students take more than the number required. Students also take three or more terms of physical education, and 80 percent participate in an organized intramural/recreational competition each year—one of the highest participation rates in the country. Thirty percent participate in intercollegiate athletics.

Most students select an option near the end of their first year, begin to specialize during their second year, and concentrate on their chosen field in their third and fourth years. Some students participate in overseas programs at other major research universities in their junior or senior years. Throughout their education, students have opportunities to do hands-on research, and they often design their own faculty-mentored summer research projects (see SURF details on page 30). Premedical students may gain clinical experience via joint programs with four renowned hospitals.

Caltech offers students many academic options and opportunities for personal growth, and also offers unequaled training in rigorous thinking, scientific methodology, and creative problem solving. That training, the company of like minds, and Caltech's collaborative ethic prepare students to take leadership roles in research, academia, and industry, and to find lifelong satisfaction in their work and friendships.

To learn more, see www.admissions.caltech.edu.

Graduate Program

Caltech offers graduate students rigorous research training and a strong, flexible curriculum of course work. Graduate students make up more than half of the student body.

Graduate options include aeronautics; applied and computational mathematics; applied mechanics; applied physics; astrophysics; behavioral and social neuroscience; biochemistry and molecular biophysics; bioengineering; biology; chemical engineering; chemistry; civil engineering; computing and mathematical sciences; computation and neural systems; computer science; control and dynamical systems; electrical engineering; environmental science and engineering; geobiology; geochemistry; geology; geophysics; materials science; mathematics; mechanical engineering; medical engineering; neurobiology; physics; planetary science; social sciences; and space engineering.

Jointly engaged with faculty to complete innovative research at the forefront of each of these fields, graduate students sustain Caltech's atmosphere of intellectual curiosity and creative activity.

Caltech admits students working toward the degree of Master of Science (M.S.), the degree of Engineer in certain fields, and the degree of Doctor of Philosophy (Ph.D.).

To learn more, see www.gradoffice.caltech.edu.

Postdoctoral and Senior Postdoctoral Scholars*

More than 500 early-career scientists and engineers conduct research at Caltech as postdoctoral scholars. In addition, the Jet Propulsion Laboratory (administered by Caltech) hosts postdoctoral scholars whose studies cover many aspects of earth, planetary, astrophysical, and technology research. All scholars work under the supervision of professorial faculty members or JPL researchers.

* Information for newly appointed postdoctoral scholars is available through Human Resources (<https://hr.caltech.edu/work/postdocs>) and the Caltech Postdoctoral Association (www.cpa.caltech.edu). Upon arrival, scholars should call a postdoctoral-scholar specialist in HR (626-395-6586) to make appointments to activate their positions. In virtually all circumstances, postdoctoral scholars must have earned a doctorate from a duly accredited institution.

HISTORICAL SKETCH

The California Institute of Technology developed from a local manual-arts school established in Pasadena in 1891 by the Honorable Amos G. Throop. Initially founded as Throop University, it was later renamed Throop Polytechnic Institute. Known as the California Institute of Technology since 1920, it has long enjoyed the support of the citizens of Pasadena. As early as 1908, the Board of Trustees had as members Dr. Norman Bridge, Arthur H. Fleming, Henry M. Robinson, J. A. Culbertson, C. W. Gates, and Dr. George Ellery Hale. These men dedicated their time, their minds, and their fortunes to transforming a modest vocational school into a university capable of attracting to its faculty some of the world's most eminent scholars and scientists.

George Ellery Hale, astronomer and first director of the Mount Wilson Observatory, foresaw the development in Pasadena of a distinguished institution of engineering and scientific research. Hale knew that modern, well-equipped laboratories were essential to such an institution's development, but he stressed to his fellow trustees that the focus was to be on men, not machines. "We must not forget," he wrote in 1907, "that the greatest engineer is not the man who is trained merely to understand machines and apply formulas, but is the man who, while knowing these things, has not failed to develop his breadth of view and the highest qualities of his imagination. No creative work, whether in engineering or in art, in literature or in science, has been the work of a man devoid of the imaginative faculty."

The realization of these aims meant specializing, so the trustees decided in 1907 to discontinue the elementary school, the business school, the teacher-training program, and the high school, leaving only a college of science and technology that conferred Bachelor of Science degrees in electrical, mechanical, and civil engineering.

In 1910 Throop Polytechnic Institute moved from its crowded

quarters in the center of Pasadena to a new campus of 22 acres on the southeastern edge of town, the gift of Arthur H. Fleming and his daughter Marjorie. The president, Dr. James A. B. Scherer, and his faculty of 16 members opened the doors to 31 students that September. When, on March 21, 1911, Theodore Roosevelt delivered an address at Throop Institute, he declared, "I want to see institutions like Throop turn out perhaps ninety-nine of every hundred students as men who are to do given pieces of industrial work better than any one else can do them; I want to see those men do the kind of work that is now being done on the Panama Canal and on the great irrigation projects in the interior of this country—and the one-hundredth man I want to see with the kind of cultural scientific training that will make him and his fellows the matrix out of which you can occasionally develop a man like your great astronomer, George Ellery Hale."

It would have surprised Roosevelt to know that within a decade the little Institute, known from 1913 as Throop College of Technology, would have again set its sights higher, leaving to others the training of more efficient technicians and concentrating its own efforts on Roosevelt's "hundredth man." On November 29, 1921, the trustees declared it to be the express policy of the Institute to pursue scientific research of the greatest importance and at the same time "to continue to conduct thorough courses in engineering and pure science, basing the work of these courses on exceptionally strong instruction in the fundamental sciences of mathematics, physics, and chemistry; broadening and enriching the curriculum by a liberal amount of instruction in such subjects as English, history, and economics; and vitalizing all the work of the Institute by the infusion in generous measure of the spirit of research."

Three men were responsible for the change in the Institute. George Ellery Hale still held to his dream. Arthur Amos Noyes, professor of physical chemistry and former acting president of the Massachusetts Institute of Technology, served part of each year from 1913 to 1919 as professor of general chemistry and as research associate; then, in 1919, he resigned from MIT to devote himself full-time to Throop as director of chemical research. In a similar way Robert Andrews Millikan began, in 1916–17, to spend a few months a year at Throop as director of physical research. Shortly after the school was renamed in 1920, Scherer resigned as president. In 1921, when Dr. Norman Bridge agreed to provide a research laboratory in physics, Millikan resigned from the University of Chicago and became administrative head of the Institute as well as director of the Norman Bridge Laboratory.

The great period of the Institute's life began, then, under the guidance of three men of vision—Hale, Noyes, and Millikan. They were distinguished research scientists who soon attracted graduate students. In 1920 the enrollment was nine graduate students and 359 undergraduates with a faculty of 60; a decade later there were 138 graduate students, 510 undergraduates, and a faculty of 180. At the present time there are over 900 undergraduates, 1,200 graduate students, and some 300 professorial faculty and 700 postdoctoral scholars.

The Institute also attracted financial support from individuals, corporations, and foundations. In January 1920 the endowment had reached half a million dollars. In February of that year, it was announced that \$200,000 had been secured for research in chemistry and a like amount for research in physics. Other gifts followed from trustees and friends who could now feel pride in the Institute as well as hope for its future. The Southern California Edison Company provided a high-voltage laboratory with the million-volt Sorensen transformer. Philanthropic foundations bearing the names of Carnegie, Rockefeller, and Guggenheim came forth with needed help when new departments or projects were organized.

In 1923 Millikan received the Nobel Prize in Physics. He had attracted to the Institute such men as Charles Galton Darwin, Paul Epstein, and Richard C. Tolman. The first Ph.D. was awarded in 1920. In 1924, the degree was awarded to nine candidates.

It was inevitable that the Institute would expand upon its fields; it could not continue to be merely a research and instructional center in physics, chemistry, and engineering. But the trustees pursued a cautious and conservative policy, not undertaking to add new departments except when the work done in them would be at the same high level as that in physics and chemistry. In 1925 a gift of \$25,000 from the Carnegie Corporation of New York made possible the opening of a department of instruction and research in geology. A seismological laboratory was constructed, and Professors John P. Buwalda and Chester Stock came from the University of California to lead the work in the new division.

That same year, William Bennett Munro, chairman of the division of history, government, and economics at Harvard, joined the Institute faculty. Offerings in economics, history, and literature were added to the core of undergraduate instruction.

In 1928 Caltech began its program of research and instruction in biology. Thomas Hunt Morgan became the first chairman of the new Division of Biology and a member of Caltech's Executive Council. Under Morgan's direction, the work in biology developed rapidly, especially in genetics and biochemistry. Morgan received the Nobel Prize in 1933.

The Guggenheim Graduate School of Aeronautics was founded at Caltech in the summer of 1926, and a laboratory was built in 1929, but courses in theoretical aerodynamics had been given at the Institute for many years by professors Harry Bateman and Paul Epstein. As early as 1917, the Throop Institute had constructed a wind tunnel in which, the catalog boasted, constant velocities of 4 to 40 miles an hour could be maintained, "the controls being very sensitive." The new program, under the leadership of Theodore von Kármán, included graduate study and research at the level of the other scientific work at the Institute, and what is now known as GALCIT (Graduate Aerospace Laboratories at the California Institute of Technology) was soon a world-famous research center in aeronautics.

In 1928, George Ellery Hale and his associates at the Mount Wilson

Observatory developed a proposal for a 200-inch telescope and attracted the interest of the General Education Board of the Rockefeller Foundation in providing \$6 million for its construction. The board proposed that the gift be made, and Caltech agreed to be responsible for the construction and operation. The huge instrument was erected on Palomar Mountain and began operation in 1948. Teaching and research in astronomy and astrophysics thus became a part of the Caltech program.

From the summer of 1940 until 1945, Caltech devoted an increasingly large part of its personnel and facilities to furthering the national defense and war effort. Caltech's work during this period fell mainly into two categories: special instructional programs and weapons research. The research and development work was carried out, for the most part, under nonprofit contracts with the Office of Scientific Research and Development. Rockets, jet propulsion, and antisubmarine warfare were the chief fields of endeavor. The Jet Propulsion Laboratory in the upper Arroyo Seco continues, under Institute management, to conduct a large-scale program of research for the National Aeronautics and Space Administration and other agencies in the science and technology of robotic space exploration.

In the 1950s, in response to the growing technological component, and complexity, of societal problems, the Institute began to expand the fields in which it had substantial expertise. In the late 1960s and early 1970s, the Institute added to its faculty several economists and political scientists who initiated theoretical and applied studies of interdisciplinary issues. A graduate program in social sciences was added in 1972. Caltech students could now engage their talents in the development of the basic scientific aspects of economics and political science, and begin to use the principles from these sciences together with those from the physical sciences to formulate and address public policies.

In 1945 Robert A. Millikan retired as chairman of the Executive Council, but he served as vice chairman of the Board of Trustees until his death in 1953. Dr. Lee A. DuBridge became president of Caltech on September 1, 1946. Formerly chairman of the physics department and dean of the faculty at the University of Rochester, he came to the Institute after working for five years as wartime director of the MIT Radiation Laboratory—and remained for 22 years.

DuBridge was also committed to the concept of a small, select institution offering excellence in education. Facts and figures are only part of the story, but the statistical record of change during the DuBridge administration indicates how he held to that concept. The 30-acre campus of 1946 grew to 80 acres; the \$17 million endowment grew to more than \$100 million; the faculty of 260 became 550; the number of campus buildings increased from 20 to 64; and the budget went from something less than \$8 million to \$30 million. But enrollment remained relatively constant. In 1946 the total number of students, graduate and undergraduate, was 1,391. In 1968, the year DuBridge left, it was 1,492.

Dr. Harold Brown came to Caltech as president in 1969. A physicist who had received his Ph.D. from Columbia in 1949, he had suc-

ceeded Dr. Edward Teller as director of the University of California's Lawrence Radiation Laboratory in Livermore in 1960. President Lyndon Johnson named Brown Secretary of the Air Force in 1965, and he came to the Institute from that office. Six new campus buildings were dedicated under Brown's administration, and a major development campaign for \$130 million was under way when he resigned in 1977 to become Secretary of Defense under President Carter.

With Brown's departure, Robert F. Christy became Acting President, and served in that capacity from 1977 to 1978, while continuing to serve as the Institute's Vice President and Provost.

Dr. Marvin L. Goldberger was appointed president in 1978. He had received his B.S. at the Carnegie Institute of Technology (now Carnegie Mellon University) and his Ph.D. at the University of Chicago. He came to Caltech from Princeton University, where he was the Joseph Henry Professor of Physics. Among the major accomplishments of the Goldberger administration were the addition of three new laboratories, the acquisition of a \$70 million grant for construction of the W. M. Keck Observatory to house the world's most powerful optical telescope, and a \$50 million pledge for the establishment of the Beckman Institute. Goldberger resigned in 1987 to become director of the Institute for Advanced Study in Princeton, New Jersey.

In the fall of 1987, Dr. Thomas E. Everhart became president, coming to Caltech from his position as chancellor at the University of Illinois at Urbana-Champaign. Everhart graduated magna cum laude with an A.B. in physics from Harvard, received his M.Sc. in applied physics from UCLA, and earned a Ph.D. in engineering from Cambridge University. He had gained international recognition for his work in the development of electron microscopy, and he had also done research on electron beams as applied to the analysis and fabrication of semiconductors. Everhart retired as president in October 1997, but he retains a faculty position as emeritus professor of electrical engineering and applied physics. During his tenure in office, he oversaw construction of the Keck Observatory in Hawaii, the Moore Laboratory of Engineering, Avery House, the Braun Athletic Center, the Sherman Fairchild Library, and the Beckman Institute, and he directed the successful completion of a \$350 million campaign for Caltech.

In October 1997, Dr. David Baltimore assumed the presidency of the Institute. One of the world's leading biologists, he received the 1975 Nobel Prize for his work in virology. Previously the Ivan R. Cottrell Professor of Molecular Biology and Immunology at MIT and founding director of its Whitehead Institute for Bio-medical Research, Baltimore had also served as president of Rockefeller University, where he earned his doctorate in 1964.

He played a pivotal role in creating a consensus on national science policy regarding recombinant DNA research, served as chairman of the National Institutes of Health (NIH) AIDS Vaccine Research Committee, and in 1999 was awarded the National Medal of Science by President Clinton.

In late 2006, Baltimore stepped down from the Caltech presidency, returning to his research as the Institute's Millikan Professor of Biology. During his administration, he successfully completed a \$100 million campaign to support biological research, resulting in the construction of the Broad Center for the Biological Sciences. He also launched a \$1.4 billion comprehensive campaign. By the time he returned to his lab, the campaign was near completion: three new laboratories had been funded, and the Thirty-Meter Telescope had passed its conceptual design review phase.

Dr. Jean-Lou Chameau became Caltech's eighth president in September 2006. The former provost and vice president for academic affairs at the Georgia Institute of Technology, he was also a Georgia Research Alliance Eminent Scholar and the Hightower Professor, and he earlier served as dean of the Georgia Tech College of Engineering. Chameau, whose research interests have included sustainable technology, environmental geotechnology, soil dynamics, earthquake engineering, and liquefaction of soils, received his undergraduate education in France and his Ph.D. in civil engineering from Stanford University.

During his tenure at the Institute, Chameau oversaw the conclusion of the largest fund-raising campaign in Caltech's history, and the construction of the Cahill Center for Astronomy and Astrophysics, the Annenberg Center for Information Science and Technology, the Schlinger Laboratory for Chemistry and Chemical Engineering, the Linde + Robinson Laboratory for Global Environmental Science, and the Earle M. Jorgensen Laboratory. Known for his commitment to cross-disciplinary collaboration, Chameau placed strong emphasis on improving the educational experience at Caltech, increasing diversity, and fostering research, entrepreneurial, and international opportunities for faculty and students. Chameau left Caltech in June 2013 to become president of the King Abdullah University of Science and Technology in Thuwal, Saudi Arabia.

Following Dr. Chameau's departure, Edward M. Stolper assumed the position of interim president from 2013-14, while continuing to serve as provost of the Institute.

On July 1, 2014, Dr. Thomas F. Rosenbaum took office as Caltech's ninth president. Dr. Rosenbaum was formerly the John T. Wilson Distinguished Service Professor of Physics at the University of Chicago, where he served as the University's provost for seven years. As provost, he had responsibility for a broad range of institutions and intellectual endeavors across the sciences, arts, and professional schools. He was deeply engaged with Argonne National Laboratory as the University's vice president for research and for Argonne National Laboratory from 2002 to 2006 and as a member of Argonne's Board of Governors.

Dr. Rosenbaum is an expert on the quantum mechanical nature of materials—the physics of electronic, magnetic, and optical materials at the atomic level—that are best observed at temperatures near absolute zero. His honors include an Alfred P. Sloan Research Fellowship, a Presidential Young Investigator Award, and the William McMillan Award for “outstanding contributions to condensed matter physics.”

Dr. Rosenbaum is an elected fellow of the American Physical Society, the American Association for the Advancement of Science, and the American Academy of Arts and Sciences. He received his bachelor's degree in physics with honors from Harvard University and both an M.A. and a Ph.D. in physics from Princeton University.

As Caltech has developed in effectiveness and prestige, it has attracted a steady flow of gifts for buildings, endowment, and current operations, in particular during the last campaign. In addition, substantial grants and contracts from the federal government and private sources support many research activities.

Caltech has more than 23,000 living alumni all over the world, many of them eminent in their fields of engineering, science, law, medicine, academe, and entrepreneurship.

Caltech Nobel Laureates

Robert A. Millikan	Physics	1923
Thomas Hunt Morgan	Physiology or Medicine	1933
Carl D. Anderson, B.S. '27, Ph.D. '30	Physics	1936
Edwin M. McMillan, B.S. '28, M.S. '29	Chemistry	1951
Linus Pauling, Ph.D. '25	Chemistry Peace Prize	1954 1962
William Shockley, B.S. '32	Physics	1956
George W. Beadle	Physiology or Medicine	1958
Donald A. Glaser, Ph.D. '50	Physics	1960
Rudolf Mössbauer	Physics	1961
Charles H. Townes, Ph.D. '39	Physics	1964
Richard Feynman	Physics	1965
Murray Gell-Mann	Physics	1969
Max Delbrück	Physiology or Medicine	1969
* David Baltimore	Physiology or Medicine	1975
Renato Dulbecco	Physiology or Medicine	1975
Leo James Rainwater, B.S. '39	Physics	1975
Howard M. Temin, Ph.D. '60	Physiology or Medicine	1975
William N. Lipscomb, Ph.D. '46	Chemistry	1976
Robert W. Wilson, Ph.D. '62	Physics	1978
Roger W. Sperry	Physiology or Medicine	1981
Kenneth G. Wilson, Ph.D. '61	Physics	1982
William A. Fowler, Ph.D. '36	Physics	1983
* Rudolph A. Marcus	Chemistry	1992
Edward B. Lewis, Ph.D. '42	Physiology or Medicine	1995

Douglas D. Osheroff, B.S. '67	Physics	1996
Robert C. Merton, M.S. '67	Economics	1997
* Ahmed H. Zewail	Chemistry	1999
Leland H. Hartwell, B.S. '61	Physiology or Medicine	2001
Vernon L. Smith, B.S. '49	Economics	2002
* Hugh David Politzer	Physics	2004
* Robert H. Grubbs	Chemistry	2005
Martin Karplus, Ph.D. '54	Chemistry	2013
Eric Betzig, BS '83	Chemistry	2014

* *In residence*

Caltech Crafoord Laureates

* Gerald J. Wasserburg	Geosciences	1986
Allen R. Sandage, Ph.D. '53	Astronomy	1991
Seymour Benzer	Biosciences	1993
* Don L. Anderson, M.S. '58, Ph.D. '62	Geosciences	1998
James E. Gunn, Ph.D. '66	Astronomy	2005
Walter H. Munk, B.S. '39, M.S. '40	Geosciences	2010
Andrea M. Ghez, MS '89, Ph.D. '93	Astronomy	2012

* *In residence*

BUILDINGS AND FACILITIES

On-Campus Buildings

Gates and Crellin Laboratories of Chemistry: first unit, 1917; second unit, 1927; third unit, 1937. The first two units were the gifts of Messrs. C. W. Gates and P. G. Gates of Pasadena; the third unit was the gift of Mr. and Mrs. E. W. Crellin of Pasadena. Gates (first unit), which was retired after suffering extensive damage in the 1971 earthquake, was rebuilt in 1983 as the Parsons-Gates Hall of Administration.

The Arnold and Mabel Beckman Laboratory of Chemical Synthesis, 1986, occupying portions of Crellin Laboratory (as well as portions of Church Laboratory for Chemical Biology), was built with funds provided by the Arnold and Mabel Beckman Foundation.

Norman Bridge Laboratory of Physics: first unit, 1922; second unit, 1924; third unit, 1925. The gift of Dr. Norman Bridge of Los Angeles, president of the Board of Trustees, 1896–1917.

High Voltage Research Laboratory, 1923. Built with funds provided by the Southern California Edison Company. Retired in 1959 with basic research completed and rebuilt in 1960 as the Alfred P. Sloan Laboratory of Mathematics and Physics.

Dabney Hall, 1928. The gift of Mr. and Mrs. Joseph B. Dabney of Los Angeles. A major renovation completed in 2004 was made possible by gifts from alumnus Capt. Tyler Matthew; alumnus Roger Davisson and his wife, Marjorie; alumnus William F. Horton and his wife, Glenna Berry-Horton; a distribution from the estate of alumnus George F. Smith; and a collective gift by the Caltech Associates.

William G. Kerckhoff Laboratories of the Biological Sciences: first unit, 1928; second unit, 1939; annex, 1948. The gift of Mr. and Mrs. William G. Kerckhoff of Los Angeles. He was a trustee in 1928.

Guggenheim Aeronautical Laboratory, 1929. Built with funds provided by the Daniel Guggenheim Fund for the Promotion of Aeronautics. A major renovation completed in 2008 was made possible by many private supporters, including Distinguished Alumnus Joe Charyk and his wife, Edwina; Distinguished Alumnus Allen Puckett and his wife, Marilyn; and alumnus Gordon Cann, through his estate.

Athenaeum, 1930. A clubhouse for the teaching, research, and administrative staffs of the Institute and the Huntington Library, Art Collections, and Botanical Gardens, for the Associates of the California Institute of Technology, and for others who have demonstrated their interest in advancing the objectives of the Institute. The gift of Mr. and Mrs. Allan C. Balch of Los Angeles. He was president of the Board of Trustees, 1933–43.

Undergraduate Houses, 1931. With the support of many individuals, including alumni Alexander Lidow, Richard Beatty, and Ray Sidney, these houses were restored. They reopened in 2007.

Blacker House. The gift of Mr. and Mrs. R. R. Blacker of Pasadena.

Dabney House. The gift of Mr. and Mrs. Joseph B. Dabney of Los Angeles.

Fleming House. Built with funds provided by some 20 donors and named in honor of Mr. Arthur H. Fleming of Pasadena, president of the Board of Trustees, 1917–33.

Ricketts House. The gift of Dr. and Mrs. Louis D. Ricketts of Pasadena.

W. K. Kellogg Radiation Laboratory, 1932. The gift of Mr. W. K. Kellogg of Battle Creek, Michigan.

Linde + Robinson Laboratory for Global Environmental Science, 1932 and 2011. The former Henry M. Robinson Laboratory of Astrophysics (1932) was built with funds provided by the International

Education Board and the General Education Board, and named in honor of Mr. Henry M. Robinson of Pasadena, member of the Board of Trustees, 1907–37, and of the Executive Council of the Institute. An extensive renovation transformed the building into the Linde + Robinson Laboratory for Global Environmental Science (2011), renamed in honor of a contribution by Vice Chair of the Board of Trustees and alumnus Ronald K. Linde and his wife, Maxine.

Charles Arms Laboratory of the Geological Sciences, 1938. The gift of Mr. and Mrs. Henry M. Robinson of Pasadena, in memory of Mrs. Robinson's father, Mr. Charles Arms.

Seeley W. Mudd Laboratory of the Geological Sciences, 1938. The gift of Mrs. Seeley W. Mudd of Los Angeles, in memory of her husband.

Charles C. Gates, Jr.–Franklin Thomas Laboratory of Engineering: first unit, 1945; second unit, 1950; complete renovation, 2015. Funds for the first unit were allocated from the Eudora Hull Spalding Trust. The laboratory is named after two devoted stewards of Caltech: Charles C. Gates Jr. (1921–2005), businessman, philanthropist, and longtime Caltech trustee; and Franklin Thomas (1885–1952), civil engineering professor, division chair, and dean of students. The renovation was generously supported by the Gates Frontiers Fund through the vision of Diane G. Wallach and John S. Gates, together with the Fred L. Hartley Family Foundation, James E. Hall (BS '57) and his wife, Sandy, and Li-San Hwang (PhD '65) and his wife, Anne.

Alumni Swimming Pool, 1954. Provided by the Alumni Fund through contributions from the alumni of the Institute.

Scott Brown Gymnasium, 1954. Built with funds provided by the trust established by Mr. Scott Brown of Pasadena and Chicago, who was a member and director of the Caltech Associates.

Norman W. Church Laboratory for Chemical Biology, 1955. Built with funds provided through a gift and bequest by Mr. Norman W. Church of Los Angeles, who was a member of the Caltech Associates.

Eudora Hull Spalding Laboratory of Engineering, 1957. Built with funds allocated from the Eudora Hull Spalding Trust.

Archibald Young Health Center, 1957. The gift of Mrs. Archibald Young of Pasadena, in memory of her husband, who was a life member and officer of the Caltech Associates, 1926–56.

Physical Plant Building and Shops, 1959. Built with funds provided by many donors.

Gordon A. Alles Laboratory for Molecular Biology, 1960. Built with the gift of Dr. Gordon A. Alles of Pasadena, an Institute research associate in biology, an alumnus, and a member of the Caltech Associates, 1947–63; and with funds provided by the National Institutes of Health, Health Research Facilities Branch.

Undergraduate Houses, 1960. Built with funds provided by the Lloyd Foundation and other donors.

Lloyd House. Named in memory of Mr. Ralph B. Lloyd and his wife, Mrs. Lulu Hull Lloyd, of Beverly Hills. He was a member of the Board of Trustees, 1939–52.

Page House. Named in honor of Mr. James R. Page of Los Angeles, a member of the Board of Trustees, 1931–62, and chairman, 1943–54.

Ruddock House. Named in honor of Mr. Albert B. Ruddock of Santa Barbara, a member of the Board of Trustees, 1938–71, and chairman, 1954–61.

Harry Chandler Dining Hall, 1960. The gift of the Chandler family, the Pfaffinger Foundation, and the Times Mirror Company of Los Angeles.

W. M. Keck Engineering Laboratories, 1960. The gift of the W. M. Keck Foundation and the Superior Oil Company of Los Angeles.

Alfred P. Sloan Laboratory of Mathematics and Physics, 1960. Formerly the High Voltage Research Laboratory, 1923. Rebuilt in 1960 with funds provided by the Alfred P. Sloan Foundation.

Graduate Houses, 1961:

Braun House. Built with funds provided by the trustees of the Carl F Braun Trust Estate, in his memory.

Marks House. The gift of Dr. David X. Marks of Los Angeles.

Kármán Laboratory of Fluid Mechanics and Jet Propulsion, 1961. The gift of the Aerojet-General Corporation, named in honor of Dr. Theodore von Kármán, professor of aeronautics at the Institute, 1929–49.

Firestone Flight Sciences Laboratory, 1962. The gift of the Firestone Tire and Rubber Company.

Winnett Student Center, 1962. The gift of Mr. P. G. Winnett of Los Angeles, a member of the Board of Trustees, 1939–68. Winnett houses the Caltech Store, the Red Door Café, and Caltech Wired.

Beckman Auditorium, 1964. The gift of Dr. Arnold O. and Mabel Beckman of Corona del Mar. The late Dr. Beckman, an alumnus, was an Institute faculty member from 1928 to 1939. He joined the Board

of Trustees in 1953, was chairman, 1964–74, and was chairman emeritus until his death in 2004.

Harry G. Steele Laboratory of Electrical Sciences, 1965. Built with funds provided by the Harry G. Steele Foundation and the National Science Foundation.

Central Engineering Services Building, 1966.

Robert A. Millikan Memorial Library, 1967. Built with a gift from Dr. Seeley G. Mudd and named in honor of Dr. Robert Andrews Millikan, director of the Bridge Laboratory of Physics and chair of the Executive Council of the Institute, 1921–45.

Arthur Amos Noyes Laboratory of Chemical Physics, 1967. Built with funds provided by the National Science Foundation and Mr. Chester F. Carlson, an alumnus, and named in honor of Dr. Arthur Amos Noyes, director of the Gates and Crellin Laboratories of Chemistry and chair of the Division of Chemistry and Chemical Engineering, 1919–36.

Central Plant, 1967.

George W. Downs Laboratory of Physics and Charles C. Lauritsen Laboratory of High Energy Physics, 1969. The Downs wing was built with funds provided by Mr. George W. Downs and the National Science Foundation. The Lauritsen wing was built with Atomic Energy Commission funds and named in honor of Dr. Charles C. Lauritsen, a member of the Institute faculty, 1930–68.

Keith Spalding Building of Business Services, 1969. Named in honor of Mr. Keith Spalding, Caltech trustee, 1942–61.

Donald E. Baxter, M.D., Hall of the Humanities and Social Sciences, 1971. Built with funds provided by Mrs. Delia B. Baxter of Atherton and named in honor of her late husband, Donald E. Baxter, M.D. Additional funds were given by the U.S. Department of Health, Education and Welfare. Dr. and Mrs. Simon Ramo provided funds for the completion of **Ramo Auditorium** within the hall. Dr. Ramo is a life member of the Board of Trustees.

The Earle M. Jorgensen Laboratory of Information Science, 1971. Built with the gift of Mr. and Mrs. Earle M. Jorgensen, with additional funds provided by the Booth-Ferris Foundation and other private donors. Mr. Jorgensen was a member of the Board of Trustees, 1957–99. A full remodeling of the building was completed in June 2012 through funding provided by the Joint Center for Artificial Photosynthesis/Department of Energy, Lynda and Stewart Resnick through the Resnick Sustainability Institute, Gordon and Betty

Moore and the Gordon & Betty Moore Foundation, the Ahmanson Foundation, and the Provost's Office.

The Mabel and Arnold Beckman Laboratories of Behavioral Biology, 1974. The gift of Dr. Arnold O. and Mabel Beckman of Corona del Mar. The late Dr. Beckman was chairman emeritus of the Board of Trustees.

Seeley G. Mudd Building of Geophysics and Planetary Science, 1974. Built with funds provided by Dr. Seeley G. Mudd, Mrs. Roland Lindhurst, Mr. and Mrs. Ross McCollum, Mr. and Mrs. Henry Salvatori, and the U.S. Department of Health, Education, and Welfare.

Clifford S. and Ruth A. Mead Memorial Undergraduate Chemistry Laboratory, 1981. Built with funds allocated from the Clifford S. and Ruth A. Mead Memorial Building Fund.

Thomas J. Watson, Sr., Laboratories of Applied Physics, 1982. Built with funds provided by the Watson family and other private donors. Thomas J. Watson, Jr., was a member of the Board of Trustees, 1961–92.

Braun Laboratories in Memory of Carl F and Winifred H Braun, 1982. Built with funds provided by the Braun family, other private donors, and the National Cancer Institute. Various members of the Braun family have served on Caltech's Board of Trustees.

Parsons-Gates Hall of Administration, 1983. Formerly Gates Laboratory of Chemistry, 1917. Rebuilt in 1983 with funds provided by the Ralph M. Parsons Foundation and the James Irvine Foundation.

Athletic Facility, 1984. Built with funds provided by the Carl F Braun Trust and the Braun Foundation.

Catalina Graduate Apartment Complex, 1984, 1986, 1988. Four of the buildings have been named for Max and Ruth Alcorn, Frank and Elizabeth Gilloon, Fred and Marvis Maloney, and William C. and Verna Rockefeller, honoring their generosity to Caltech.

Infrared Processing and Analysis Center, 1986. Renamed the **David W. Morrisroe Astroscience Laboratory**, 1995. Second-floor addition built with funds provided by the late Dr. Arnold O. Beckman, chairman emeritus of the Board of Trustees.

Wilson Avenue North Parking Structure, 1987.

Beckman Institute, 1989. Built with funds provided by the Arnold

and Mabel Beckman Foundation and other private donors. The late Dr. Arnold O. Beckman was chairman emeritus of the Board of Trustees.

Braun Athletic Center, 1992. Built with funds provided by the Braun family.

Holliston Avenue Parking Structure/Satellite Utility Plant, 1993.
The Gordon and Betty Moore Laboratory of Engineering, 1996. Built with funds provided by Dr. and Mrs. Gordon Moore. Dr. Moore is an alumnus, and a chairman emeritus of the Board of Trustees. Betty Moore is an honorary life trustee.

Avery House, 1996. Built with funds provided by Mr. R. Stanton Avery, who was a member of the Board of Trustees from 1971 until his death in 1997. He had been chairman, 1974–85, and chairman emeritus since 1986.

Sherman Fairchild Library of Engineering and Applied Science, 1997. Built with funds provided by the Sherman Fairchild Foundation.

Space Infrared Telescope Facility Science Center, 1998. Renamed the **Spitzer Space Telescope Science Center**, 2003. Located within the **Keith Spalding Building of Business Services**.

Powell-Booth Laboratory for Computational Science, 1999. Formerly the Willis H. Booth Computing Center, 1963, constructed with support from the Booth-Ferris Foundation and the National Science Foundation. Renovated in 1999 with grants from the Charles Lee Powell Foundation, the National Science Foundation, and the Booth-Ferris Foundation.

Wilson Avenue South Parking Structure, 1999.

Center for Student Services, the Keck Wing, 2000. Originally the Keck Graduate House, built with funds provided by the William M. Keck, Jr., Foundation, 1961.

Center for Student Services, the Mosher-Jorgensen Wing, 2002. Originally the Mosher-Jorgensen Graduate House, built with funds provided by Mr. Samuel B. Mosher and Mr. Earle M. Jorgensen, both of Los Angeles. Mr. Jorgensen was a member of the Board of Trustees, 1957–99.

Financial Services Building, 2000.

Broad Center for the Biological Sciences, 2002. Made possible by a lead gift from Eli and Edythe Broad. Eli Broad is a member of the Board of Trustees.

California Parking Structure, 2005.

Cahill Center for Astronomy and Astrophysics, 2009. Made possible by a lead gift from Charles Cahill in honor of his late wife, Aniko Dér Cahill, and by gifts from trustee and alumnus Fred Hameetman and his wife, Joyce, alumnus Michael Scott, and other private individuals and foundations.

Walter and Leonore Annenberg Center for Information Science and Technology, 2009. Built with a lead gift from the Annenberg Foundation and with funds provided by Life Trustee Stephen Bechtel, Jr., and other private donors.

Warren and Katharine Schlinger Laboratory for Chemistry and Chemical Engineering, 2010. Built with funds provided by alumnus Warren Schlinger and his wife, Katharine, a former Caltech employee, along with other private donors.

W. M. Keck Center, 2013. The Keck Center is the home of the Keck Institute for Space Studies (KISS) and features conference meeting room space suitable for the Caltech Board of Trustees, incorporating the historic Tolman-Bacher House within the grounds. The 2013 renovation/construction project was supported with funds from the W.M. Keck Foundation and Caltech.

Caltech Childcare Center, 2014. The Caltech Childcare Center is a new facility located on the South Campus to provide day care space for children of the Caltech community.

Off-Campus Facilities

William G. Kerckhoff Marine Biological Laboratory, 1930, Corona del Mar. Rehabilitated with funds provided by the National Science Foundation in 1966.

Jet Propulsion Laboratory (JPL), 1944, 4800 Oak Grove Drive, Pasadena. Administered by the Institute; owned and supported by the National Aeronautics and Space Administration.

Palomar Observatory, 1948, San Diego County. Site of the 200-inch Hale Telescope (1948) and the 48-inch Schmidt telescope (1949), built by the Institute with funds from the Rockefeller Foundation. The Schmidt was named the Samuel Oschin Telescope in 1987 in honor of benefactor Samuel Oschin of Los Angeles.

Owens Valley Radio Observatory, 1958, Big Pine. Built with funds provided by the Winnett Foundation, the Office of Naval Research, the National Science Foundation, and the Oscar G. and Elsa S. Mayer Charitable Trust.

Big Bear Solar Observatory, 1969, Big Bear Lake. Built with funds provided by the National Science Foundation and the Max C. Fleischmann Foundation of Nevada. (Operated by the New Jersey Institute of Technology.)

Caltech Submillimeter Observatory (CSO), 1986, Mauna Kea, Hawaii. Built with funds provided by the National Science Foundation and the Kresge Foundation.

W. M. Keck Observatory, Keck I (1991), Keck II (1996); Mauna Kea, Hawaii. Built with funds provided by the W. M. Keck Foundation. Site of the two 10-meter Keck Telescopes.

Georgina and William Gimbel Building, Caltech Submilli-meter Observatory, 1996, Hilo, Hawaii. Built with funds provided by Mr. and Mrs. William Gimbel, members of the Caltech Associates.

Laser Interferometer Gravitational-Wave Observatory (LIGO), 1999, Hanford, Washington, and Livingston, Louisiana. Built with funds provided by the National Science Foundation.

Beckman Institute

Opening its doors in 1990, the Beckman Institute has been a major addition to Caltech. The mission of the scientists working there is to invent new methods, materials, and instrumentation for fundamental research in biology and chemistry that will open the way for novel applications of scientific discoveries to human needs.

Caltech Center for Diversity (CCD)

The Caltech Center for Diversity (CCD) is responsible for the campus' initiatives associated with access, equity and inclusion and campus-wide inclusive excellence. The CCD provides programs and services that meet the specific needs of Women, Lesbian, Gay, Bisexual, Transgendered and Gender Queer/Questioning (LGBTQ), Underrepresented and Ally communities on campus. The CCD's stated mission is to:

- Promote and provide access to admission information and campus resources;
- Support activities that enhance the inclusion of women, underrepresented, underserved and minorities (URM) and lesbian, gay, bi-sexual, transgender and questioning (LGBTQ) in all aspects of campus life; and
- Collaborate with the Caltech community and student affairs support services (both on and off campus) to ensure students are actively engaged and able to access resources that help them achieve their academic and personal goals and ultimately graduate from Caltech.

The Center provides oversight and support for clubs and associations focused on diversity in science and engineering such as the Society of Hispanic Professional Engineers (SHPE), National Society

of Black Engineers (NSBE), Society of Women Engineers (SWE) and participation in the National Organization of Gay, and Lesbian Scientists and Technical Professionals, Inc. (NOGLSTP). If you are interested in getting involved with CCD activities please check the center website (www.diversitycenter.caltech.edu).

Center for Data-Driven Discovery

The mission of the Center for Data-Driven Discovery (CD3) is to assist Caltech researchers with the projects that are data-intensive and computational in nature. It is a part of a joint initiative on “data science” with the Center for Data Science and Technology at JPL.

The central focus of CD3 is the methodologies for handling and analysis of large and complex data sets, in facilitating the data-to-discovery process. It is about applications of data-driven computing in various scientific domains, such as biology, physics, astronomy, geophysics, etc.

CD3 also serves as a catalyst for new collaborations and projects between different scientific disciplines, and between the campus and JPL. Of a particular interest is the sharing and transfer of methodologies, where the solutions from one field can be reapplied in another one. The scientific staff of the Center has an expertise that spans various aspects of computational science, and works on a collaborative basis with research groups on the campus and at JPL, in helping develop novel, exploratory projects, and in the execution of larger, funded projects that involve data-intensive computing.

The Center also helps in the development of educational materials for training students in the research skills that are increasingly necessary for data-rich science in the 21st century.

Center for Teaching, Learning, & Outreach (CTLO)

The Center for Teaching, Learning, & Outreach (<http://teachlearn.caltech.edu>) offers programs and services in support of Caltech’s multifaceted educational efforts, including undergraduate and graduate courses and curricula, formal and informal learning, and educational outreach partnerships with K-12 teachers and students.

With a commitment to evidence and innovation, CTLO focuses on:

- **Instructor Support:** Providing support for effective course design and teaching methods to university faculty and teaching assistants (TAs). Topics regularly addressed through individual consultations, training programs, workshops, and courses, include in-class techniques, choice and use of instructional technologies, feedback on teaching, and research on teaching in the disciplines.
- **Student Learning:** Fostering opportunities for students to grow as teachers, mentors, and leaders. CTLO oversees the Caltech Project for Effective Teaching (CPET), a graduate student group offering seminars on teaching and learning, as well as the Certificates of Interest and Practice in University Teaching, and collaborates with the undergraduate Academics and Research

Committee (ARC) on course video capture, course ombuds, and other initiatives.

- **Educational Outreach:** Helping faculty and students in developing K-12 outreach programs, including collaborations with schools and districts in Pasadena and Greater Los Angeles. CTLO assists faculty with funding proposals with educational components, convenes educational outreach coordinators from across Caltech's divisions, and runs several signature Caltech educational outreach programs, such as Summer Research Connection and Community Science Academy.

Hixon Writing Center (HWC)

The Hixon Writing Center (HWC) at the California Institute of Technology promotes excellence in writing and communication. The HWC operates on the premise that writing is a mode of discovery and learning as well as a tool for communication, and thus strong writing skills are fundamental to inquiry, learning, and success across disciplines.

The HWC works actively with Caltech students, faculty, and the Caltech community. The HWC offers students the opportunity to meet with professional and peer tutors to discuss works-in-progress; these sessions help students accomplish short-term goals while they also promote the acquisition of skills that are valuable for long-term success. The HWC regularly holds presentations and workshops on communication-related topics that interest our students. HWC staff members are available to consult with Caltech faculty and TAs about best practices for incorporating, designing, and responding to writing assignments in courses across all disciplines. Finally, the HWC sponsors events and creates resources that support campus-wide discussions about the roles writing and communication play in teaching, learning, and research in science and engineering.

The HWC is a part of the division of Humanities and Social Sciences, and it is funded in part by a generous donation from Alexander P. and Adelaide F. Hixon. The HWC is open during the academic school year, and more information is available at writing.caltech.edu.

LIBRARIES

The Caltech Library helps enable the Institute fulfill its mission to expand human knowledge through research integrated with education. The Library maintains extensive electronic and print collections, a variety of study spaces, and a user-focused program of instruction and outreach to support student success at Caltech. Visit the Library's website, library.caltech.edu, to search library collections, access research guides, and get additional information about the library.

The Sherman Fairchild Library (SFL) is the main library on campus. SFL is complemented by three branch libraries: Humanities and

Social Sciences (Dabney), Astrophysics (Cahill), and Geology (North Mudd). SFL is open 24/5 (24/7 during exam weeks), and offers a range of collaborative and private study spaces including five bookable group study rooms and a new TechLab with 3D printers and scanners. Laptops, kindles, electronic kits and more can be borrowed through the Library's edevice lending program. All textbooks assigned for courses are available for short-term use through the Library's Course Reserves service.

The Library's Interlibrary Loan staff, located on the first floor of Millikan Memorial, can obtain books and articles not owned by Caltech Library at no charge to the requester and typically within 24 hours or less. A flexible collaboration and study space with large displays is available on the 9th floor of Millikan.

The Library's digital repository of research by Caltech authors includes CaltechTHESIS, where student work is preserved and made discoverable to Internet search engines. The Library also offers a binding service for student-authored works (PODS).

Archives and Special Collections

The Caltech Archives and Special Collections constitute rare and unique materials, and serve as the collective memory of the California Institute of Technology. We collect, organize, preserve and make accessible the institutional records, personal papers, documents, photographs, oral histories, historic apparatus and artifacts, and audiovisual media that tell the Institute's history. Among the over 300 manuscript collections can be found the personal and professional papers of 13 Nobel Prize winners and 14 National Medal of Science recipients. Our photo collection is comprised of over 10,000 photos that can be viewed online, as well as thousands more.

These research collections are available to the campus community for instructional and research purposes, as well as to qualified non-campus users by appointment. A collection overview and other pertinent information is available at our website, www.archives.caltech.edu. Our Reading Room hours are Monday through Friday, 8:30 am to 4:00 pm. All who wish to visit the Caltech Archives are requested to phone or write ahead to be sure of staff assistance and space availability.

UNDERGRADUATE RESEARCH

The Institute offers the opportunity for qualified students to engage in research early in their careers under the supervision of a faculty member. There are four principal avenues for undergraduate research: the senior thesis, the Summer Undergraduate Research Fellowships (SURF) program, research courses for academic credit, and research for pay under a faculty member's grant or contract. Students may combine these options but may not receive both pay and credit at the same time for the same piece of work.

The senior thesis involves original research under the mentorship of a faculty member, then documenting the methodology and accomplishments in scholarly form, and finally oral presentation of the results to an examination committee. This integrated effort develops research, writing, and presentation skills that together provide an excellent preparation for future graduate studies and/or professional life. Since senior thesis requirements vary by option, individual option representatives should be consulted.

The Summer Undergraduate Research Fellowships (SURF) program provides continuing undergraduate students the opportunity to work on an individual research project in a tutorial relationship with a mentor, usually a member of the Caltech/JPL research community, but occasionally a faculty member at another college or university. Students write research proposals in collaboration with their mentors. Proposals and recommendations are reviewed by the SURF administrative committee, and awards are made on the basis of reviewer recommendation and available funding. The work is carried out during a 10-week period in the summer. Students may attend weekly seminars presented by members of the Caltech faculty and JPL technical staff and may participate in professional development workshops. At the conclusion of the summer, SURFers submit a written report describing the project, methods, and results of their work. On the third Saturday of October, students make oral presentations of their projects at SURF Seminar Day. About 20 percent of the students publish their work in the open scientific literature. In 2015, SURF students received awards of \$6,000. Applications are available online at <http://www.surf.caltech.edu> and are due in mid-February. Awards are announced in early April. To be eligible, students must be continuing undergraduates and have a cumulative GPA of at least 2.0. Students must complete the third quarter at Caltech (or at another school under a program approved by a dean). Students must be eligible for fall term registration as of the end of the June Undergraduate Academic Standards and Honors (UASH) Committee reinstatement meeting and must not be on medical leave or under disciplinary sanction. For further information regarding this program, contact the Student-Faculty Programs Office, 330 Center for Student Services, (626) 395-2885, sfp@caltech.edu. Visit the Student-Faculty Programs website at <http://www.sfp.caltech.edu>.

Most options also offer undergraduate research courses in order to encourage research participation; students should consult listings and descriptions of opportunities. Students registering for a research course during the summer do not have to pay tuition.

STUDENT LIFE

Undergraduate Student Houses

Seven of the eight undergraduate student houses are situated on both sides of the Olive Walk near the southeastern end of the campus.

The original four—Blacker, Dabney, Fleming, and Ricketts—were built in 1931 from the plans of Mr. Gordon B. Kaufmann, in the Mediterranean style to harmonize with the adjacent Athenaeum. The other three, designed by Smith, Powell and Morgridge, were completed in 1960, and are named Lloyd, Page, and Ruddock.

Each of the houses is a separate unit with its own dining room and lounge, providing accommodations for between 65 and 100 students, depending on the house. Each has its own elected officers; a long history of self-governance gives students a great deal of influence over their living environments. There are three undergraduate Residential Life Coordinators (RLCs) in campus housing, situated in different houses. An RLC is a specially trained full-time university employee, specializing in college student development, community building, counseling, and crisis intervention. The RLCs supervise the Resident Associates (RAs) on programming and overall student wellness. The RLCs also assist Housing with the management and daily operations of the houses. Each house has one or more Resident Associates, who are typically graduate students. In addition to the student houses, the Institute maintains three apartment buildings, Marks/Braun House, and a number of houses on campus property. Typically two or three students share an apartment. Depending upon size, the off-campus houses have a capacity of four to ten students. These residences are all within a short walk of the campus and offer students greater privacy, a different lifestyle, and the opportunity to prepare their own meals.

Mail is delivered daily to the student mailboxes. Students should use their mailbox number, California Institute of Technology, Pasadena, CA 91126, to facilitate handling of mail at the campus post office.

For more information, please visit www.housing.caltech.edu.

Avery House

Made possible by a gift from trustee R. Stanton Avery, this innovative residential complex was designed by Moore, Ruble, Yudell and completed in September 1996. Located at the north end of the campus, Avery House has a Residential Life Coordinator, two Resident Associates, two faculty apartments and rooms for about 136 undergraduates. Its dining facilities, meeting rooms, lounges, and library are designed to encourage informal faculty-student interaction and to attract all members of the campus community to join in this interaction. Avery House hosts programs and social events that facilitate involvement between residents, and faculty in residence.

The Student Activities Center

The SAC is located in the basement of the south undergraduate housing complex and is open for student use 24 hours a day. The SAC provides office space for the officers of the undergraduate student government, working space for student publications, rehearsal space for musical activities, and space for many other student-oriented functions.

Whether students are interested in music, publications, student government, gaming, photography, or simply finding a room for their group to meet in, the SAC will probably have what is needed. The center also houses the South House laundry room and has several club rooms, a small library, a shop, and a movie screening room—most are open 24 hours.

Faculty-Student Relations

Faculty-student coordination and cooperation with regard to campus affairs are secured through the presence of students on faculty committees, by faculty-student conferences, and by other mechanisms.

Freshman Advisers

Each member of the freshman class is assigned a faculty advisor and is a member of a small advising group. The adviser follows the freshman's progress and provides advice on any questions or problems that the freshman may have.

Option Advisers

Each member of the three undergraduate upper classes is assigned an option adviser, a faculty member in the option in which the student is enrolled. The adviser takes an interest in the student's selection of courses and progress toward a degree, and, eventually, in assisting the student toward satisfactory placement in industry or in graduate school. Normally, the association between student and adviser is established before the beginning of the sophomore year and continues through graduation.

Athletics, Physical Education & Recreation (APER)

Caltech supports an extensive program of competitive athletics. As a member of NCAA Division III and the Southern California Intercollegiate Athletic Conference, Caltech participates in intercollegiate competition in nine men's and eight women's sports. All teams compete during a regular season to qualify for the conference tournament in their respective sport. Individual student-athletes and teams distinguishing themselves can earn the privilege of participating in NCAA regional and national championships.

Caltech also sponsors vigorous club sports programs and intramural competition. Club sports include Ultimate Frisbee, volleyball, badminton and soccer. Intramural competitions are contested by residence house teams in several sports, including soccer, dodgeball, kickball, Ultimate Frisbee, basketball, volleyball, and floorball. Approximately 25 percent of Caltech undergraduates participate in intercollegiate athletics and over 80 percent participate in some form of organized athletic competition each year.

Outdoor athletic facilities include an all-weather running track, a soccer field, a baseball diamond, eight tennis courts, and two 25-yard, eight-lane swimming pools. Indoor facilities include two full-size gymnasiums for basketball, volleyball, table tennis, fencing and bad-

minton; four racquetball courts; two squash courts; a 5,000-square-foot weight room and more than 55 pieces of cardio-respiratory equipment, including treadmills, exercise bikes and ellipticals; and a large multipurpose room for dance/aerobics, martial arts and a variety of group fitness courses.

The department is also responsible for management of Caltech's recreation programs and physical education curriculum.

More information can be found at GoCaltech.com

Interhouse Activities

The president of each undergraduate house represents that house on the Interhouse Committee (IHC), which handles any matters affecting the houses in general. The IHC works in conjunction with the APER department to conduct intramural competitions as described above and conducts its own Discobolus Trophy competition, in which a house may challenge the house holding the trophy to a mutually agreed upon contest.

ASCIT

The undergraduate student body forms the membership of a corporation known as the Associated Students of the California Institute of Technology, Inc., or ASCIT. Governed by a board of directors consisting of nine elected officers, it is involved in many aspects of student life, overseeing publication of the student newspaper, a directory, the yearbook, a research-opportunities handbook, a course review, and a literary magazine.

Besides overseeing many student publications and coordinating activities and policies, the ASCIT Board of Directors administers the corporation's finances. ASCIT sponsors a wide variety of special-interest clubs and programs, such as the student shop and the Students for the Exploration and Development of Space (SEDS).

The student government is active in campus affairs. The student members of each standing faculty committee ensure that undergraduate opinion is considered seriously. Excellent informal relations between students and faculty and between students and administration promote discussion of mutual concern and goodwill. Student-faculty conferences are held every other year and serve a very useful purpose to promote cooperation and communication.

Graduate Student Council

The Graduate Student Council (GSC) is the governing body for all graduate students at Caltech. The GSC provides funding for student clubs, publishes newsletters, and organizes and subsidizes various campus events and programs. For example, the GSC sponsors events for new students, hosts a graduate student formal, honors teaching and mentoring at Caltech and helps facilitate the Everhart Lecture Series, a series of lectures for outstanding graduate student researchers and presenters. Students interested in getting involved with, or contacting the GSC, please check the Graduate Student Council website.

Honor System

The Honor Code, embodied in the phrase “No member shall take unfair advantage of any other member of the Caltech community,” is the fundamental principle of conduct for all students and extends to all phases of campus life, including scholastic and extracurricular activities, relations among students, and relations between students and faculty. The Honor System is the most important tradition of the undergraduate student body. The Board of Control, which is composed of elected student representatives, is charged with monitoring the academic Honor System for undergraduates, investigating course work violations, and making recommendations to the Dean of Undergraduate Students. The Conduct Review Committee, composed of students, faculty and staff, hears cases involving non-academic Honor System and Institute policy violations for undergraduate students, and also makes recommendations to the Dean. At times the Undergraduate Dean of Students, or his/her designee, also considers cases involving the Honor System and Institute Policies for undergraduate students.

The Honor System is also an important part of graduate student life. The Graduate Honor Council (GHC) is the body responsible for reviewing alleged honor code violations with respect to coursework. The GHC investigates and hears a case, then forwards its recommendations to the Dean of Graduate Studies for final review and decision. The GHC consists of Co-Chairs and Honor Council Board Members. All Members of the Graduate Honor Council must be in good standing with the Office of Graduate Studies and must attend a formal training before they may serve on a case. Examples of honor code violations include, but are not limited to, plagiarism, violations of the collaboration policy in a class and/or using resources that were strictly prohibited for homework and/or exams. Incidents that are not handled by the GHC include accusations of research misconduct, which are handled by the Office of Research Compliance; grade disputes, which are handled by the Office of the Provost; and Institute Policy violations which are handled by the Office of the Dean of Graduate Studies or the appropriate administrative organization.

Student Body Publications

The publications of the student body include a weekly paper, *The California Tech*; an undergraduate research journal, *CURJ*; a literary magazine, *The Totem*; a student handbook, *the little t*, which gives a survey of student activities and organizations and serves as a campus directory; a yearbook, *The Big T*; an annual review of the quality of teaching in the various courses, and an undergraduate research opportunities handbook, *UROH*. These publications, staffed entirely by students, provide an opportunity for interested students to obtain valuable experience in creative writing, photography, artwork, reporting and editing, advertising, and business management.

Performing and Visual Arts

Performing and Visual Arts The Institute provides directors and facili-

ties for choirs, concert band, jazz band, symphony orchestra, numerous chamber music ensembles, guitar classes, a theater program, ceramics and visual arts classes. These activities are centered in the Music and Theater Arts houses on Hill Avenue along the eastern edge of campus. Rehearsals and performances are held mainly in Dabney Lounge and Ramo Auditorium.

Student Societies and Clubs

The Institute has more than 90 societies and clubs covering a wide range of interests. The American Chemical Society, the American Institute of Chemical Engineers, the American Society of Mechanical Engineers, and the Society of Women Engineers all maintain active student branches. There is a chapter of the National Society of Black Engineers, and the Caltech Latino Association of Students in Engineering and Science is a chapter of the Society of Hispanic Engineers.

The Institute has a chapter (California Beta) of Tau Beta Pi, the national scholarship honor society of engineering colleges. Each year the Tau Beta Pi chapter elects to membership students from the highest-ranking eighth of the junior class and the highest fifth of the senior class.

Special interests and hobbies are provided for by a broad and constantly changing spectrum of clubs, some informal but most formally recognized by Caltech through either ASCIT or the Graduate Student Council.

Student Shop

The student shop is located in the Physical Plant complex. It is equipped by the Institute, largely through donations, and is operated by students. Qualified students may work on private projects that require tools and equipment not otherwise available. All students who have completed an appropriate machine shop training course are eligible to apply for membership in the student shop. Instruction on specific machines and tools can be provided as needed. Yearly dues are collected for maintenance and tool replacement.

The Caltech Y

The Caltech Y is a unique nonprofit organization on campus. Founded by students for students, the Y challenges the Caltech community to see the world with a broader perspective and a deeper understanding of social issues. Through community service projects, outdoor adventures, social activities, and cultural events, the Y encourages students to become active participants during their years here. The Caltech Y helps students plan events, meetings, and initiatives on campus and provides the resources and equipment needed for successful programs. Some of the many Y-sponsored activities include the Y hike in the California Sierras, Alternative Spring Break, Make-a-Difference-Day, World Fest, the Social Activism Speaker Series, and the D.C. Science Policy Trip. The Y also provides services to the Caltech community, such as low-cost rentals on camping equipment, discounted tickets, and much more.

Religious Life

In addition to several groups active on campus, such as the Caltech Christian Fellowship, the Newman Center, and Hillel, houses of worship of many different denominations are within walking distance or are only a short drive from campus.

Public Events

Beckman and Ramo Auditoriums serve as the home of the professional performing arts programs on the Caltech campus. Each year, more than 50 lectures, outreach programs, performing arts events, and films are presented at Caltech. Tickets, often with discounts available, are offered to Caltech students for all events in Beckman and Ramo Auditoriums. Visit www.events.caltech.edu for more information.

Caltech Store

The Caltech Store is located on the ground floor of the Winnett Student Center. Owned and operated by the Institute, the store serves the students, faculty, and staff, carrying a stock of Caltech authors' books and other books, insignia merchandise, gift items, and school supplies. Located within the store are the Red Door Café and Caltech Wired computer store. The Red Door Café provides various types of coffee drinks and juices, along with other food items. Caltech Wired provides computers (including hardware and supporting software and instructional materials) that support Caltech's educational and research functions.

STUDENT HEALTH

Health Form

Prior to initial registration, each admitted student is **REQUIRED** to submit a completed Health Form that includes medical and immunization history and a physical examination. The Health Form is sent as part of the Orientation Packet at the time of notification of admission for incoming freshmen, and accepted graduate students are notified by e-mail to visit the Health Center website at <http://www.healthcenter.caltech.edu> to download the health form.

Student Health Services

ALL enrolled students can use the Health Center irrespective of the insurance they have. Enrolled students pay a health fee each semester to access the Health Center.

The Archibald Young Health Center provides the following services (1) clinic consultation and treatment of most medical problems by physicians and nurse practitioners (physician visits by appointment only and at prescribed hours); (2) referral to specialists; (3) laboratory test and some radiology test as ordered by the medical staff; (4) women's health services, including annual pap and contraceptive needs; (5) sexual health concerns, including STI screening; (6) prescription services for most medications and common vaccinations; (7) allergy injection services.

Spouses of students may enroll in our Spousal Program to access these same services once paying the Spousal Program fee. For more information about the Spousal Program, call the Health Center. A variety of health education handouts are also available. For more information, visit the Health Center's website at <http://www.healthcenter.caltech.edu> or call the clinic at 626-395-6393.

Student Health Insurance

Students have the option to waive Caltech's medical coverage provided they show proof of adequate coverage. The Caltech student health plan covers (with deductible and copay) hospital and surgical costs, as well as the cost of outpatient treatment for injury, illness, and psychotherapy. Students may continue coverage under the Caltech student health plan during the entire time they are enrolled as degree-seeking Caltech students. No matter what insurance you have as an enrolled student you may use the Health and Counseling Center.

CAREER DEVELOPMENT

Career Services

The Career Development Center (CDC) provides assistance to students in the areas of career planning and employment. Assistance is available in areas such as career choice, résumé preparation, interviewing, graduate school application, and job search strategies. Career and vocational interest tests can also be taken on the recommendation of one of the career counseling staff members.

General Information

All students are encouraged to visit and make use of the Career Development Center early in their student careers.

Walk-In Counseling

Several days a week, students can "walk in" to consult with a career counselor without an appointment. This allows students to deal with time-sensitive or quickly answered concerns without having to make an appointment.

CDC Online and the CDC Library

The CDC's website contains information about the center's programs and activities, as well as links to career, educational, and employment resources nationwide (<http://www.career.caltech.edu>). Students can schedule appointments for career counseling, register and post resumes for online recruiting, view work-study or tutoring job postings online. The CDC library contains information on graduate, and professional schools, employers, career options and job hunting skills.

Graduate and Professional School Advising

The CDC provides advice on applying to Ph.D. and master's programs in the sciences or applied sciences, economics, medicine,

General Information

public health, environmental sciences, business, law, and other fields. Workshops and individual advising are available on the graduate school admissions process, essay writing, and related topics. The CDC's library and website have helpful resources.

Pre-Health Careers Advising

Students planning to apply to medical, dental, veterinary, or pharmaceutical graduate school have access to a wide range of advising services through the CDC. Students can obtain relevant medical research experience through the Caltech summer preceptorship program, which has placements with hospitals in the LA area. The pre-health advisor is available to work with students throughout the process from freshman year to graduation.

Students planning to apply to graduate school or professional graduate degrees are encouraged to plan ahead and to utilize the resources of the CDC in making choices about and implementing choices related to graduate studies.

On-Campus Recruiting Program

Through the on-campus recruiting program, employment interviews are arranged by the CDC with companies that seek full-time employees pursuing B.S., M.S., Eng., or Ph.D. degrees. Many firms also recruit students for summer internships or jobs. All students, Caltech postdoctoral scholars, and recent alumni are eligible to participate.

Career Fairs

Each year two career fairs are organized by the CDC and held in October and January.

A diverse range of companies send representatives to campus to talk to Caltech undergraduates, graduate students, and postdoctoral scholars about permanent employment, summer jobs, or internship opportunities with students. Many firms hold information sessions and conduct on-campus interviews.

Work-Study and Employment Listings

Job listings are maintained in the Career Library and through the Techerlink Network for students seeking full-time, part-time (including tutoring positions), or work-study employment. Part-time employment provides students with the opportunity to help finance their education and to gain relevant work experience. One popular online resource is Caltech's tutoring service, through which Caltech students are hired to work as paid tutors for students attending high school in the local area. (See also the student employment section on page 204.)

Summer Internships and Jobs

Students are encouraged to establish a relationship with the CDC staff during the fall term to start the summer job process.

The CDC website has a special section on internships, many firms

recruit on campus or at the career fairs for interns, or list positions on Techerlink, the CDC online job listing resource. Students may wish to confer with a career counselor to develop a plan to find summer work that will support or complement long-term career objectives. The CDC provides job-search assistance, including résumé preparation advice, mock interview training, and advice on evaluating job offers. Many employers, eager to hire Caltech students, provide or supplement transportation and housing as part of their summer employment package.

Employment Experience of Recent Graduates

Each year the CDC surveys graduating students' future plans. Over several years, approximately 50 percent of undergraduates are accepted to graduate school programs, 30 percent accept employment, 10 percent have not accepted offers yet, and 10 percent pursue unconventional options, such as part-time work, part-time school, travel, a year off, etc. At the M.S. level, about 85 percent continue in graduate school, and the remainder accept employment. Of those receiving the Ph.D. degree, about 50 percent accept postdoctoral, faculty or other academic/research positions, about 40 percent accept positions outside of academia, and 10 percent pursue other options.

CALTECH ALUMNI ASSOCIATION

The mission of the Association is to promote the interests of Caltech in setting a world standard of academic excellence by strengthening the ties of goodwill and communication between the Institute, its alumni, and current students, and by maintaining programs to serve alumni needs. With 23,000 graduates, Caltech's relatively small alumni community has an outsized influence on science, business, and culture around the world. Membership in the Caltech Alumni Association can help you access the full potential of this unparalleled network.

Our programs and services include:

- Access to the Alumni Network, with resources to help you connect with alumni and support your career development;
- Reunion Weekend, an annual four-day event with nearly 80 activities, including thought-provoking lectures, private tours, house reunions, social events, and more;
- Seminar Day, where alumni and their guests are given a front-row seat to the latest research and discoveries taking place on campus;
- Alumni College, a one-day lecture series drawing Caltech faculty together to explore a theme or subject;
- Regional Events that bring the best of Caltech to your area, featuring presentations from Caltech faculty, exclusive tours, career networking opportunities, social events, and more;
- Travel/lifelong learning programs worldwide.

Additional benefits of membership include a subscription to

INTERNATIONAL STUDENT PROGRAMS

As the definitive immigration resource for international students, International Student Programs (ISP) is responsible for advising students on all immigration-related matters, such as visa acquisition, employment authorization, extensions of stay, and more. In addition, ISP provides programs that assist international students and their dependents in adjusting to life in the United States. ISP plans and promotes events that celebrate international education and cultures of the world, address cross-cultural adjustment, and provide opportunities for international students to establish a sense of community at Caltech. Prior to the fall term, ISP hosts International Student Orientation to provide an introduction to academic and social life at Caltech and in the United States. All incoming international students are required to participate. Please contact ISP at isp@caltech.edu for more information on current programs, or visit ISP online at www.international.caltech.edu.

AUDITING COURSES

Persons not regularly enrolled in the Institute may audit courses if they obtain the consent of the instructor in charge of the course, and the dean of undergraduate students or dean of graduate studies, as appropriate, and pay the required fee (contact the Bursar's Office for audit fee). The fees are nonrefundable.

Auditing cards may be obtained in the Registrar's Office.

Regularly enrolled students and members of the faculty are not charged for auditing. Auditing cards are not required, but the instructor's consent is necessary in all cases. No grades for auditors are reported to the Registrar's Office, and no official record is kept of the work done.

GRADES AND GRADING

All permanent grades recorded for freshmen during the first and second terms they are enrolled will be either P, indicating "passed," or F, indicating "failed." The temporary grade of I ("incomplete") may be used as it is for other students. The temporary grade of E may be given to freshmen as described below for other students. It may also be used in a continuing course if the performance of the freshman concerned is not significantly below the current passing level, and if the student is maintaining a steady and substantial improvement; an E given for this reason will be automatically changed to a P if the

freshman earns a P for the following term, and will change to an F if the student receives an F for the following term. The grade may not be used in this way for two successive terms nor for the last term of the course.

If a first-quarter or second-quarter freshman is enrolled in a course in which the instructor gives letter grades, the registrar will record P for all passing grades. No grades given to a freshman during the first and second quarter in which they are enrolled will be used in computing the cumulative grade-point average.

For all students beyond the first and second quarters of their freshman year, graduate and undergraduate, letter grades will ordinarily be used to indicate the character of the student's work: A, excellent; B, good; C, satisfactory; D, poor; E, conditional; F, failed; I, incomplete. P may also be used as described below under *Pass/Fail Grading*. In addition, grades of A+ and A-, B+ and B-, C+ and C-, and D+ may be used. In any situation in which no grade is reported, the grade shall be assumed to be F.

At their discretion, instructors may give students who have not completed their work for a course by the end of the term a grade of E. The grade E indicates deficiencies that may be made up without repeating the course. If the instructor does not specify a date on the grade report sheet for completion of the work, students receiving an E will have until Add Day of the following term to complete their work for that course. Instructors may, however, require the work for the course to be completed by an earlier date. If a student receives an E and does not complete the work by the date specified by the instructor or by Add Day, the grade will be changed to an F. Adequate time must be afforded to instructors to grade the work and to submit the final grade to the registrar.

It is the responsibility of a student receiving an E to confirm that the registrar has recorded the terms for satisfying the completion of the work in the course.

With the written permission of the instructor, a student may extend the E grade past Add Day of the following term, but doing so will cause an additional E grade to be registered. Each additional extension of the E will be until the date specified by the instructor or until Add Day of the following term, but in each case will require the written permission of the instructor and the registering of an additional E grade.

After an undergraduate student has been awarded the grade of E six times, he or she is not eligible to receive E grades in any subsequent term. A petition for an E in a subsequent term may be approved by the Undergraduate Academic Standards and Honors (UASH) Committee in an exceptional case. Such a petition requires the support of the instructor and the dean or associate dean of undergraduate students.

The grade I is given only in case of sickness or other emergency that justifies noncompletion of the work at the usual time. It is given at the discretion of the instructor, after approval by the dean or associate dean of students or the dean of graduate studies. The time period

within which the grade of I is to be made up should be indicated on the grade sheet, or students receiving an I will have until Add Day of the following term to complete their work for the course. As in the case of the E grade, the grade of I shall not be considered in calculating a student's grade-point average.

Students receiving grades of E or I should consult with their instructors not later than the beginning of the next term in residence as to the work required and the time allowed. This time should, in most cases, coincide with the date fixed in the calendar for removal of conditions and incompletes (Add Day), and in fact if no other time is specified, this date will be assumed. However, except under extraordinary circumstances, the time for the completion of the work will not be extended beyond one year after the date in which the grade of E or I was given. An E will turn into an F one year after the date on which the E was given, and an I grade will turn into a W (standing for "withdrawn") one year after the date on which the I grade was given. That circumstances are so extraordinary that it allows waiving of this one year rule requires the agreement before that one year anniversary of the Dean of Undergraduate Students, Chair of UASH, and Executive Officer of the department in which the course was taken. Grades of E and I shall not be considered in calculating a student's grade-point average.

Failed means that no credit will be recorded for the course. The units, however, count in computing the student's grade-point average, unless the course was taken on a pass/fail basis. He or she may register to repeat the subject in a subsequent term and receive credit without regard to the previous grade, the new grade and units being counted as for any other course, but the original F and units for the course remain on the record. An F, once recorded, will be changed to a passing grade only on the basis of error. Such a change may be made only with the approval of the Undergraduate Academic Standards and Honors Committee or of the Graduate Studies Committee, whichever has jurisdiction.

Petitions by undergraduate students for late drops (i.e., requests to drop a course after Drop Day) will be considered by the UASH Committee. If approved, a W will be recorded on the student's transcript in place of a grade for that course. W's will not be included in the computation of the student's grade-point average. Courses will be expunged from the student's record only in exceptional circumstances, at the discretion of the UASH Committee.

Each course at the Institute is assigned a number of *units* corresponding to the total number of hours per week devoted to that subject, including classwork, laboratory, and the normal outside preparation. Credits are awarded as shown in the table below.

Grade-Point Average: Grade-point average is computed by dividing the total number of credits earned in a term or an academic year by the total number of units taken in the corresponding period. Units for which a grade of F has been received are counted, even though the course may have subsequently been repeated. Grades of P or F

obtained in courses graded on a pass/fail basis are not included in computing grade-point average.

No. of

<i>Units</i>	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	F
1	4	4	4	3	3	3	2	2	2	1	1	0
2	9	8	7	7	6	5	5	4	3	3	2	0
3	13	12	11	10	9	8	7	6	5	4	3	0
4	17	16	15	13	12	11	9	8	7	5	4	0
5	22	20	18	17	15	13	12	10	8	7	5	0
6	26	24	22	20	18	16	14	12	10	8	6	0
7	30	28	26	23	21	19	16	14	12	9	7	0
8	35	32	29	27	24	21	19	16	13	11	8	0
9	39	36	33	30	27	24	21	18	15	12	9	0
10	43	40	37	33	30	27	23	20	17	13	10	0
11	48	44	40	37	33	29	26	22	18	15	11	0
12	52	48	44	40	36	32	28	24	20	16	12	0
13	56	52	48	43	39	35	30	26	22	17	13	0
14	61	56	51	47	42	37	33	28	23	19	14	0
15	65	60	55	50	45	40	35	30	25	20	15	0

Pass/Fail Grading: The following regulations apply:

- First-quarter and second-quarter freshmen receive pass/fail grades in all courses by virtue of their classification as freshmen by an admissions committee or, for students whose status after the first year is uncertain, by the Undergraduate Academic Standards and Honors Committee.
- All other students, undergraduate and graduate, in courses with numbers under 200 will receive letter grades unless the course is designated “graded pass/fail” or unless, when it is allowed, the student files with the Registrar’s Office a completed Pass/Fail Course Selection Card not later than the last day for dropping courses.
- In courses with numbers 200 or greater that are not designated either “graded pass/fail” or “letter grades only,” the instructor may decide separately for each student what class of grades to use.
- All research courses shall be designated “graded pass/fail.” All reading courses, seminar courses, or other courses that do not have a formal class structure shall be designated “graded pass/fail” unless the option secures an exemption from the Curriculum Committee or the Graduate Studies Committee and from the Faculty Board.
- A grade on the pass/fail system should be P if it would have been a D or better on the letter grade system. (Note that there is no D- grade.) The standards of failure in courses in which only pass/fail grades are used should be the same as they would be if the course were letter graded.
- Any instructor may, at his or her discretion, specify prior to

registration that his or her course, if not classified by the above regulations, is to be graded on a “letter grades only” basis or is to be graded pass/fail only, subject to possible review by the responsible option. The registrar must be notified of such specification two weeks before the beginning of registration. (Note: If the grading scheme is changed during the term, it is changed for everyone.)

- Each term, any student may select, subject to such requirements as may be imposed by the student’s option, two elective courses in which he or she is to be graded on a pass/fail basis if it is not designated as “letter grades only” and is not specifically required for the degree in his or her option. To make this election, a completed Pass/Fail Course Selection Card must be submitted to the Registrar’s Office on or before the last day for dropping courses that term. This election may be reversed or reinstated at any time before the deadline. The election must be approved and the card signed by the student’s adviser. The instructor must be notified and should sign the card to indicate that this has been done; the instructor must allow any eligible student to make this election.
- Of the units offered to satisfy the requirements for the Bachelor of Science degree, no more than 90 may be in courses graded pass/fail because of the student’s election.

Procedures for Resolving Disputes over Grading

At Caltech, the instructor has full responsibility for assigning grades to students enrolled in a course. On occasion, a student may not understand how a grade was determined and may seek further information. The student should first meet with the instructor or teaching assistant to discuss the grade. If after doing so the student believes the grade is unjustified or capricious, the following procedures are available.

Before the end of the term following the term when the grade was issued, the student should contact the academic mediator, appointed by the provost, who will work with the student and instructor to resolve the problem. If the mediation effort is unsatisfactory to the student, he or she may request a formal review by an appropriate executive officer or academic officer. The executive officer will review the case and report the decision in writing to the student. If the executive officer decides that a change of grade is warranted, or if the student requests a further appeal, these shall be requested of the division chair. At the discretion of the division chair, a committee may be appointed to review the case. The committee members should interview everyone involved in the case (the student, the course instructor, the teaching assistant, and anyone else with relevant information), and make a written recommendation to the division chair. Only the division chair can authorize the registrar to enter a new grade in the student’s transcript.

NOTICES AND AGREEMENTS

Academic Records of Veterans

The Institute maintains a written record of a student's previous education. This is part of the student's official transcript, and included on this is a summary of any prior college-level education. A true copy of a transcript of college-level work at other institutions is maintained as part of the student's record. The amount of credit granted for prior training is indicated on the student's official transcript and, where this results in the shortening of a required training period in the case of a veteran, the Veterans Administration is notified.

The Institute's official transcript for each student shows the progress that student is making at the Institute. There is a record of each course enrolled in each term with a grade recorded for the course. The total number of units earned is kept so that the record will show continued progress toward the degree sought. The final grades are recorded at the end of each term of the school year, and the accumulative permanent record has on it grades for all subjects taken at the Institute. No student is allowed to enroll repeatedly in a course and withdraw without penalty. If a student enrolls in a course, he or she is expected to complete the course or receive a failing grade unless he or she withdraws from the course prior to the deadline for dropping courses. All students must maintain a minimum load equivalent to 12 quarter hours each term; no student may drop courses that would bring him or her below this level of effort. At any time when the student falls below the required number of units, fails to receive satisfactory grades, or engages in unsatisfactory conduct, the record is marked to indicate this, and the student is forbidden to continue at the Institute.

The grading system of the Institute is A+ (excellent) to F (failed). An A+ is equivalent to 4.3 and an F to 0.0. A student must maintain a grade-point average of 1.9 in any term in order to be able to enroll in a successive term at the Institute. A minimum 1.9 overall grade-point average is required for graduation. A student who drops below the required average (1.9 for a given term) is dismissed and must petition for reinstatement. A student may be reinstated by the Undergraduate Academic Standards and Honors Committee and, if so, is required to earn a 1.9 GPA during the immediately following term. The Veterans Administration is notified when a veteran is academically dismissed or is making unsatisfactory progress toward a degree. Since the Institute requires all students to carry a minimum full load that corresponds to 12 quarter hours each term, any student who finishes a term in good standing is considered to have made satisfactory progress. If a student withdraws from a course before the final date for withdrawal, no grade is given in that course. The time spent in school counts, however, and the student may be considered to have not made satisfactory progress in the event of such withdrawal.

In order to withdraw from any course, a student must submit a withdrawal card. This shows the date on which the student was last in official attendance in that course. If a student reenrolls in that course

and successfully completes it, that fact will be noted on his or her official transcript.

Access to Student Records

The Institute maintains educational records for each student that include name, address, student identification number (including Social Security number), information on parents, guardian, and spouse, general information on academic status at the Institute, previous school data, results of standardized admissions examinations, courses previously taken or being taken, credits, and grades. Applicants for financial aid have an additional file holding those records. The Family Education Rights and Privacy Act (FERPA) and Caltech policy afford students certain rights as well as establish limitations with respect to student educational records. These rights and limitations are as follows:

1. The registrar of the Institute is responsible for maintaining all educational records, except for those involving financial aid. Caltech permits disclosure of educational records, without consent of the student, to Institute officials with legitimate educational interests in them. An Institute official is a person employed by the Institute in an administrative, supervisory, academic or research, or support-staff position (including security personnel and health and diversity center staff), a person or company with whom the Institute has contracted (such as an attorney, auditor, consultants, contractors, or collection agent), a person serving on the Board of Trustees, or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another Institute official in performing his or her tasks. An Institute official has a legitimate educational interest if he or she needs to review an educational record in order to fulfill his or her professional responsibility. They are available to the registrar, provost, president, general counsel, vice president for development and institute relations, vice president for student affairs, dean of graduate studies, dean of undergraduate students, director of financial aid, and faculty of the Institute and their respective staffs for the normal academic and business purposes of the Institute. Records involving financial aid are maintained by the director of financial aid, and are available to the director and staff, to the dean of graduate studies and staff, to the Faculty Committee on Scholarships and Financial Aid, and to the Faculty Committee on Graduate Study, for the purpose of granting and administering the Institute's financial aid program. Except as authorized by federal or state law or regulation, none of these educational records nor any personally identifiable information contained therein, other than directory information (see below), will be made available to anyone else, other than the student, without the written consent of that student. Where consent is required and given, the student, upon request, will receive a copy of the

records to be released. The Institute will keep a record, available to the student and kept with his or her file, of all persons and organizations, other than those authorized within the Institute, requesting or obtaining access to the files. The exception is when records have been produced in response to a grand-jury subpoena or other subpoena issued for a law-enforcement purpose and the court or issuing agency has ordered that the existence or the contents of the subpoena or the information furnished in response to the subpoena not be disclosed.

2. Students are allowed access to their educational records as follows: A student may inspect his or her academic transcript during normal working hours. To see other records, the student must provide a written request to the registrar or to the director of financial aid or to the dean of graduate studies or to the dean of undergraduate students, or their deputies, as appropriate. A mutually convenient time will be arranged within 10 working days after receipt of the request for the student to examine the records in his or her file. At that time the student may examine all educational records in the file with the exception of those specifically exempted by Part 99 of Title 34 of the Code of Federal Regulations. The student may obtain copies of any of the records available to him or her; the cost will be \$10 plus 25 cents per page. If a student believes the educational records relating to the student contain information that is inaccurate, misleading, or in violation of the student's rights of privacy, the student may ask the Institute to amend the record. The Institute will decide whether to amend the records as requested within a reasonable time after receiving the request. If the registrar, or the director of financial aid, or the dean of graduate studies, or the dean of undergraduate students, or their deputies, do not agree to amend any item contained or not contained in the educational records, the student will be informed of the decision and of his or her right to a hearing. The student may submit a written request to the vice president for student affairs or his/her designee for a hearing to challenge the content of the records on the grounds that the information contained in the records is inaccurate, misleading or in violation of the privacy rights of the student. The vice president for student affairs or his/her designee will schedule such a hearing within a reasonable time after receipt of the request and will notify the student at a time reasonably in advance of the hearing of its date, time, and place. The student will be afforded a full and fair opportunity to present evidence relevant to the issues raised and may be assisted or represented by individuals of his or her choice at his or her own expense, including an attorney. The decision of the vice president or designee will be in writing, will be rendered within a reasonable time after the conclusion of the hearing, and will be final. This decision will be based solely upon the evidence presented at the hearing and will include a summary of

the evidence and of the reasons for the decision. If, as a result of the hearing, the Institute decides that the information is inaccurate, misleading, or otherwise in violation of the privacy rights of the student, the Institute shall amend the records accordingly, and so inform the student in writing. However, if, as a result of the hearing, the Institute decides that the information is not inaccurate, misleading, or otherwise in violation of the privacy rights of a student, it shall inform the student of the right to place in the educational records a statement commenting on the information in the records and/or setting forth any reasons for disagreeing with the decision of the Institute.

3. The Institute considers the following to be directory information: a student's name, UID, addresses (permanent, campus and local/off-campus, and e-mail), associated telephone listings, ID photograph, date and place of birth, major field of study, year in school, current enrollment status, expected date of graduation, name of academic adviser, participation in officially recognized activities and sports, weight and height if a member of an athletic team, dates of attendance, degrees and awards received, thesis title, hometown, and most recently attended educational agency or institution. Directory information may be made available to requestors at the Institute's discretion. Any student may, however, have part or all of this information withheld by notifying the registrar in writing no later than 30 days after the commencement of classes in the academic year. That information will then be withheld for the balance of that academic year. If the information is to be withheld in subsequent years, new requests must be filed.
4. A student will not be required to waive any rights regarding access to educational records. However, a student may voluntarily waive right of access to confidential statements made by third parties respecting admission to educational agencies or institutions, applications for employment, or the receipt of an honor or honorary recognition. In case of waiver, the confidential statements will be used solely for the purposes for which they were specifically intended, and the student will, upon request, be notified of the names of all persons making such confidential statements. If a student should desire to waive right of access, so as to facilitate the obtaining of a confidential statement of this nature, he or she should contact the registrar for the necessary form.
5. The Institute reserves the right to destroy from time to time any and all educational records that it maintains on a student, except to the extent that the law requires their maintenance for a longer period of time. However, where access to records has been requested, no destruction of those records will be allowed to take place until such access has been granted or denied.
6. Students who believe their rights under FERPA may have been violated may file a complaint with the Family Policy

Transcripts of Records

A student, or former student, may request that official transcripts of his or her records be forwarded to designated institutions or individuals. Requests should be filed at the Registrar's Office at least five days before the date on which the transcripts are to be mailed.

Accreditations and Authorizations

The California Institute of Technology is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges, 985 Atlantic Ave., Ste. 100, Alameda, CA 94501; (510) 748-9001. In addition, the Institute is authorized by the California State Department of Education, Office of Private Postsecondary Education, to operate as a private postsecondary educational institution and, by the same agency, to train veterans in the programs of the Veterans Administration.

The Engineering Accreditation Commission of ABET, Inc. (111 Market Place, Suite 1050, Baltimore, MD 21202-4012; 410-347-7700), has accredited Caltech's B.S. programs in chemical engineering, in electrical engineering, and in mechanical engineering. Further, the Committee on Professional Training of the American Chemical Society has approved Caltech's B.S. program in chemistry.

The documents describing these accreditations and authorizations are on file and may be inspected in the Registrar's Office and the Provost's Office; the office of the Division of Engineering and Applied Science also has the documentation for ABET.

Student Problem Resolution Process

Caltech provides a variety of routes, most of them informal, by which students may bring complaints for consideration and resolution. For example, in academic matters, students may begin with faculty-student conversations that may extend to the deans, the option representatives, the division chairs, the registrar, or to various committees having faculty and student members. Non-academic matters can be dealt with informally by student leaders, resident associates, the residence life coordinators, the deans, and other student affairs offices. The Graduate Student Council (GSC) and the Associated Students of the California Institute of Technology (ASCIT) may become involved in some complaints, and sometimes ad hoc groups are formed to make recommendations.

The Problem-Resolution Process (Process) is intended to deal with complaints by currently enrolled students for which reasonable efforts by the available informal routes have not lead to an acceptable resolution and which do not fall within the jurisdiction of other Policies or the Honor System.

The first step in this Process is for the student to consult with the appropriate deans. One of the deans will then determine if this issue

falls under this Process and, if appropriate, will appoint a mediator to help resolve the issue. If the student's issue involves a decision or action of a dean, the vice president of student affairs will appoint a mediator to help resolve the issue.

The mediator will assist the student in trying to work out the problem. If the student is not satisfied with the results, the student may file a written notice of appeal to the vice president for student affairs. The decision of the vice president is final.

If the student has a complaint about Caltech's compliance with academic program quality and accrediting standards that they believe warrants further attention after exhausting the steps outlined above, they may contact the Western Association of Schools and Colleges (WASC) at <http://www.wascsenior.org/comments>. WASC is the academic accrediting body for Caltech. An individual may contact the Bureau for Private Postsecondary Education for review of a complaint. The bureau may be contacted at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95833, website: www.bppe.ca.gov, telephone: (916) 431-6924; fax: (916) 263-1897. Prospective students may contact WASC or the BPPE with complaints as well.

Student Patent and Computer Software Agreement

The California Institute of Technology (Caltech) has a responsibility to see that inventions and copyrightable materials (including software) developed in connection with Caltech be used for the public benefit, and be consistent with Caltech's contractual obligations. In view of the patent and copyright policies of Caltech in force on this date and as may from time to time be amended, and my use of and access to Caltech facilities and equipment, I agree to the following:

Caltech retains all rights in inventions and computer software I generate as a student at the Caltech campus, Jet Propulsion Laboratory (JPL), and other facilities owned or managed by Caltech, with the following exceptions:

1. When I generate copyrightable computer software or other written work at Caltech in connection with my enrollment in Caltech's educational program, such as in course work, homework, theses and publications, I understand that I will retain ownership of copyrights to these works, and I hereby grant to Caltech an irrevocable royalty-free nonexclusive license to use such computer software and written work for educational and research purposes, including the right to grant sublicenses. If the work is generated at JPL or any Caltech owned or managed facility, I also hereby grant to the United States Government ("Government") a royaltyfree, nonexclusive license to use such computer software and written work for purposes for or on behalf of the Government, to the extent Caltech or the Government requires such a license.
2. When I make inventions, write computer software or other written work entirely on my own time, without using Caltech's equipment or facilities (other than incidental use of electronic

information resources as is permitted under Caltech policy), and without using Caltech funds, I retain ownership of those inventions, software and written work.

I agree to assign, and hereby do assign, to Caltech all inventions and copyrightable materials that I develop with the use of funds administered by Caltech, or in the course of my duties at or for Caltech, including JPL, or with use of other facilities owned or managed by Caltech, apart from those for which I retain rights under numbered paragraphs 1 and 2 of this agreement, and all copyrights, patent applications and patents relating to those inventions and copyrightable materials.

I agree to execute all papers required to apply for, obtain, maintain, issue and enforce the assigned copyright registrations, patents and applications; and to provide reasonable assistance regarding those copyrights, patents and patent applications, including testifying in any related patent office proceeding, dispute or litigation. Expenses for the copyrights and patent applications, and for the assistance set forth in the preceding sentence, shall be borne entirely by Caltech.

I agree to notify Caltech promptly of all such assigned inventions or copyrightable materials.

I understand that if Caltech receives funds from the licensing of the assigned copyrightable materials or patents in excess of unreimbursed expenses associated with obtaining, maintaining and enforcing those copyrights and patents, I will share in these funds according to the established Caltech policy, procedures and practice in effect on the date that the patent application is filed or the computer software is completed, in the same manner as a member of the academic staff and employees.

I agree to notify Caltech of any funding of which I am aware that may have supported an assigned invention described in the preceding paragraphs. This is to ensure Caltech's compliance with its obligations, including the provisions of the Federal Bayh-Dole Act and implementing regulations. For work done at JPL, I agree to have all scientific and technical publications reviewed, pursuant to JPL policy, prior to public release to ensure compliance with U.S. export control laws.

I understand that Caltech relies on this agreement when it enters into contracts with others and obligates itself with respect to inventions and computer software developed at Caltech.

Revised 03-23-2015

Student Retention and Persistence Rates

Most undergraduates enter Caltech at the freshman level. Of the 248 freshmen enrolled during the 2013–14 academic year, 240 reenrolled in the first term of the 2014–15 academic year and are progressing, yielding a persistence rate of 97 percent after all allowable exclusions. Of the 236 freshmen enrolled during the 2008–09 academic year, 216 graduated by June 2014, yielding a graduation rate for this group of 92 percent after allowable exclusions.

At the graduate level, most students enter Caltech to pursue either the degree of Master of Science or Doctor of Philosophy or, occasion-

ally, both. Of the 219 entering graduate students enrolled in a Ph.D. program during the 2013–14 academic year, 209 reenrolled in the first term of the 2014–15 academic year and are making satisfactory academic progress, resulting in a persistence rate of 95 percent. Of the 19 entering graduate students enrolled in M.S. programs during the 2013–14 academic year, 11 earned a terminal M.S. degree within one year.

Undergraduate Student Events

Caltech is committed to providing its students, faculty and staff with an environment that promotes safe and responsible social interaction. Caltech recognizes that student parties and activities are an important part of campus life. Students are required to follow Event Planning Procedures set forth on the Deans Office website: <http://deans.caltech.edu/Services/PartyPlan>

INSTITUTE POLICIES

Acceptable Use of Electronic Information Resources

Caltech provides electronic information resources (including, but not limited to, computers, computer accounts and services, networks, software, electronic mail services, electronic information sources, video and voice services, servers, web pages, and related services) to assist members of the Institute community in the pursuit of education and research. This policy, in conjunction with other applicable

Caltech policies, sets forth the acceptable use of all electronic information resources owned or managed by Caltech, and describes the rights and responsibilities of the Institute and of faculty, staff, students, and other members of the Institute community with respect to the use of these resources.

Electronic information resources provided by Caltech are intended to be used to carry out the legitimate business of the Institute, although some incidental personal use is permitted. Faculty, staff, students, and other members of the Institute community (“users”) who use Caltech’s electronic information resources should be guided by the Honor Code, which prohibits any member of the Institute community from taking unfair advantage of any other member of the Caltech community, and the Code of Conduct. Users assume responsibility for the appropriate use of the Institute’s electronic information resources and agree to comply with all relevant Institute policies and all applicable local, state, and federal laws. Examples of inappropriate or unauthorized use of the Institute’s electronic information resources include:

- sending a communication or using electronic information resources, including web pages, that
- Illegally discriminate against, harass, defame, or threaten individuals or organizations;
- engaging in illegal conduct or conduct that violates Institute policy;

- destruction of or damage to equipment, software, or data belonging to others;
- disruption or unauthorized monitoring of electronic communications;
- interference with use of Institute systems;
- violations of computer security systems;
- unauthorized use of accounts, access codes, or identification numbers;
- use that intentionally impedes the legitimate computing activities of others;
- use for commercial purposes;
- use for political or lobbying activities that jeopardize the Institute's tax exempt status and, therefore, violate Institute policy;
- violation of copyrights, software license agreements, patent protections and authorizations, or protections on proprietary or confidential information;
- unauthorized use of Caltech's trademarks;
- violating copyright laws by downloading and sharing files;
- violations of privacy;
- academic dishonesty;
- sending chain mail;
- spamming;
- downloading, viewing, and/or sharing of materials in violation of the Institute's policy regarding Unlawful Harassment, including Sexual Violence (<http://www.hr.caltech.edu/services/policies/>);
- intrusion into computer systems to alter or destroy data or computer programs (e.g., hacking or cracking); or
- sending communications that attempt to hide the identity of the sender or represent the sender as someone else.

This policy will not be construed or applied in a manner that improperly interferes with employees' rights under the National Labor Relations Act.

Caltech's electronic information resources are Institute property and users should not have an expectation of privacy with respect to their use of these resources or the data, files, or other records generated, stored, or maintained on them. Password capabilities and other safeguards are provided to users in order to safeguard electronic messages, data, files, and other records (including computer files and records, electronic mail, and voice mail) from unauthorized use. These safeguards are not intended to provide confidentiality from the Institute with respect to personal messages or files stored on electronic information resources owned and managed by Caltech.

In order to protect the integrity of its electronic information resources, the Institute routinely examines network transmission patterns such as source/destination, address/port, flags, packet size, packet rate, and other indicators of traffic on its servers. The Institute will follow up on any system and/or account that appears to be com-

promised or is in the process of being compromised. Caltech typically does not review the content of electronic messages or other data, files, or records generated, stored, or maintained on its electronic information resources; however, it retains the right to inspect, review, or retain the content of such messages, data, files, and records at any time without prior notification. Any such action will be taken for reasons the Institute, within its discretion, deems to be legitimate. These legitimate reasons may include, but are not limited to, responding to lawful subpoenas or court orders; investigating misconduct (including research misconduct); determining compliance with Institute policies and the law; and locating electronic messages, data, files, or other records related to these purposes. Users must therefore understand that electronic messages, data, files, and other records generated, stored, or maintained on Institute electronic information resources may be electronically accessed, reconstructed, or retrieved by the Institute even after they have been deleted.

Institute access to the content of electronic mail, data, files, or other records generated, stored, or maintained by any user for reasons such as those described in the previous paragraph must be authorized as follows: (1) by the Provost for any situations that require access to electronic materials associated with faculty; (2) by the Vice President for Business and Finance for staff at campus or the JPL Director for Human Resources for staff at JPL; (3) by the Vice President for Student Affairs for students; or (4) by the General Counsel for the purposes of complying with legal process and requirements or to preserve user electronic information for possible subsequent access in accordance with this policy. In all cases, the Office of the General Counsel should be consulted prior to making a decision on whether to grant access. In the case of a time-critical matter, if the authorizing official cannot be located, the General Counsel may authorize access.

The Office of General Counsel will work with Information Management Systems and Services to prepare an annual summary report of all activity authorized under this policy. The report shall be provided to both the President and the Provost.

In conclusion, the use of Institute electronic information resources is a privilege, not a right, and the Institute may revoke this privilege or decline to extend this privilege at any time. Inappropriate use of Institute resources may result in administrative discipline up to and including separation from the Institute. Suspected illegal acts involving Institute electronic information resources may be reported to state and/or federal authorities, and may result in prosecution by those authorities. Any questions concerning the appropriate use of any of the Institute's electronic information resources or relevant

Institute policies should be directed to the provost, the general counsel, the chief information officer, the associate vice president for human resources, the dean of undergraduate students, or the dean of graduate studies.

Compliance with Export Laws & Regulations

The mission of the California Institute of Technology is to expand human knowledge and benefit society through research integrated with education. We investigate the most challenging, fundamental problems in science and technology in a singularly collegial, interdisciplinary atmosphere, while educating outstanding students to become creative members of society.

Export control laws and regulations as referred to in this Policy include a number of federal laws and regulations that impact an export or import transaction such as those of the Departments of State, Commerce, Treasury, Defense, Energy and U.S. Customs. These laws have existed for many years, however, the events of September 11, 2001 and subsequent events around the world have pushed national security concerns to the forefront. The U.S. government has responded to global security concerns by tightening the export control regulations that govern the transfer of U.S. strategic technology for national security and foreign policy reasons and in furtherance of economic objectives.

The export control laws are intended to control the transfer of sensitive information or goods to individuals, entities or countries of concern and, under certain conditions, to foreign persons. The regulations contain a fundamental research exclusion and specific university exemptions that allow most of the research activities being performed at U.S. colleges and universities to be carried out without the need of export licenses or other restrictions, subject to certain conditions.

Caltech is an institution of higher learning conducting fundamental research in science and engineering. The fundamental research exclusion, however, does not fully relieve us of our responsibility to comply with the export control regulations.

The fundamental research exclusion, as defined in the U.S. export regulations, applies to basic and applied research in science and engineering performed by colleges and universities, so long as that research is carried out openly and without restrictions on publication or access to or dissemination of the research results.

The presidential National Security Decision Directive 189 (NSDD 189) recognizes the important contributions that U.S. universities make in science and engineering that allow our nation to remain innovative and competitive. NSDD 189 provides the framework for the fundamental research exclusion.

The fundamental research exclusion applies only to research conducted in the United States. This exclusion allows most of the activities conducted at Caltech to be performed without the need of an export license. However, there are certain activities and information that are not covered by the fundamental research exclusion and remain subject to the export control laws and regulations.

Examples of these are:

1. Receipt by the Institute of third-party export controlled information which requires that appropriate measures be taken to ensure that the information is properly safeguarded. Under

- certain conditions, the disclosure of specific information and the provision of specific types of services to foreign persons (non U.S. citizens, non-legal permanent residents, or non-U.S. legal entities) inside the United States (“deemed exports”);
2. Travel abroad: Engaging in specific activities with persons and entities abroad, even if the information relied upon is publicly available;
 3. The export of controlled items and information outside the United States including: controlled hardware, software and technology; and
 4. Financial transactions or other dealings involving prohibited parties or sanctioned countries.

The export control laws and regulations may apply to research activities whether or not they are funded by grants or contracts.

Caltech takes its freedom to publish and its commitment to openness in research very seriously. Caltech’s policy, as set forth in the Faculty Handbook, does not allow acceptance of any government contract or grant that requires classified research to be carried out on campus or which impinges upon the Institute’s freedom to publish and otherwise disseminate the results of its research. For that reason, Caltech undergraduate students shall not be given certain export-controlled technology, i.e., ITAR-controlled technical data, software, and items, if such access would jeopardize their ability to publish.

The export control laws are administered by the U.S. Department of Commerce through its Export Administration Regulations (EAR – dual-use items), the U.S. Department of State through its International Traffic in Arms Regulations (ITAR – space and military items), and the U.S. Department of Treasury through its Office of Foreign Assets Control (OFAC – economic and trade sanctions). These laws control the conditions under which certain information, technologies, and commodities can be transmitted overseas to anyone, including U.S. citizens, or to a foreign person on U.S. soil. Caltech is committed to comply fully with these federal laws and regulations.

To that end, Caltech has established an Export Compliance Office and has appointed a Director for Export Compliance who also functions as Caltech’s Empowered Official. The Empowered Official is the person who has legal authority to sign export control license applications and other requests for export approval on behalf of Caltech, and is the person responsible for developing and implementing export compliance programs, campus procedures, awareness programs for faculty and training programs for staff.

Caltech expects all faculty and staff to comply fully with all applicable export control laws and regulations. Noncompliance may result in violations that can subject both the individual and the Institute to civil sanctions and criminal penalties.

It is the responsibility of Caltech faculty and staff to ensure the Institute’s compliance with this policy.

The following individuals have been designated as contacts regarding export control issues:

Adilia F. Koch, Director for Export Compliance, (626) 395-4469 or the Export Office staff at (626) 395-2641 or export@caltech.edu.

Conflicts of Interest Policy

The mission of the California Institute of Technology (Caltech) is to expand human knowledge and benefit society through research integrated with education. In pursuit of this mission, Caltech adheres to the Eleven Principles comprising its code of conduct and strives for the highest level of integrity and public confidence. Caltech's integrity rests on the personal integrity of each of us who is called upon to act on behalf of the Institute. Caltech is committed to ensuring that decisions made on its behalf reflect the highest ethical standards and that its research and instruction remain a rigorous and open inquiry, unencumbered by conflicts of interest, real or perceived, that might affect the sound judgment of the trustees, officers, senior management, faculty, students and staff. Each of us, therefore, is responsible for identifying and resolving conflicts between personal and Institutional interests. We each must act in the best interests of the Institute and refrain from taking part in any transaction where we do not believe in good faith that we can act impartially.

Individual conflicts of interest may affect the Institute's trustees, officers, faculty, or staff. An individual conflict of interest is a situation that may compromise an individual's professional judgment in carrying out Institute business due to an external relationship that directly or indirectly affects the interest of the individual or an immediate family member. Each situation that presents a potential for conflict of interest must be fully disclosed to the Institute, and managed or eliminated before moving forward. Conflicts of interest also include conflicts of commitment which are situations in which external activities, either paid or unpaid, interfere with an employee's primary obligation and commitment to the Institute.

In academic research, the term conflict of interest refers especially to situations in which financial or other personal considerations may compromise, or may have the appearance of compromising, an investigator's professional judgment in conducting or reporting research. The bias can affect collection, analysis, and interpretation of data, hiring of staff, and procurement of materials, sharing of results, choice of protocol, and the use of statistical methods. Conflicts of interest can affect all scholarly fields.

Caltech has established these conflict of interest policies and procedures that apply to all Caltech employees, including faculty, to ensure compliance with Caltech's ethical standards as well as with the laws, rules, and regulations that govern Institute activities, while fostering and sustaining an environment of openness and integrity.

Individual Conflicts of Interest

The broad principles in this policy encompass a variety of situations, many of which do not fall into patterns for which specific guidelines may be established. Conflicts of interest inevitably arise from time to time in everyday business life; some may appear to be inconsequential or may even be advantageous to the Institute. It is important, however, that all employees make timely disclosure of any such conflict of interest. Each employee should apply his or her sense of integrity and common sense to disclose any circumstances that are, may become, or may give the appearance of a possible conflict of interest. Supplementing this broad policy statement are the following rules to be observed on specific matters:

1. Each employee has a duty to act in the best interest of the Institute and avoid actions that would call into question the integrity of the employee or the Institute.
2. An employee who has directly or through family or business connections, a material interest in suppliers of goods or services, or an interest in contractors or potential contractors with the Institute, should not act on behalf of the Institute in any transaction involving that interest. No employee should participate in the selection, award, or administration of a contract with any party with whom he/she is negotiating regarding potential employment or any arrangement concerning potential employment.
3. An employee should avoid outside employment or business activity involving obligations which may conflict or appear to conflict with Institute interests, including its interest in the full- or part-time services of any staff member (i.e. a conflict of commitment). Outside employment, directorships, consulting or similar arrangements, other than with government entities, must be disclosed to the Division Chair for faculty, the staff member's supervisor and the Associate Vice President for Human Resources for campus staff and the JPL Ethics office and HR office for JPL staff. Campus and JPL staff are required to obtain approval prior to engaging in outside employment, consulting or other business activities. Campus staff must complete the Application for Outside Employment, Consulting or Business Activity form pursuant to Personnel Memorandum PM 9-3, JPL staff must complete the Request for Outside Activity form pursuant to JPL Rule 8718.
4. To avoid the appearance of a conflict of interest, an employee should provide full disclosure of any business or financial enterprise or activity in which he/she is involved which might influence, or might appear to influence, his/her official decisions or actions on Institute matters.
5. An employee should refrain from personal activities that include, but are not limited to, the purchase or sale of securities, real property, or other goods or services in which he/she could

use or might appear to have the opportunity to use, for personal gain, confidential information or special knowledge gained as a result of his/her relationship with the Institute.

6. An employee should refrain from unauthorized disclosure of non-public information concerning the Institute. Additionally, an employee should not use non-public information accessed through the performance of a government contract for personal gain.
7. No employee should make unauthorized use of Institute resources for his/her personal benefit or for the benefit of any other person. Incidental personal use of resources is authorized by the Institute. See Institute Policy on Acceptable Use of Electronic Information Resources and JPL Rules!
8. It is sound practice to discourage gifts and favors from people with whom the Institute has a business relationship. Personal gifts of more than nominal value should be tactfully declined or returned to avoid any appearance or suggestion of improper influence. Any employee involved in awarding or administering contracts using federal or other government funds should keep in mind that state and federal law contain prohibitions against soliciting or accepting gratuities, favors or anything of monetary value from contractors or potential contractors.
9. Any employee doing business on behalf of the Institute with specific vendors should refrain from participating on leisure trips with representatives of those vendors. Such trips are not appropriate, even when a staff employee pays a fee to the vendor to participate in such trips.
10. No employee should act in any Institute matter involving a member of his/her immediate family including, but not limited to, matters affecting family members' employment or evaluation or advancement in the Institute, without first making full disclosure to the Division Chair for faculty, the staff member's supervisor and the Associate Vice President for Human Resources for campus staff and the JPL Ethics office and HR office for JPL staff. Such disclosure should include the nature of the familial relationship and the impact or potential impact of the employee's action on such family member. Immediate family includes spouse or domestic partner and children.

Any employee who believes that his/her conduct or activities may or may appear to conflict with these guidelines or activities or otherwise create a conflict of interest, should make an appropriate disclosure. You may also report possible conflicts of interest by calling the Compliance Hotline at 626-395-8787 or submitting a compliance hotline form. JPL employees should consult Laboratory requirements, and seek guidance and/or report possible conflicts of interest by contacting the JPL Ethics Office.

Additional Faculty Responsibilities

It is acknowledged that, in their wider roles as academicians and professionals, the faculty may be subject to conflicts of interest that are not necessarily financial and that are not within the scope of a policy that is designed to address conflicts of interest in the employer-employee setting. For example, this policy is not designed to address conflicts that may be encountered in service to a professional society. Academic and professional activities not covered by this policy are best handled within the ethical guidelines established by the Faculty Handbook. Faculty members must be aware of potential conflicts to ensure an open and productive environment for research and teaching. Conflicts of interest may arise when faculty members have the opportunity to influence the Institute's business decisions or when outside relationships may or may appear to compromise the integrity of decisions made as teachers and researchers. A faculty member's general commitment to the Institute requires that the member perform his/her responsibilities to the Institute and appropriately use his/her own judgment in deciding whether to engage in a variety of extramural activities, within the confines set forth in the Faculty Handbook. As a result, the

Institute relies on its faculty to be alert to the possible effect of outside activities on the integrity of his/her decisions and on his/her ability to fulfill his/her obligations to the Institute. Accordingly, in addition to the conflict rules set forth above, the following guidance is provided for faculty:

1. Some activities and interests are unlikely to lead to serious conflicts of interest and do not require disclosure. An example is a faculty member's entitlement to royalties or honoraria for published scholarly works and other writings or occasional lectures. Likewise, no serious conflicts arise when a faculty member serves as a consultant to a government agency, receives royalties under Institute royalty-sharing policies or owns equity in a business solely for the faculty member's consulting activities.
2. Disclosure to the Division Chair is mandatory if the faculty member directs students into a research area and, as a result, the faculty member intends to realize financial gain. An example is a research area within the ambit of a business in which the faculty member has a significant ownership interest or which employs the faculty member as a consultant. Any involvement of undergraduates, graduate students or post-doctoral scholars in the outside professional activities of the faculty member directing the student's research must be specifically approved in advance by the Division Chair. The student must also sign the written disclosure to signify understanding of the issues involved.
3. Disclosure to the Division Chair is mandatory if the faculty member has a significant interest in a business under circumstances that link the fortunes of the business to the faculty member's research.

4. Disclosure to the Division Chair is required if the faculty member is to receive sponsored support for research from a business for which the faculty member is a consultant, or in which the faculty member has a significant financial interest.

Conflict of Interest Requirements Imposed by Federal Sponsors

The National Science Foundation (NSF) and Public Health Services (PHS) have issued specific rules regarding the disclosure of significant financial interests and the management of financial conflicts of interest as a condition for submitting proposals and accepting awards of financial support from these agencies. Members of the Caltech Community proposing or working on any activity funded by NSF or PHS (including the National Institutes of Health) are required to comply with Caltech's Policy and Procedures for Managing Conflict of Interest Requirements Imposed by Federal Sponsors.

Institutional Conflicts of Interest Policy

Institutional conflicts of interest differ from individual conflicts of interest. An institutional conflict of interest is a situation in which the research, teaching, outreach, or other activities of the Institute may be compromised because of an external financial or business relationship held by the Institute that may bring financial gain to the Institute.

Institutional Conflicts of Interest

The Institute has many legitimate interests that may at times conflict. Management of institutional conflicts of interest is by its very nature more complex than that of individual conflicts of interest. External relationships to sponsors and supporters of the institution, the local community's acceptance of economic development activities, the institution's obligations as a charitable organization receiving preferential tax treatment, and the institution's perception of its teaching, research, and academic missions all impact how potential conflicts of interest are managed. The examples and issues presented below do not necessarily constitute inappropriate conflicts of interest. Each situation must be judged on the facts and merits of the relationship with an eye to what reasonable individuals outside the Institute might consider to be appropriate. Any activity, financial and/or operational, that may bring into question the Institute's reputation, integrity, and objectivity should be considered for possible conflicts of interest. The following are examples of potential situations that may give rise to institutional conflicts of interest:

1. Significant gifts to the Institute from a commercial sponsor of research may raise questions about the influence of the company on Caltech's research programs and how they are managed. Similar concerns arise when individual companies sponsor research or provide significant consulting income to a significant number of faculty members within a single academic division. Gifts or promise of gifts, in exchange for favorable terms

- on a technology license or a first look at intellectual property may also pose a problem.
2. The acquisition of goods and services for the Institute represents a large portion of Caltech's expenditures. Purchasing goods and services from companies that sponsor research at the Institute, or who are licensees of Institute technology, may raise issues similar to those raised by large gifts from commercial sponsors.
 3. A potential institutional conflict of interest exists simply by the Institute having a license agreement with, or an equity position in, a company sponsoring a faculty member's research. In these situations, there may be, or may appear to be, a bias to accept terms and conditions that would facilitate the company's success.

Reporting Institutional Conflicts of Interest

If you identify a situation that appears to be an Institutional Conflict of Interest, you should report the situation to either the Vice President for Business & Finance or to the Provost on campus or to the Associate Director for Business at JPL. You may also make a report by calling the campus Compliance Hotline at 626-395-8787 or the JPL Ethics Office at 818-354-6338 or submitting an <http://hotline.caltech.edu/contact>.

Disability and Reasonable Accommodation

It is the Institute's policy to comply fully with the Americans with Disabilities Act, the Rehabilitation Act, and other applicable federal and state laws to ensure equal opportunity for qualified persons with disabilities, including disabled veterans. The Institute does not discriminate based on physical or mental disability, and is committed to ensuring that there is no unlawful discrimination in any of its academic or employment programs, services, activities, and terms and conditions of employment.

As required by law, the Institute will make reasonable accommodations to qualified individuals with known disabilities including students, faculty, postdoctoral scholars, staff, and job applicants, so long as such accommodation does not create an undue hardship for the Institute. The Institute also will provide reasonable accommodations to employees with pregnancy-related conditions consistent with federal and state law.

The following individuals have been designated as contacts for disability related issues, and as coordinators under the Rehabilitation Act. Individuals who wish to request an accommodation should contact the appropriate Institute representative.

Students:

Barbara Green, 626-395-6351
Associate Dean of Students

Faculty:

Stacey Scoville, 626-395-6320
Administrator to the Provost

Staff and Postdoctoral Scholars:
 Campus
 Tracey Saruwatari, 626-395-5740
 Disability and Leave Manager

JPL
 Arlene Cass, 818-354-9750
 Human Resources Consultant

As part of the Institute's commitment to make reasonable accommodations, the Institute will participate in a timely, good faith, interactive process with the individual and the appropriate Institute representative to determine effective reasonable accommodations, if any, that can be made in response to a request for accommodation. The Institute has the right to request documentation of the individual's disability. By working together in good faith, the Institute will attempt to implement reasonable accommodations that are appropriate and consistent with its legal requirements.

After engaging in the interactive process, and after the Institute has determined if a reasonable accommodation is available, an individual with a disability who disagrees with the Institute's determination may file an appeal. Appeal procedures may be obtained from the campus/JPL coordinators listed in this policy.

Employees and applicants also may file a complaint with the U.S. Equal Employment Opportunity Commission, the California Department of Fair Employment and Housing, and the U.S. Department of Labor, Office of Federal Contract Compliance Programs, or the U.S. Department of Education, Office for Civil Rights. Students may file complaints with the U.S. Department of Education Office for Civil Rights at (415) 486-5555 (or ocr.sanfrancisco@ed.gov) or (800) 421-3481 (or OCR@ed.gov).

Environment, Health, and Safety

The California Institute of Technology (Caltech or Institute) is committed to conducting activities in a manner that promotes the safety and health of faculty, staff, students, and visitors and minimizes risk to Caltech property. Activities at Caltech are to be conducted in accordance with the following guiding principles:

- The responsibility for implementing and maintaining a safe environment rests on all staff, faculty, students, and visitors at Caltech.
- Supervisors are responsible for establishing safe practices in their respective laboratories or workplaces and for providing safe equipment and facilities for staff, students, and visitors.
- All faculty, students, staff, and visitors are expected to follow proper and safe procedures, to report accidents promptly to their supervisor, including any unsafe conditions or practices.

- Institute activities must comply with all applicable federal, state, and local environmental and safety laws and regulations.
- Waste is minimized through efficient and appropriate use of resources and is disposed of in a way that protects individuals and the environment and complies with applicable regulations.
- Those who do business with Caltech, such as contractors, consultants and vendors, are responsible for performing their work on Caltech property in a manner that protects the Institute from environmental and safety risks.

Roles and Responsibilities

The Institute has the responsibility to establish policies and provide resources to ensure compliance with environmental and safety laws. Caltech performs this function through the following committees and administrative and management structure:

- Institute Environment, Health and Safety Committee (IEHSC)

The Institute Environment, Health and Safety Committee will serve as the primary source of policy guidance on all matters pertaining to environmental and workplace safety compliance and related regulatory developments.

The committee is responsible for making recommendations regarding the allocation of Institute resources so as to maintain environmental (air emissions, soil contamination, water discharges, hazardous waste management) and workplace safety compliance. In addition, the committee develops Institute environmental and safety policy recommendations for approval by the president and monitors developments through the Environment, Health, and Safety Office to ensure that Institute policies are observed, remain current, and are consistent with the anticipated changes in regulatory climate.

This committee also provides an annual report to the president, summarizing the status of environmental and safety programs and risks affecting the Institute.

- Environment, Health, and Safety Office (EHS)

The EHS provides technical, regulatory, and related advisory services to the Institute community. EHS works in partnership with the divisions and administrative offices to develop and implement safety programs that provide technical guidance and training support relevant to the operations of the laboratory or workplace, are practical to carry out, and comply with the law. This includes general orientation in prudent laboratory practices, emergency response procedures, occupational safety, and familiarity with Institute EHS policies and plans. EHS also initiates site reviews to assess potential hazards and determines effective controls, coordinates hazardous waste training and

pickup, and helps analyze specific problems.

EHS, working closely with the Office of the General Counsel as appropriate, conducts accident investigations and investigates and reports environmental and safety incidents.

- Division chair and head of administrative office

Caltech consists of divisions conducting research and educational activities and administrative offices supporting the operations of the Institute. It is the responsibility of the division chair and the head of each administrative office to ensure their units conduct operations in accordance with applicable laws and regulations, and to implement the Institute's environmental and safety policies.

Each division chair and the head of each administrative office maintain responsibility for day-to-day management and implementation of their environmental and safety programs.

Each division chair and head of each administrative office can designate an individual with the authority to implement, manage, and enforce environmental and safety compliance programs within the division or administrative office. With guidance and assistance from EHS, the responsible individual (i.e. the division chair, administrative office head, or their designee) shall manage the environmental and safety activities in the division or department.

- Supervisor responsibilities (all Institute supervisors and faculty)

Each supervisor has responsibility for conducting operations in accordance with all applicable laws and regulations and Institute policies.

Faculty bear full responsibility for the safety of work undertaken in their labs but can designate an individual to implement and manage the day-to-day activities related to environmental and safety practices within their research group.

With guidance and assistance from EHS, the responsibilities of supervisors include training and informing employees, students, and visitors about workplace-specific hazards and safety procedures; providing personal protective equipment; correcting violations; investigating incidents and complaints by employees and students; overseeing proper storage and disposal of hazardous materials; enforcing policies (including appropriately disciplining employees and students who violate environmental and safety requirements); and appropriately documenting activities and processes.

- Institute faculty, staff, students, and visitors

It is the responsibility of each individual to conduct activities at Caltech in compliance with all applicable government, Institute, and division or department policies, procedures and guidelines. The suc-

cess of the Institute's environmental and safety management activities requires the active involvement of individuals through participation in training; compliance with established safety and environmental procedures; reporting hazards and potential violations of regulations; and recommending improvements.

It is the responsibility of all employees and students of the Institute to disclose fully any activity that may result in a violation of environmental and safety regulations, and to cooperatively participate in the investigation and remediation of any incidents.

- Contractors

It is the responsibility of those under contract, consultants, vendors, and contractors to conduct their activities at Caltech in adherence with sound safety practices and to comply with all applicable environmental and safety laws and regulations as well as Institute policies in their contracts.

Reporting

In matters of actual or potential regulatory enforcement action, investigations, or employee complaints, EHS, working closely with the Office of the General Counsel, coordinates the Institute's response to external regulatory agencies concerned with workplace health, safety, and environmental compliance. EHS, Institute management, and the Office of the General Counsel work closely to ensure that a unified and consistent Institute position is provided in response to a governmental inquiry, complaint, or lawsuit.

Any questions or concerns regarding compliance should be brought to the attention of the relevant supervisor or to the director of EHS. Alternatively, concerns can be raised with the appropriate division chair or vice president or the EHS office.

Enforcement

Governmental agencies have established increasingly strict policies to ensure compliance with environmental and safety regulations, including harsh civil penalties and individual criminal prosecution leading to possible imprisonment and substantial fines. Accordingly, the Institute expects all faculty, staff, and students to be vigilant in complying with all environmental and safety requirements to properly conduct their activities at the Institute.

Caltech views compliance with all laws, regulations, and Institute guidelines as conditions of employment, and violation of such requirements shall be considered grounds for disciplinary action, including termination of employment.

Fire Safety

It is the policy of the California Institute of Technology to comply with all applicable laws, regulations, codes, and standards in regard to fires, fire safety, and fire protection. The Institute recognizes that

campus fire safety is vitally important to the Institute community, and thus is committed to maintaining a safe environment for faculty, staff, students, and other members of the Institute community.

The purpose of the Institute policy on fire safety is to provide guidelines for establishing and maintaining fire safety procedures with respect to the undergraduate and graduate student houses and dormitories (student living areas or student housing) at the Institute.

Please refer to <http://www.studaff.caltech.edu/policies.htm> for the complete text of the policy.

Mural Policy

Murals or anything that goes on walls or ceilings in the shared spaces of Caltech's resident houses should not involve offensive material, which includes language or images that reasonable persons would find offensive, that would reasonably interfere with other residents' enjoyment of the facility, and/or that violate Caltech's nondiscrimination or unlawful harassment policies or other Caltech policies. Examples of offensive material include language or images that are racist or sexist or that are derogatory on the basis of national origin, disability, age, religion, or sexual orientation. Graffiti or anything else that makes the houses look deteriorated or degraded is also not acceptable. Students must notify the Housing Office in advance of the intention to put up a mural and of its proposed location. Neither the Housing Office nor Student Activities and Programs (Student Life) will bear the cost of removal if a mural is put up without consultation or differs from the submitted design in ways that make it inappropriate. All murals must comply with the mural policy and be approved following the guidelines stated in the mural policy. For full mural policy text, see http://www.housing.caltech.edu/undergrad/mural_policy.asp.

Missing Students

Missing student policy and procedure have been established to assist in locating Caltech students living in on-campus housing who, based on the facts and circumstances known to Caltech, the Institute has determined to be missing. Please refer to <http://www.studaff.caltech.edu/policies.htm> for the complete text of the policy.

Nondiscrimination and Equal Employment Opportunity

Caltech is committed to equal opportunity for all persons without regard to sex, race, color, religion, national origin, citizenship, ancestry, age, marital status, physical or mental disability, medical condition, genetic information, pregnancy or perceived pregnancy, gender, gender identity or expression, sexual orientation, protected veteran status or any other characteristic or condition protected by the state and federal law. It is the policy of Caltech to provide a work and academic environment free of discrimination as required by federal and state law, including Title IX which prohibits discrimination based on sex in Caltech's educational programs and activities. Discrimination is an act or communication that interferes with an individual's or a group's

ability to participate fully in the Caltech community on the basis of any protected condition or characteristic. Sex discrimination, including sexual harassment and sexual violence (e.g., sexual assault) are prohibited at Caltech. Harassment on the basis of any legally protected characteristic is a form of discrimination and is likewise prohibited by this policy. Caltech will take all reasonable steps to eliminate discrimination, harassment, and sexual violence in its work and academic environment.

Caltech is an equal employment opportunity and affirmative action employer and will, whenever possible, actively recruit and include for employment members of underrepresented minority groups, females, protected veterans or individuals with disabled veteran status, and otherwise qualified persons with disabilities. Caltech will hire, transfer, recruit, train and promote based on the qualifications of the individual to ensure equal consideration and fair treatment of all. All other employment actions, such as work assignments, appointments, compensation, evaluations, training, benefits, layoffs, and terminations are governed by this policy. Personnel actions will be reviewed to ensure adherence to this policy.

Caltech's Associate Vice President for Human Resources and JPL's Director for Human Resources have been assigned to direct the establishment of and to monitor the implementation of personnel procedures to guide our Affirmative Action programs. They will have responsibility to review and update the Affirmative Action plans annually, including responsibility for the audit and reporting system. A notice explaining Caltech's policies will remain posted.

The Provost has been designated as the Equal Employment Opportunity Coordinator for faculty, the Director of Employee & Organizational Development for campus staff, the Associate Deans of Students for undergraduate students, the Dean of Graduate Studies for graduate students, and the Director for Human Resources at the Jet Propulsion Laboratory for employees assigned there. The Assistant Vice President for Equity, Accessibility, and Inclusion Initiatives has been designated as Caltech's Title IX Coordinator. She can be reached at (626) 395-3132, email: TitleIXCoordinator@caltech.edu, or at her office in Room 230, Center for Student Services. The Title IX Coordinator is supported by three deputy coordinators. The Deputy Title IX Coordinator for faculty is Melany Hunt, the Deputy Title IX Coordinator for staff and postdoctoral scholars is Susan Conner, and the Deputy Title IX Coordinator for JPL is Richard Conti.

Inquiries concerning the interpretation and application of this policy should be referred to the appropriate designated individual. Management is responsible for monitoring decisions regarding personnel actions to ensure that these decisions are based solely on the individual's merit, and on legitimate, nondiscriminatory job requirements for the position in question and the reasonableness of any necessary accommodations for persons with a disability.

Anyone who witnesses or experiences conduct he/she believes to be in violation of this policy is urged to contact any of the above mentioned coordinators, the individuals identified in Caltech's harassment policy, the Caltech Employee & Organization Development office or JPL Employee Relations Group immediately. Complaints, including complaints under Title IX, will be investigated promptly using the Procedures Regarding Unlawful Harassment, including Sexual Violence. Individuals who violate this policy may be subject to disciplinary action up to and including termination of employment or expulsion.

In addition, an employee who believes he or she has been subject to harassment or discrimination has the right to file a complaint with the Federal Equal Employment Opportunity Commission or the California Department of Fair Employment and Housing, which have the authority to remedy violations. Employees, students and others participating in Caltech's educational programs and activities may file complaints with the U.S. Department of Education Office for Civil Rights at (415) 486-5555 (or ocr.sanfrancisco@ed.gov) or (800) 421-3481 (or OCR@ed.gov).

Employees and applicants shall not be subjected to harassment, intimidation, threats, coercion, discrimination, or retaliation because they have engaged in or may engage in any of the following activities: filing a complaint; assisting or participating in an investigation, compliance review, hearing or any other activity related to the administration of any federal, state, or local law requiring equal opportunity; opposing any act or practice made unlawful by any federal, state or local laws requiring equal opportunity; exercising any state legal right protected by federal, state or local law requiring equal opportunity.

To ensure equal employment opportunity and nondiscrimination, each member of the Caltech community must understand the importance of this policy and his/her responsibilities to contribute to its success. The President of Caltech fully supports the Institute's equal opportunity and affirmative action policies.

Related Policies and Procedures

- Unlawful Harassment
- Procedures Regarding Unlawful Harassment
- Sexual Violence
- Disability and Reasonable Accommodation

Sexual Violence

Policy

All members of the Caltech community have the right to be treated, and the responsibility to treat others, with dignity and respect. These principles are fundamental to the educational and intellectual mission of Caltech. Consistent with these principles, it is the policy of Caltech to provide a work and academic environment free of sexual violence.

All forms of sexual violence are considered to be serious offenses. A broad range of behaviors can be classified as sexual violence. Sexual

violence can be committed by individuals of any gender, regardless of an individual's sexual orientation or gender identification, and can occur between individuals of the same gender or different genders, strangers or acquaintances, as well as people involved in intimate or sexual relationships. Sexual violence is defined as physical sexual acts perpetrated forcibly and/or against a person's will, or where the person is incapable of giving consent. Sexual violence includes rape, sexual assault, sexual assault with an object, forced sodomy, statutory rape, forced oral contact, sexual battery, sexual coercion, sexual intimidation, and the threat of sexual assault. Sexual violence for purposes of this policy also includes sexual exploitation, stalking, domestic violence and dating violence.

Sexual exploitation occurs when an individual(s) takes sexual advantage of another for his or her own or another's benefit or advantage. Stalking is a course of conduct directed at an individual that would cause a reasonable person to fear for his or safety or the safety of others, or suffer substantial emotional distress. Dating violence is any act of violence, or threatened act of violence, against a person who is (or has been) in a romantic or intimate relationship with the alleged perpetrator. Domestic violence is violence committed by a current or former spouse, by a person with whom the victim shares a child, who is or has cohabitated with the victim, or by person similarly situated to a spouse, and by any other person against someone who is protected from that person's acts under domestic or family violence laws.

Consent

Consent is a crucial component of the Caltech policy. Consent is the affirmative, conscious, voluntary, informed, and uncoerced agreement through words and/or actions, which a reasonable person would interpret as a willingness to participate in mutually agreed-upon sexual activity. Sexual activity should occur only when all participants willingly and affirmatively choose to engage in particular acts. It is the responsibility of the initiator of the sexual activity, at each stage, to obtain effective consent. The use of intimidation, coercion, threats, force, or violence negates any consent obtained.

Indications that consent is not present include, but are not limited to:

- A verbal "no" (no matter how indecisive) or resistance (no matter how passive)
- When physical force is used, or when there is a reasonable belief of the threat of physical force
- When any kind of coercion is present

Affirmative consent must be ongoing throughout a sexual activity and can be revoked at any time. The existence of a dating relationship between the persons involved, or the fact of past sexual relationship between them, should never by itself be assumed to be an indicator of consent. Consent cannot be inferred from silence, passivity or lack of active resistance. Consent cannot be inferred from consent to a prior

or different activity. If consent is revoked, the other party must immediately stop whatever sexual activity is occurring.

A person will not be considered to have given consent if he or she is incapable of making an intentional decision to participate in a sexual activity, including being unconscious or asleep; incapacitated by drugs, alcohol, or medication so that the complainant could not understand the fact, nature or extent of the sexual activity; or if they are unable to communicate due to a mental or physical condition. A person is considered to be incapacitated when that person lacks the ability to make informed, rational judgments and decisions to engage in sexual activity. States of incapacitation include, but are not limited to, unconsciousness, sleep, and blackouts. Where alcohol or drugs are involved, incapacitation is defined with respect to how the alcohol or other drugs consumed affects a person's decision-making capacity, awareness of consequences, and ability to make fully informed judgments.

Being intoxicated or otherwise impaired does not diminish one's responsibility to obtain consent. The question is whether or not the person who initiated the sexual activity knew or whether a sober and reasonable person in the same position should have known whether the other person gave effective consent.

Scope

This policy applies to all students, faculty, staff, postdoctoral scholars, volunteers, interns, vendors, independent contractors, visitors and any other individuals regularly or temporarily employed, studying, living, visiting, or otherwise participating in Caltech's educational programs and activities or conducting business or having any official capacity with Caltech or on Caltech property.

This policy applies to sexual violence occurring on Caltech property and at Caltech sponsored events and in Caltech programs that take place off campus.

Prohibition against Discrimination

Sexual violence is a form of sex discrimination and is prohibited by Title IX of the Education Code and other federal and state laws. Caltech will not tolerate sexual violence, and is committed to educating the community in ways to prevent its occurrence.

Any Caltech community member who has experienced sexual violence, whether by a stranger or non-stranger, is encouraged to immediately report the incident to Caltech as well as local law enforcement, and to seek assistance from a medical provider. Reports to Caltech and law enforcement may be pursued simultaneously.

Members of the Caltech community are encouraged to report sexual violence regardless of where the incident occurred, or who committed it. Even if Caltech does not have jurisdiction over an alleged perpetrator, Caltech will still take prompt action to provide for the safety and wellbeing of the individual reporting and the campus community. Caltech will promptly investigate complaints to determine what occurred and take reasonable steps to remedy the effects of the sexual

violence and prevent recurrence of the behavior. Caltech will provide assistance in notifying law enforcement if the individual who experienced sexual violence so chooses. An individual who has experienced sexual violence also has the right to decline to notify law enforcement or Caltech. Caltech has an obligation under State law to report incidents of sexual violence to law enforcement. Caltech will not report identifying information about the victim without the victim's consent after being notified of his or her right to have personally identifying information withheld. If the victim does not consent to be identified, personally identifying information about the accused also will not be provided.

Prohibition against Retaliation

No member of the Caltech community will be retaliated against for making a good-faith report of alleged harassment or for participating in an investigation, proceeding, or hearing conducted by Caltech, or by a state or federal agency. Overt or covert acts of retaliation, reprisal, interference, discrimination, intimidation or harassment against an individual or group for exercising their rights under Title IX is unlawful. Retaliation against any member of the Caltech community for exercising their rights under Title IX or this policy is strictly prohibited. Caltech will take steps to prevent retaliation and will take prompt and appropriate corrective action if retaliation occurs. Individuals who violate this policy may be subject to disciplinary action up to and including termination or expulsion.

Title IX Coordinator & Deputy Coordinators

The Title IX Coordinator is responsible for Caltech's overall response to sex discrimination, sexual harassment and sexual violence. The Title IX Coordinator oversees all Title IX complaints and identifies and addresses any patterns of systemic problems that arise. The Title IX Coordinator also oversees the application of Caltech's policies and implementation of the processes and procedures to resolve complaints of sexual violence to ensure consistent treatment of parties involved and prompt and equitable resolution of complaints. The Title IX Coordinator is supported by three Deputy Coordinators. The Title IX Coordinator and Deputy Coordinators can answer questions regarding Title IX.

Title IX Coordinator

Felicia Hunt (faculty, staff, JPL, postdoctoral scholars,
and students)

Phone: (626) 395-6346

E-mail: TITLEIXCOORDINATOR@CALTECH.EDU

Office: 230 Center for Student Services

Contact information for the Deputy Title IX Coordinators is available in the attached procedures and at <http://titleix.caltech.edu/coordinator>.

Privacy v. Confidentiality

Caltech is committed to protecting the privacy of all individuals involved in a report of sexual violence. Caltech takes reasonable and appropriate steps to preserve the complainant's and respondent's privacy and protect the confidentiality of information. All Caltech employees who are involved in the Title IX response, including the Title IX Coordinator, Deputy Coordinators, and investigators, receive specific instruction about respecting and safeguarding private information. Throughout the process, every effort is made to protect the privacy interests of all individuals involved, in a manner consistent with the need for a thorough review of the matter.

Privacy generally means that information related to a report of sexual violence will only be shared with those individuals who have a "need to know" in order to assist in resolving the matter. These individuals will be discreet and will respect the privacy of all individuals involved.

Confidentiality means that information shared by an individual with designated campus or community professionals cannot be revealed to any other individual without the express permission of the individual. These campus and community professionals are listed under "Confidential Resources" in the policy. These individuals are prohibited from breaking confidentiality unless there is an imminent threat of harm to self or others or as otherwise legally required. When a report involves suspected abuse of a minor under the age of 18, these confidential resources are required by state law to notify child protective services and/or local law enforcement.

Options for Immediate Assistance & Preservation of Evidence

Because sexual violence may involve physical trauma and is a crime, you are urged to seek medical treatment as soon as possible. You are strongly encouraged to preserve all physical evidence of the assault. This may be needed to prove criminal sexual violence, or for obtaining a protective order. Do not shower, bathe, douche, eat, drink, wash your hands, or brush your teeth until after you have had a medical examination. Save all of the clothing you were wearing at the time of the assault. Place each item of clothing in a separate paper bag. Do not use plastic bags. Do not clean or disturb anything in the area where the assault occurred.

Caltech also encourages you to seek immediate psychological and support/advocacy services provided by campus and/or community services. Campus Security and the Protective Services Division at JPL will help you contact on-campus resources, provide you with information regarding off-campus resources for advocacy, medical treatment, and forensic evidence collection, and will provide you with taxi voucher to access the off-campus resources.

24-Hour a Day/7 Days a Week
Campus Security
(626) 395-5000

JPL Protective Services Division

(818) 393-3333

(818) 354-3333

If you want Security to contact a confidential campus resource for you (or at JPL for the JPL Protective Services Division to contact the JPL after hours Employee Assistance Program/Life Matters), you simply need to give them a number where the confidential resource can contact you. You do not have to provide your name or any information regarding the incident.

Peace Over Violence (24-hour emergency medical care and forensic services, counseling and psychotherapy, advocacy, and accompaniment services)

892 N. Fair Oaks Avenue, Suite D

Pasadena, CA 91103

(626) 584-6191

(626)793-3385 (24 hours)

San Gabriel Medical Center (for treatment and forensic evidence collection (the “rape kit”)

438 West Las Tunas Drive

San Gabriel, CA 91776

(626) 289-5454

Sexual Assault Response Team (SART) Hotline: (877) 209-3049
(24 hours)

The Rape Treatment Center at Santa Monica-UCLA Medical Center

(24-hour emergency medical care and forensic services (the “rape kit”)

(310) 319-4000

www.911rape.org

Huntington Memorial Hospital Emergency Room (24-hour emergency medical care)

100 W. California Blvd.

Pasadena, CA 91105

(626) 397-5112

Pasadena Police Department

207 N. Garfield Ave.

Pasadena, CA 91101

Call 911 for Emergency Response

Non-Emergency Response: (626) 744-4241

Note that medical providers (but not psychological counselors) in California are required to notify law enforcement when they receive a report of sexual assault.

Confidential Resources

Members of the Caltech community may access the offices below for confidential support. Counselors and designated confidential advocates in these offices will listen and help identify options and next steps. They can also help you decide what plan of action feels most comfortable. Talking to any of these individuals does not constitute reporting an incident to Caltech. Although they are not involved in Caltech's formal response to an incident, or possible legal action, staff members in each of these offices are available to provide support to a victim or accused as he or she moves through the steps related to either or both of these processes. Staff in these offices may be able to help you develop a clear statement that contains all of the relevant information regarding your complaint, or may recommend that you speak with another campus office for additional specialized services or resources, including how to obtain a protective order.

If a victim who speaks with a mental health professional or other confidential resource requests confidentiality, Caltech will be unable to conduct an investigation into the particular incident or pursue disciplinary action against the alleged perpetrator.

Even so, these mental-health professionals and other confidential resources will assist the victim in receiving other necessary protection and support, such as victim advocacy, academic support or accommodations, disability, health or mental health services, and changes to living, working or course schedules. A victim who at first requests confidentiality may later decide to file a complaint with Caltech and/or report the incident to law enforcement. These mental-health professionals and confidential resources will provide the victim with assistance in filing a complaint if the victim wishes to do so.

Mental-Health Professionals

Mental-health professionals in the Student Counseling Center and the Staff and Faculty Consultation Center provide mental-health counseling to the campus community. The JPL Employee Assistance Program/Life Matters provides mental-health counseling to the JPL community. They will not report any information about an incident to the Title IX Coordinator unless requested by their client. They may report aggregate statistics (with no identifying information) for inclusion in Caltech's Annual Security Report. They can be contacted 24 hours a day/7 days a week at:

- For students:
(626) 395-8331 Student Counseling Center
(626) 395-5000 after hours via Security
- For faculty, campus staff, and postdoctoral Scholars:
(626) 395-8360 Staff and Faculty Consultation Center
(626) 395-5000 after hours via Security

- For JPL employees:
 - (818) 354-3680 JPL Employee Assistance Program (on site)
 - (800) 367-7474 JPL Employee Assistance Program/Life Matters (off site and after hours)
 - (818) 354-3333 after hours via JPL Protective Services Division
 - (818) 393-3333

Other Campus Confidential Resources

Designated confidential resources at the Caltech Center for Diversity and the Health Educator's Office can generally talk to a victim without revealing any personally identifying information about an incident to Caltech. A victim can seek assistance and support from these individuals without triggering a Caltech investigation that could reveal the victim's identity or that the victim has disclosed the incident.

While maintaining a victim's confidentiality, the Caltech Center for Diversity and the Health Educator's Office will report the nature, date, time and general location of an incident to the Title IX Coordinator. This limited report, which includes no information that directly or indirectly identifies the victim, helps keep the Title IX Coordinator informed of the general extent and nature of sexual violence on- and off- campus so that coordinator can track patterns, evaluate the scope of the program and formulate appropriate campus-wide responses. These confidential resources may report aggregate statistics (with no identifying information) for inclusion in Caltech's Annual Security Report.

- Caltech Center for Diversity (students): (626) 395-5772 or (626) 395-8108
- Health Educator (students): (626) 395-2961

Reporting to Caltech

Caltech is required to take corrective action if a "responsible employee" knew or reasonably should have known about sexual violence. A "responsible employee" is a Caltech employee who has the authority to redress sexual violence, who has the duty to report incidents of sexual violence or other student misconduct, or whom a student or employee could reasonably believe has the authority or duty to do so.

When an individual tells a responsible employee about an incident of sexual violence, the responsible employee must report to the Title IX Coordinator or another individual listed below all relevant details about the alleged sexual violence. Caltech is committed to protecting the privacy of all individuals involved in a report of sexual violence. All employees involved in the response to a report of sexual violence understand the importance of properly safeguarding private information. Caltech will make every effort to protect individuals' privacy interests consistent with Caltech's obligation to investigate reports made to Caltech. Caltech will not share information with law enforcement that identifies the victim without the victim's consent.

The following individuals are responsible employees for reporting purposes.

Campus Responsible Employees:

Title IX Coordinator and Deputy Coordinators
Chief of Security
Director of Security Operations
Security Officers
Provost
Vice Provosts
Division Chairs
Division Administrators
Deans
Associate Deans
Student Affairs Directors
Master of Student Housing
Residence Life Coordinators
Resident Associates
Coaches
Director of Employee & Organization Development
Employee Relations Consultants
Associate Vice President of Human Resources
Department Heads
Faculty with administrative responsibilities

JPL Responsible Employees:

Title IX Coordinator and Deputy Coordinator
JPL Protective Services Group Supervisor, Investigations
Director for Human Resources
Deputy Director for Human Resources
Human Resources Business Partners
Section Managers

If you would like support and guidance in filing a complaint, please contact the Title IX Coordinator or a Deputy Coordinator, one of the Deans or Associate Deans, the Director of Employee & Organization Development in Human Resources, or the JPL Section Manager of Talent Management or Human Resources Business Partners at JPL.

No member of the Caltech community will be retaliated against for making a good-faith report of alleged sexual violence or for participating in an investigation, proceeding, or hearing conducted by Caltech, or by a state or federal agency.

Reports Involving Minors

Every member of the Caltech community who knows of, or reasonably suspects, child abuse, including sexual violence, has a personal responsibility to report to Caltech Security or the JPL Division of Protective Services immediately. Caltech employees who are mandatory reporters have additional reporting obligations, including reporting immediately

to LA County Child Protection or the local police department. See the Violence Prevention policy for more information.

Anonymous Reporting

Although Caltech encourages victims to talk to someone, Caltech provides the following resources for anonymous reporting:

Campus Hotline (626) 395-8787 or (888) 395-8787
JPL Ethics Hotline (818) 354-9999
JPL Protective Services Division's Workplace Violence Hotline
(818) 393-2851

For either Campus or JPL by submitting a compliance HOTLINE CONTACT FORM

Campus Security can also receive anonymous reports of sexual violence at (626) 395-5000.

Contacting one of these anonymous reporting resources may trigger an investigation, and if you share personally identifying information, you will be notified if an investigation occurs.

Notification of Law Enforcement

Individuals who experience sexual violence are encouraged to notify local law enforcement. Caltech will provide assistance in reporting such incidents if the victim requests. Victims of sexual violence have the right not to notify law enforcement.

Caltech has an obligation under State law to report incidents of sexual violence to law enforcement. Caltech will not report identifying information about the victim without the victim's consent after being notified of his or her right to have personally identifying information withheld. If the victim does not consent to be identified, personally identifying information about the accused also will not be provided.

Requests for Confidentiality

If a member of the Caltech community discloses an incident to a responsible employee but requests that his or her name not be used or requests that no investigation into a particular incident be conducted or that no disciplinary action be taken, Caltech must weigh the request against its obligation to provide a safe, non-discriminatory environment. The Title IX Coordinator or designee will evaluate all requests for confidentiality once a responsible employee is on notice of the alleged sexual violence. Factors that the Title IX Coordinator or designee will consider include circumstances that suggest there is an increased risk of the alleged perpetrator committing additional acts of sexual violence or other violence. Factors may also include circumstances that suggest there is an increased risk of future acts of sexual violence under similar circumstances, whether there was a weapon involved, the age of a student victim, and whether there are other means to obtain relevant evidence.

Caltech will take all reasonable steps to investigate or otherwise determine what occurred and respond to the complaint consistent with the request not to use the complainant's name or request not to pursue an investigation or that no disciplinary action be taken, but its ability to do so may be limited based on the nature of the request by the complainant. When Caltech is unable to take action consistent with the request of the complainant, the Title IX Coordinator will inform the complainant about Caltech's chosen course of action, which may include Caltech seeking disciplinary action against the respondent. Alternatively, the course of action may also include steps to limit the effects of the alleged sexual violence and prevent its recurrence that do not involve formal disciplinary action against the respondent or revealing the identity of the complainant. If the complainant insists that his or her name not be disclosed to the respondent, the Title IX Coordinator will explain that Caltech's ability to respond may be limited, including pursuing disciplinary action against the alleged perpetrator. The Title IX Coordinator will also advise the complainant that Caltech and Title IX prohibit retaliation, and that Caltech will take steps to prevent retaliation and responsive corrective action if it occurs. If the complaint includes allegations that may constitute a possible crime, the complainant will be notified of his or her right choose whether to file a criminal complaint.

Timely Warnings

In the event Caltech believes that there is a serious or continuing threat to the campus community, Caltech will issue a timely warning. Timely warnings will not disclose the name of the victim.

Clery Reporting

The Clery Act requires Caltech to issue an Annual Security Report, which includes crime statistics and information about campus crime prevention programs and policies. Campus Security gathers crime statistics from security reports, Pasadena Police Department information, and reports by Campus Security Authorities. Crime statistics do not disclose any identifying information about a complainant, respondent or third parties. Crimes reported in the Annual Security Report that are addressed by Title IX are forcible and non-forcible sexual offenses, stalking, dating violence, and domestic violence. For more information and statistics for the past three years, see the current Annual Security Report.

Contacting the Office of Civil Rights

Employees, students and others participating in Caltech's educational programs and activities may direct questions regarding Title IX or file complaints with the U.S. Department of Education Office for Civil Rights, (415) 486-5555, OCR.SANFRANCISCO@ED.GOV or (800) 421-3481, OCR@ED.GOV.

In addition, employees have the right to file a complaint with the Federal Equal Employment Opportunity Commission or the

California Department of Fair Employment and Housing, which have the authority to remedy violations.

Informational Resources

Information on harassment and sexual violence, as well as copies of Caltech's Sexual Violence, Nondiscrimination and Equal Employment Opportunity, Violence Prevention, and Unlawful Harassment policies are available from Caltech's Title IX Coordinator and Deputy Coordinators, Student Affairs and Deans offices, the Caltech Center for Diversity, Resident Associates, the Staff and Faculty Consultation Center, Employee & Organization Development at campus, and the Human Resources Business Partners and the Employee Assistance Program/Life Matters at JPL. The Policies are published in the Caltech Catalog and on the following Caltech websites: Caltech Human Resources, JPL Human Resources, Title IX, and Student Affairs.

Procedures for Responding to and Resolving Complaints of Sexual Violence at Caltech

Caltech will take prompt and appropriate action to address all reports of sexual violence in a fair and impartial manner. The complainant, respondent, and all other participants in the process will be treated with dignity, care and respect. All complaints of sexual violence will be handled promptly, fairly, thoroughly and impartially from the initial assessment through the resolution.

These procedures are for the benefit of the Caltech community and do not apply in cases involving complainants and/or respondents who are not current Caltech students, faculty, staff, postdoctoral scholars, volunteers, and interns. When a complaint involves a third party who is not affiliated with Caltech, Caltech's ability to investigate and take action against the perpetrator may be limited. However, in all cases, Caltech will conduct an inquiry into what occurred and take prompt action as is practicable to provide for the safety and well-being of the complainant and the campus community.

As used in these procedures, a complainant refers to the individual who is reported to be the subject of sexual violence. A respondent refers to the individual who reportedly committed the sexual violence. A third party refers to any other participant in the process, including a witness to the incident or an individual who makes a report on behalf of someone else.

Interim Measures

Upon receipt of a report of sexual violence, Caltech will take prompt measures to protect the rights of both the complainant and the respondent as appropriate. Caltech will immediately assess whether there is a threat to the complainant and/or other members of the community and will take steps necessary to address such risk. These steps may include interim safety measures to provide for the safety of individuals and the campus community.

Interim safety measures, administrative changes and/or academic changes can be made at any stage in the process to protect the rights of either party. They will be made by the appropriate administrators. These changes should be discussed with the appropriate responsible Caltech official: Provost, EOD Director, Deans, Associate Deans, Associate Vice President for Human Resources on campus, or Director for Human Resources at JPL. Changes affecting faculty, staff and employees at JPL might include transfer of supervisory or evaluative responsibility regarding grading, supervision, tenure review, letters of recommendation, and/or changes to office assignments. For students, these changes might include the complainant's option to avoid contact with the respondent via a "no contact" order from the Deans, changes to classes and/or housing, Caltech-imposed leave for the respondent, as well as any other remedy that can be tailored to the involved individuals to achieve the goals of this policy. When taking steps to separate a complainant and respondent, Caltech will endeavor to minimize the burden on the complainant. Care will be taken to protect both parties with the greatest degree of privacy possible. If a complainant wishes to seek a temporary restraining order or similar judicial order, Caltech will help the complainant with that process.

Measures for the broader student population may include but are not limited to: developing materials on sexual violence, further training for employees regarding Title IX, education of students on bystander intervention and/or sexual violence prevention, or taking steps to clearly communicate that Caltech does not tolerate sexual violence and will respond to any incidents and to any student who reports such incidents.

Prohibition against Retaliation

Retaliation against any member of the Caltech community involved in the process of responding to and resolving a report of sexual violence, including complainants, respondents and third parties, is strictly prohibited. Caltech recognizes that retaliation can take many forms, may be committed by or against an individual or group, and that a complainant, respondent or third party may commit or be the subject of retaliation. Caltech will take steps to prevent retaliation and will take prompt and appropriate corrective action to stop retaliation if it occurs.

False Reports

Caltech will not tolerate intentional false reporting of incidents. A good-faith complaint that results in a finding of "no violation" is not considered a false report. However, when a complainant or third party is found to have fabricated allegations or to have given false information with malicious intent or in bad faith, they may be subject to disciplinary action.

Amnesty for Student Alcohol or Drug Use

Caltech encourages reporting of sexual violence. It is in the best inter-

ests of the Caltech community that complainants and third parties report sexual assault to Caltech. To encourage reporting, a student or witness in an investigation will not be subject to disciplinary action for a violation of the honor code or Caltech's substance Abuse policy at or near the time of the incident, unless Caltech determines that the violation was egregious, including but not limited to, an action that places the health or safety of any other person at risk. Caltech may however, initiate an educational discussion or pursue other educational remedies regarding alcohol or drugs.

Making a Report to Caltech

A member of the Caltech community who wishes to report sexual violence should do so as soon as possible after the assault, although reports (hereinafter "complaints") may be made at any time. Complaints can be made orally or in writing. Complaints should be brought to the attention of one of the following individuals or other responsible employees listed in the policy.

Title IX Coordinator

Felicia Hunt (faculty, staff, postdoctoral scholars, and students)

Phone: (626) 395-6346

E-mail: TITLEIXCOORDINATOR@CALTECH.EDU

Office: 230 Center for Student Services

Deputy Title IX Coordinator for faculty

Melany Hunt

Phone: (626) 395-6339

E-mail: HUNT@CALTECH.EDU

Office: 104 Parsons Gates

Deputy Title IX Coordinator for staff and postdoctoral scholars

Susan Conner

Phone: (626) 395-5930

E-mail: SUSAN.CONNER@CALTECH.EDU

Office: 206 Central Engineering Services

Deputy Title IX Coordinator for JPL

Richard Conti

Phone: (818) 354-9837

E-mail: RICHARD.A.CONTI@JPL.NASA.GOV

Office: Human Resources T1720-164

Initial Title IX Assessment

For every report of sexual violence, Caltech's Title IX Coordinator will make an initial assessment of the complaint which will include an immediate assessment of any risk of harm to individuals or to the campus community and will take steps necessary to address those risks. These steps may include interim protective measures to provide for the safety of the complainant and the campus community as described above.

The complainant will be provided with information on the complainant's rights and options under the Institute's Sexual Violence

policy and these procedures, written materials about the availability of, and contact information for, on- and off-campus resources and services, and coordination with law enforcement. The need for and types of interim measures also will be discussed.

The Title IX Coordinator may also meet with the respondent and other relevant parties as part of the initial assessment. If the Title IX Coordinator meets with the respondent, he or she will be provided with information on the respondent's rights and options under the Institute's Sexual Violence policy and these procedures, and written materials about the availability of, and contact information for campus resources and services.

The initial assessment will proceed to the point where a reasonable assessment of the safety of the individual and of the campus community can be made and an appropriate approach to resolution can be determined. Thereafter, the Title IX Coordinator may refer the complaint for formal investigation, administrative resolution or other appropriate disposition, depending on a variety of factors, such as the complainant's request that his or her name not be used, complainant's request that no investigation into a particular incident be conducted or that no disciplinary action be taken, the risk posed to any individual or the campus by not proceeding, the nature and seriousness of the allegations, whether there have been other reports/complaints of sexual violence involving the respondent, and whether the allegations are contested. The Title IX Coordinator will obtain the complainant's agreement to proceed with the proposed approach to resolution, whether it be a formal investigation, administrative resolution or another alternative approach.

Caltech will investigate reports of sexual violence consistent with its obligations under applicable law. For complaints solely covered by Title IX, the Title IX Coordinator will seek consent from the complainant to proceed with a formal investigation or an administrative resolution. If the complainant requests confidentiality or asks that the complaint not be pursued, Caltech will still take all reasonable steps to investigate or otherwise determine what occurred and respond to the report. If the complainant refuses to have his/her name disclosed to the respondent, the Title IX Coordinator will explain that Caltech's ability to investigate and respond may be limited. If the complaint includes allegations that may constitute a possible crime, the Title IX Coordinator will notify the complainant of his/her right to file a criminal complaint or to choose not to notify law enforcement.

Administrative Resolution

The Title IX Coordinator, with the complainant's and the respondent's agreement, may offer the opportunity to resolve the sexual violence complaint by Administrative Resolution. Administrative Resolution provides an opportunity for the respondent to accept responsibility for his or her alleged conduct and proceed to a resolution without a formal investigation.

If the Administrative Resolution option is agreed to by the complainant, the Title IX Coordinator will meet with the respondent

to review the allegations. The Title IX Coordinator will provide the respondent with information on the respondent's rights and options under the Institute's Sexual Violence policy and these procedures, and written materials about the availability of, and contact information for campus resources and services. The Title IX Coordinator will offer the respondent the opportunity to resolve the complaint by Administrative Resolution by accepting responsibility for the alleged conduct. If the respondent elects to acknowledge that the alleged conduct occurred and takes responsibility for the alleged sexual violence, the respondent will sign a written acknowledgement and the matter will be referred to the appropriate Caltech official for a decision concerning sanctions and any other remedial action that may be appropriate. The complainant and respondent will both be notified simultaneously in writing of the resolution, including any sanctions against the respondent. Either party may appeal the sanction imposed.

If the respondent contests responsibility for the alleged conduct, the Administrative Resolution process will be concluded and the case will be referred for Formal Investigation or other resolution as appropriate.

Formal Investigation

The following procedures apply with respect to complaints referred for Formal Investigation:

- The purpose of the investigation is to determine the facts relating to the complaint.
- All participants involved in the investigation will receive a fair process and be treated with dignity, care, and respect.
- All parties may have an advisor of their choice accompany them when reporting, or responding to, allegations of sexual violence. The advisor may not speak on behalf of the party he or she is accompanying.
- Caltech's investigation will occur independently from any legal/criminal proceedings that may take place. Caltech may defer fact gathering for a short time during only the initial stages of a criminal investigation.
- The individuals involved in the investigation will respect the privacy of the complainant, respondent, and that of all parties involved while conducting a thorough review of the complaint.
- Investigators will be trained regularly in issues related to sexual violence and how to conduct an investigation process that protects the safety of all involved and promotes accountability. Caltech will typically use a team of two investigators, though an individual, a committee or an outside consultant may conduct the investigation. The investigators chosen must be impartial and free of any conflict of interest.
- The complainant and respondent will be informed of the relevant procedures, and may object to the investigator(s) by notifying the appropriate Caltech official in writing.
- If internal investigators are used, at least one investigator should be from the same area as the respondent.

- Within a reasonable length of time after the complaint has been filed, the respondent will be notified of the nature of the complaint, and an investigation will begin. If interim measures are needed to protect the rights of the complainant and/or respondent during the investigation, the appropriate administrators shall see that they are made.
- Caltech's policies on Sexual Violence, Nondiscrimination and Equal Employment Opportunity and Unlawful Harassment will be reviewed with both parties and copies will be provided to them.
- The complainant and respondent will be informed that Caltech will not tolerate retaliation, will take steps to prevent retaliation, and will take strong responsive action if retaliation occurs. The complainant and respondent will be advised to notify Caltech immediately of any retaliation that occurs. They should immediately notify any of the individuals to whom a complaint can be made if anyone associated with the matter is under continuing threat or is being subject to retaliation.
- The investigator(s) will summarize for the respondent the evidence in support of the complaint to allow the respondent the opportunity to reply.
- The investigation will be treated as private to the extent possible and all parties will be advised to maintain privacy. Caltech administrators will be informed on a need-to-know basis. Caltech will make reasonable and appropriate efforts to preserve the complainant's and respondent's privacy and protect the confidentiality of information.
- The complainant and respondent will be given equal opportunity to present their cases separately to the investigator(s), to suggest others who might be interviewed, and to present other evidence. The investigator(s) can, if appropriate, interview other parties to reach findings and conclusions.
- The investigators will investigate any allegations that alcohol or drugs were involved in the incident.
- The investigators will not ask questions or seek evidence of the complainant's prior sexual conduct with anyone other than the respondent. Furthermore, evidence of a prior consensual dating or sexual relationship between the complainant and respondent itself does not imply consent or preclude a finding of sexual violence.
- All parties who participate in investigative interviews may submit written statements. Investigatory meetings will not be recorded.
- Both parties will be kept informed of the status of the investigation.
- Complaints will be investigated and resolved within a reasonably prompt time frame after the complaint has been made, generally within 60 days (not including any appeal), though this time frame may be extended depending on factors, including

but not limited to, the complexity of the case.

- Investigative files will be maintained in the Title IX Coordinator's office.

Substance Abuse

The California Institute of Technology ("Caltech") is committed to providing a safe, healthy, and productive work and academic environment for all its faculty, staff, postdoctoral scholars and students. Consistent with its concern for the well-being of its faculty, staff, postdoctoral scholars and students, it is a Caltech policy to maintain a work and academic environment free from drug and alcohol abuse. Faculty, staff, postdoctoral scholars and students are required to comply with this policy and the related guidelines provided by the academic divisions and student organizations.

The unlawful manufacture, distribution, cultivation, dispensation, possession, sale, offer to sell, purchase, offer to purchase, and/or unlawful use of controlled substances* or alcohol on the Caltech campus or its offsite locations, including the Jet Propulsion Laboratory ("JPL"), or as any part of its activities, is prohibited. (*Controlled substances include, but are not limited to, marijuana, heroin, cocaine, LSD, and amphetamines.) In addition, every employee is required to remain free from the influence of controlled substances, alcohol, or any substance that may impair the employee's ability to perform his/her job duties safely or productively, or that may otherwise impair his/her senses, coordination, or judgment while on duty. Any employee reporting to work (or otherwise at work) under the influence of, or having present in his/her body, any prescribed drug, alcohol, or other substances or medication that may adversely affect the employee's ability to work in a safe, productive, or efficient manner, must advise his/her supervisor. Caltech may require an employee to submit to drug and alcohol testing consistent with Institute policy and applicable federal and state law.

As a condition of continued admission, every student is required to comply with this policy. As a condition of employment, all Caltech employee (this includes faculty, staff, postdoctoral scholars and student employees), regardless of their location, are required to comply with this policy. A Caltech employee who violates this policy will be subject to disciplinary action up to and including termination of employment. A violation of this policy is likely to result in termination, even for a first offense. Similarly, all students, not just student employees, should understand that disciplinary action including suspension or expulsion may be invoked for violation of this policy and that intoxication is never an excuse for misconduct. Legislation within the last ten years allows institutions of higher education to contact parents when their adult child violates a school's alcohol or drug policy. If a student's behavior with respect to alcohol and drugs presents a danger to himself/herself and/or others, Caltech may inform the parents.

A faculty, staff, postdoctoral scholar or student who is convicted (including a plea of *nolo contendere* [no contest]) of a criminal drug

statute violation must, within five (5) calendar days after the conviction, notify Caltech of such conviction. A Campus employee should inform the Executive Director of Human Resources and students should inform his/her dean. A JPL employee should inform the People Services Section Manager in Human Resources.

Persons who are not employees of Caltech, but who perform work at Caltech for its benefit (such as contractors and their employees, temporary employees provided by agencies, visitors engaged in joint projects at Caltech, etc.), are required to comply with this policy. Violation of this policy is likely to result in being barred from the workplace even for a first offense.

Health Risks

The use of any mind-or mood-altering substance, including alcohol, can lead to psychological dependence which is defined as a need or craving for the substance and feelings of restlessness, tension, or anxiety when the substance is not used. In addition, with many substances, use can lead to physical tolerance, characterized by the need for increasing amounts of the substance to achieve the same effect and/or physical dependence, characterized by the onset of unpleasant or painful physiological symptoms when the substance is no longer being used. As tolerance and psychological or physical dependence develop, judgment becomes impaired and the individual often does not realize he/she is losing control over the use of the substance and that he/she needs help.

It is impossible to predict accurately how an individual will react to a specific drug or to alcohol because effects vary depending on the person, environmental variables, the dosage and potency of the substance, the method of taking the substance, the chronicity of use, and whether the substance is taken in conjunction with other substances. Illegal drugs have particularly unpredictable effects due to variability in dosage and purity. Further, the overall potency of street drugs has increased dramatically over the past two decades, making users increasingly susceptible to negative effects.

Alcohol acts as a depressant to the central nervous system and can cause serious short- and long-term damage. Short-term effects include nausea, vomiting, and ulcers; more chronic abuse can lead to brain, liver, kidney, and heart damage, and even to eventual death. Ingesting a large amount of alcohol at one time can lead to alcohol poisoning, coma, and death. Drugs such as LSD, amphetamines, marijuana, and alcohol alter emotion, cognition, perception, physiology, and behavior in a variety of ways. Health risks include but are not limited to depression, apathy, hallucinations, paranoia, and impaired judgment, and all substances have an adverse effect on pregnancy. When two or more substances are combined, the effect is often stronger than their additive sum.

Local, State, and Federal Legal Sanctions

Local, state, and federal laws establish severe penalties for violations of drug and alcohol statutes. These sanctions, upon conviction, may

range from a fine to life imprisonment. In the case of possession and distribution of illegal drugs, these sanctions could include the seizure and summary forfeiture of property, including vehicles. It is especially important to know that federal laws have established penalties for illegally distributing drugs to include life imprisonment and fines in excess of \$1,000,000. Some examples of local or state laws are as follows.

- Unlawful possession of a narcotic drug is punishable by imprisonment in the state prison.
- The purchase, possession, or consumption of any alcoholic beverages (including beer and wine) by any person under the age of 21 is prohibited.
- It is illegal to provide alcohol to a person under the age of 21.
- Serving alcohol to an intoxicated person is prohibited.
- Selling any alcoholic beverages, except under the authority of a California Alcoholic Beverage Control License, is prohibited.
- It is a felony to induce another person to take various drugs and “intoxicating agents” with the intent of enabling oneself or the drugged person to commit a felony. The person who induced the other may be regarded as a principal in any crime committed.
- Any person found in a public place to be under the influence of an intoxicating liquor or drug and unable to care for his/her own safety, or who is interfering with the use of a public way, is guilty of disorderly conduct, which is a misdemeanor.

Examples of local, state and federal laws and regulations may be accessed at the Caltech Security website.

In addition, pursuant to federal law, a student’s eligibility for federal financial aid may be suspended if the student is convicted, under federal or state law, of any offense involving the possession or sale of illegal drugs.

Resources for Staff, Faculty, Postdoctoral Scholars and Students

Caltech recognizes drug and alcohol abuse and dependency as treatable conditions and offers faculty, staff, postdoctoral scholars and students support programs for individuals with substance use problems. Faculty, staff, and postdoctoral scholars are encouraged to seek assistance for drug- and alcohol-related problems through the Caltech Staff and Faculty Consultation Center (SFCC) at Campus and the Employee Assistance Program (EAP) at JPL. Individuals can contact the SFCC by calling (626) 395-8360, and the EAP by calling (818) 354-3680. Students are encouraged to seek assistance from the Student Counseling Center (SCC) at 626-395-8331. In addition, faculty, staff, postdoctoral scholars, and students can seek confidential referral information through the Center for Diversity at (626) 395-3221.

The staff of the SFCC, the EAP and the SCC will help employees and students to identify appropriate treatment resources and will refer them to counseling, treatment, or rehabilitation programs, as appropriate. Health insurance plans provide varying amounts of coverage for substance-abuse programs to address substance abuse and rehabilitation. Individuals may contact their health providers or Caltech Human Resources Benefits office at Campus at (626) 395-6443, or JPL at (818) 393-3191, for plan details. Information obtained regarding a faculty, staff, postdoctoral scholar or student during voluntary participation in services at the SFCC, EAP, SCC, or any related program will be treated as strictly confidential, and no information, including whether or not an individual is receiving services, will be shared with third parties, except by written consent or as required by law.

Drug and Alcohol Awareness Program

Caltech has established and will maintain a drug and alcohol awareness program to educate faculty, staff, postdoctoral scholars and students about:

1. Caltech's substance abuse policy;
2. the dangers of drugs and alcohol in a work and academic environment;
3. faculty, staff, postdoctoral scholar and student assistance programs; and
4. disciplinary action that may be imposed on faculty, staff, postdoctoral scholars and students for violations of this policy.

Caltech will distribute to all faculty, staff, postdoctoral scholars and students a copy of this policy on an annual basis.

Supervisor's Responsibilities

If an employee is suspected of violating this policy, the employee's supervisor should consult with the Director of EOD at Campus or the People Services Section Manager in Human Resources at JPL regarding appropriate actions, which may include an investigation, and discipline up to and including termination. If a supervisor believes an employee's behavior raises safety concerns for the employee or others, the supervisor must take immediate action, including calling EOD on campus or the People Services Section in Human Resources at JPL, to assess and address the situation and to remove the employee from the worksite if necessary.

Caltech Sanctions

Caltech will impose sanctions on individuals and/or organizations that violate this policy. These sanctions will be consistently enforced and penalties will depend on the severity of the offenses. Penalties can include employment termination and student suspension or expulsion from Caltech and referral for prosecution for the most serious viola-

tions of the law and this policy. Disciplinary action may be invoked entirely apart from any civil or criminal penalties that the faculty, staff, postdoctoral scholars and students might incur.

Unlawful Harassment

It is the policy of Caltech to provide a work and academic environment free of unlawful harassment (“harassment”) and retaliation. Harassment is the creation of a hostile or intimidating environment in which inappropriate conduct, because of its severity and/or persistence, is likely to interfere with an individual’s work or education, or affect adversely an individual’s living conditions. Harassment in any form, based on sex, race, color, age, national origin, ethnicity, ancestry, physical or mental disability, medical condition genetic information, pregnancy, marital status, religion, gender, gender expression or identity, sexual orientation, protected veteran status, or any other characteristic protected by state or federal laws, is unlawful and is strictly prohibited, as are all forms of sexual intimidation, exploitation, and violence. All faculty, students, staff, postdoctoral scholars and others participating in Caltech’s educational programs and activities, whether they take place in Caltech facilities, or elsewhere, should be aware that Caltech does not tolerate any conduct that constitutes harassment or retaliation. Caltech promptly and thoroughly investigates complaints of harassment consistent with legal requirements, and takes appropriate action, including disciplinary measures, when warranted.

Caltech requires any employee, who is responsible for directing or supervising other Caltech employees or evaluating the work of students, to regularly participate in training regarding harassment, including sexual harassment, and the prevention of abusive conduct, consistent with federal and state legal requirements.

Some kinds of behavior that are clearly intended to harass, while inappropriate and not tolerated at Caltech, may not be unlawful. Behavior evidently intended to dishonor such characteristics as race, gender, gender expression or identity, national origin or ethnic group, religious belief, sexual orientation, age, or disability is contrary to the pursuit of inquiry and education and may be discriminatory harassment and violate the law. These types of behavior may be dealt with through the student disciplinary process or through supervisory intervention, including the Caltech progressive disciplinary process. However, in order to make an accurate judgment as to whether incidents are unlawful, the full context in which the actions were taken or statements made must be considered.

Sexual Harassment is a Form of Unlawful Harassment

Sexual harassment is a form of sex discrimination and is unlawful, violating Title VII of the Civil Rights Act of 1964, as amended, Title IX of the Education Code, and California law.

Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature, by a stranger or non-stranger, when:

1. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or education.
2. Submission to or rejection of such conduct by an individual is used as the basis for decisions affecting that individual.
3. Such conduct has the purpose or effect of unreasonably interfering with an individual's performance or creating an intimidating, hostile, or offensive environment.

Sexual harassment by peers, coworkers, managers or third parties such as nonemployees, vendors, or contractors is a form of prohibited sex discrimination where the objectionable conduct creates a hostile educational or work environment. All individuals are protected against sexual harassment regardless of gender, sexual orientation or gender identification. Moreover, sexual harassment is prohibited regardless of the sex of the harasser, e.g., even where the harasser and the person being harassed are members of the same sex.

Examples of Sexual Harassment

Some examples of conduct that may constitute sexual harassment are:

- Unwanted sexual advances.
- Offering employment or research benefits in exchange for sexual favors.
- Making or threatening reprisals after a negative response to sexual advances.
- Making sexual gestures, or displaying sexually suggestive objects, pictures, cartoons, posters, calendars, or computer screens.
- Downloading, viewing, and/or sharing of pornography.
- Making or using derogatory comments, epithets, slurs, or jokes of a sexual nature.
- Using Caltech resources (including electronic resources) or time to create or obtain sexually explicit materials that are not directly related to legitimate business of Caltech.
- Surreptitiously taking pictures or videos of an individual's body for sexual purposes.
- Verbal abuse of a sexual nature, graphic comments about an individual's body, sexually degrading words used to describe an individual, suggestive or obscene letters, notes, electronic mail messages, or invitations.
- Unwelcome, intentional, and/or repeated touching of a sexual nature.
- Ostracizing individuals from group activities because of their sex or because they objected to harassing behavior.

Even when relationships are consensual, care must be taken to eliminate the potential for harassment or other conflicts. It is not acceptable to treat other employees, who are not in the consensual

relationship, less favorably. Caltech practice, as well as more general ethical principles, prohibits individuals from evaluating the work or academic performance of those with whom they have amorous and/or sexual relationships, or from making hiring, salary, or similar decisions.

Upon learning about such a relationship, the supervisor, dean, or division chair has the authority and responsibility to review and remedy any direct administrative or academic relationship between the involved individuals.

When a consensual personal relationship arises and a power differential exists, consent may not be considered a defense in a claim that Caltech's unlawful harassment policy has been violated. The individual in the relationship with greater power will be held responsible.

Scope

This policy applies to all students, faculty, staff, postdoctoral scholars, volunteers, interns, vendors, independent contractors, visitors and any other individuals regularly or temporarily employed, studying, living, visiting, or otherwise participating in Caltech's educational programs and activities or conducting business or having any official capacity with Caltech or on Caltech property.

Prohibition against Retaliation

No member of the Caltech community will be retaliated against for making a good-faith report of alleged harassment or for participating in an investigation, proceeding, or hearing conducted by Caltech, or by a state or federal agency. Overt or covert acts of retaliation, reprisal, interference, discrimination, intimidation or harassment against an individual or group for exercising their rights under Title IX are unlawful. Retaliation against any member of the Caltech community for exercising their rights under Title IX or this policy is strictly prohibited. Caltech will take steps to prevent retaliation and will not be tolerated and will be subject to prompt and appropriate corrective action if retaliation occurs. Individuals who violate this policy may be subject to disciplinary action up to and including termination or expulsion.

Title IX Coordinator & Deputy Coordinators

The Title IX Coordinator is responsible for Caltech's overall response to sex discrimination, sexual harassment and sexual violence. The Title IX Coordinator oversees all Title IX complaints and identifies and addresses any patterns or systemic problems that arise. The Title IX Coordinator also oversees the application of Caltech's policies and implementation of the process and procedures to resolve complaints of sexual harassment under Title IX to ensure consistent treatment of parties involved and prompt and equitable resolution of complaints. The Title IX Coordinator is supported by three Deputy Coordinators. The Title IX Coordinator and Deputy Coordinators can answer questions regarding Title IX.

Title IX Coordinator
Felicia Hunt (faculty, staff, JPL, postdoctoral scholars, and students)
Phone: (626) 395-6346
E-mail: TitleIXCoordinator@caltech.edu
Office: 230 Center for Student Services

Contact information for the Deputy Title IX Coordinators is available in the attached procedures and at <http://titleix.caltech.edu/coordinator>.

Privacy v. Confidentiality

Caltech is committed to protecting the privacy of all individuals involved in a report of harassment. Caltech takes reasonable and appropriate steps to protect the complainant's and respondent's privacy and protect the confidentiality of information. All Caltech employees who are involved in the response, including the Title IX Coordinator, Deputy Coordinators, and investigators, receive specific instruction about respecting and safeguarding private information. Throughout the process, every effort is made to protect the privacy interests of all individuals involved, in a manner consistent with the need for a thorough review of the matter.

Privacy generally means that information related to a report of harassment will only be shared with those individuals who have a "need to know" in order to assist in the matter. These individuals will be discreet and will respect the privacy of all individuals involved.

Confidentiality means that information shared by an individual with designated campus or community professionals cannot be revealed to any other individual without the express permission of the individual. These professionals are listed under "Confidential Resources" in the policy. These individuals are prohibited from breaking confidentiality unless there is an imminent threat of harm to self or others or as otherwise legally required. When a report involves suspected abuse of a minor under the age of 18, these confidential resources are required by state law to notify child protective services and/or local law enforcement.

Confidential Resources

Caltech offers members of the Caltech community the choice of seeking confidential counseling outside Caltech's formal mechanisms for resolving unlawful harassment complaints. These confidential counseling services are intended for the personal benefit of the individual and offer a setting where various courses of action can be explored and are listed below.

Mental-Health Professionals

Mental-health professionals in the Student Counseling Center and the Staff and Faculty Consultation Center provide mental-health counseling to the campus community. The JPL Employee Assistance Program/Life Matters provides mental-health counseling to the JPL

community. They will not report any information about an incident to the Caltech, including the Title IX Coordinator unless requested by their client. They may report aggregate statistics (with no identifying information) for inclusion in Caltech's Annual Security Report. They can be contacted 24 hours a day/7 days a week at:

- For students:
 (626) 395-8331 Student Counseling Center
 (626) 395-5000 after hours via Security
- For faculty, campus staff, and postdoctoral Scholars:
 (626) 395-8360 Staff and Faculty Consultation Center
 (626) 395-5000 after hours via Security
- For JPL employees:
 (818) 354-3680 JPL Employee Assistance Program (on site)
 (800) 367-7474 JPL Employee Assistance Program/Life Matters (off site and after hours)
 (818) 354-3333 after hours via JPL Protective Services Division
 (818) 393-3333

Other Campus Confidential Resources

Certain individuals in the Caltech Center for Diversity and the Health Educator's Office have been designated as confidential resources for purposes of Title IX. These designated individuals can generally talk to a victim of sexual harassment without revealing any personally identifying information about an incident to Caltech. A victim can seek assistance and support from these individuals for sexual harassment incidents without triggering a Caltech investigation that could reveal the victim's identity or that the victim has disclosed the incident.

While maintaining a victim's confidentiality in cases involving allegations of sexual harassment, the Caltech Center for Diversity and the Health Educator's Office will report the nature, date, time and general location of an incident to the Title IX Coordinator. This limited report, which includes no information that directly or indirectly identifies the victim, helps keep the Title IX Coordinator informed of the general extent and nature of sexual harassment on- and off- campus so that coordinator can track patterns, evaluate the scope of the program and formulate appropriate campus-wide responses. These confidential resources may report aggregate statistics (with no identifying information) for inclusion in Caltech's Annual Security Report.

- Caltech Center for Diversity (students):
 (626) 395-5772 or (626) 395-8108
- Health Educator (students):
 (626) 395-2961

Reporting

Anyone who witnesses or experiences or is otherwise aware of conduct that he or she believes to be in violation of this policy, including retaliation, is urged to contact Caltech immediately. For a list of individuals to whom violations of this policy can be reported, please see the Title IX Coordinator information above and other individuals identified in the attached Procedures.

Individuals also may report harassment anonymously by contacting the Caltech Hotline at (626) 395-8787 or (888) 395-8787 or the JPL Ethics Hotline at (818) 354-9999, or by submitting a compliance hotline form.

Reports Involving Minors

Every member of the Caltech community who knows of, or reasonably suspects, child abuse, including sexual harassment, has a personal responsibility to report to Caltech Security or the JPL Division of Protective Services immediately. Caltech employees who are mandatory reporters have additional reporting obligations, including reporting immediately to LA County Child Protection or the local police department. See the Violence Prevention policy for more information.

Contacting the Outside Agencies

In addition, an employee who believes he or she has been unlawfully harassed has the right to file a complaint with the federal Equal Employment Opportunity Commission or the California Department of Fair Employment and Housing which have the authority to remedy violations. Employees, students and others participating in Caltech's educational programs and activities may file complaints with the U.S. Department of Education Office for Civil Rights (415) 486-5555, ocr.sanfrancisco@ed.gov or (800) 421-3481 or OCR@ed.gov.

Procedures for Investigating and Resolving Unlawful Harassment Complaints at Caltech

These procedures apply to complaints of unlawful harassment ("harassment"). There are several courses of action available to address complaints of harassment, each with different consequences and implications with respect to confidentiality and resultant action. These options are not mutually exclusive. The complainant may choose which course to follow and may submit a formal complaint at any time.

These procedures are for the benefit of the Caltech community and do not apply in cases involving complainants and/or respondents who are not current Caltech students, faculty, staff, postdoctoral scholars, volunteers, and interns. When a complaint involves a third party who is not affiliated with Caltech, Caltech's ability to investigate and take action against the person accused of harassment may be limited. However, in all cases, Caltech will conduct an inquiry into what occurred and take prompt action as is practicable to provide for the safety and well-being of the complainant and the campus community.

As used in these procedures, a complainant refers to the individual who is reported to be the subject of harassment. A respondent refers to the individual who reportedly committed the harassment. A third party refers to any other participant in the process, including a witness to the incident or an individual who makes a report on behalf of someone else.

Prohibition against Retaliation

Retaliation against any member of the Caltech community involved in the process of responding to and resolving a report of harassment, including complainants, respondents and third parties, is strictly prohibited. Caltech recognizes that retaliation can take many forms, may be committed by or against an individual or group, and that a complainant, respondent or third party may commit or be the subject of retaliation. Caltech will take steps to prevent retaliation and will take prompt and appropriate corrective action to stop retaliation if it occurs.

False Reports

Caltech will not tolerate intentional false reporting of incidents. A good-faith complaint that results in a finding of “no violation” is not considered a false report. However, when a complainant or third party is found to have fabricated allegations or to have given false information with malicious intent or in bad faith, they may be subject to disciplinary action.

Informal Options

An individual who believes that he or she has been harassed may choose to resolve his or her concerns informally. In general, the goal of the informal options is to quickly end offending behavior without utilizing disciplinary action. Individuals with an official status at Caltech, such as faculty, managers, or supervisors, are expected to follow up with the complainant to make sure that the issue has indeed been resolved. Mutually agreeable administrative changes are sometimes possible to ease an uncomfortable situation. Individuals are not required to try to resolve their concerns informally before making a formal complaint.

Complainants should consider at the outset whether such changes might be desirable. Informal options include:

- Talking personally with the offending individual, or writing a letter asking him or her to stop. This is a personal step taken solely among the relevant parties.
- Speaking to members of the Student Counseling Center, the Staff and Faculty Consultation Center, or the Caltech Center for Diversity on campus and the JPL Employee Assistance Program/Life Matters at JPL. Such conversations are confidential and are not communicated to individuals within or outside Caltech.

- Resolving the complaint informally with the help of a third party who has a faculty, supervisory, or managerial position at Caltech. The goal here is also to allow the parties to resolve complaints without an investigation and without elevating the complaint within Caltech. However, a person in one of these official positions is obligated to follow up to be sure the situation has been resolved. This action might include referring the complaint to an appropriate individual within Caltech or sharing some of this information with other persons holding positions of responsibility at Caltech.

Formal Complaints

A formal complaint is a request that Caltech take action. The complainant may file a formal complaint by reporting the offending conduct to individuals holding any of the positions listed below.

Campus:

Title IX Coordinator and Deputy Coordinators

Chief of Security

Director of Security Operations

Security Officers

Provost

Vice Provosts

Division Chairs

Division Administrators

Deans

Associate Deans

Student Affairs Directors

Master of Student Housing

Residence Life Coordinators

Resident Associates

Coaches

Director of Employee & Organization Development

Employee Relations Consultants

Associate Vice President of Human Resources

Department Heads

JPL:

Title IX Coordinator and Deputy Coordinator

JPL Protective Services Group Supervisor, Investigations

Director for Human Resources

Deputy Director for Human Resources

Human Resources Business Partners

Section Managers

Responsible Employees

The employees listed above are responsible employees for purposes of Title IX as well as faculty with administrative responsibilities. Pursuant to Title IX, Caltech is required to take corrective action if a “responsible employee” knew or reasonably should have known about sexual harassment. A “responsible employee” is a Caltech employee

who has the authority to redress sexual harassment, who has the duty to report incidents of sexual harassment or other student misconduct, or who a student or employee could reasonably believe has the authority or duty to do so.

When an individual reports an incident of sexual harassment to a responsible employee, he or she must report to the Title IX Coordinator all relevant details about the alleged sexual harassment. Caltech is committed to protecting the privacy of all individuals involved in a report of sexual harassment. All employees involved in the response to a report of sexual harassment understand the importance of properly safeguarding private information. Caltech will make every effort to protect individuals' privacy interests consistent with Caltech's obligation to investigate reports made to Caltech. Caltech will not share information with law enforcement that identifies the victim without the victim's consent.

If a member of the Caltech community discloses an incident to a responsible employee but requests that his or her name not be used or requests that no investigation into a particular incident be conducted or that no disciplinary action be taken, Caltech must weigh the request against its obligation to provide a safe, non-discriminatory environment. The Title IX Coordinator or designee will evaluate all requests for confidentiality once a responsible employee is on notice of the alleged sexual harassment. Factors that the Title IX Coordinator or designee will consider include circumstances that suggest there is an increased risk of the accused committing additional acts of sexual harassment.

Caltech will take all reasonable steps to investigate or otherwise determine what occurred and respond to the complaint consistent with the request not to use the complainant's name or request not to pursue an investigation or that no disciplinary action be taken, but its ability to do so may be limited based on the nature of the request by the complainant. When Caltech is unable to take action consistent with the request of the complainant, the Title IX Coordinator will inform the complainant about Caltech's chosen course of action, which may include Caltech seeking disciplinary action against the respondent. Alternatively, the course of action may also include steps to limit the effects of the alleged sexual harassment and prevent its recurrence that do not involve formal disciplinary action against the respondent or revealing the identity of the complainant. If the complainant insists that his or her name not be disclosed to the respondent, the Title IX Coordinator will explain that Caltech's ability to respond may be limited, including pursuing disciplinary action against the person accused of harassment. The Title IX Coordinator will also advise the complainant that Caltech and Title IX prohibit retaliation, and that Caltech will take steps to prevent retaliation and responsive corrective action if it occurs. If the complaint includes allegations that may constitute a possible crime, the complainant will be notified of his or her right choose whether to file a criminal complaint.

Anonymous Reporting

Although Caltech encourages victims to talk to someone, Caltech provides the following resources for anonymous reporting:

Campus Hotline	(626) 395-8787 or (888) 395-8787
JPL Ethics Hotline	(818) 354-9999
JPL Protective Services Division's Workplace Violence Hotline	(818) 393-2851

For either Campus or JPL by submitting a compliance HOTLINE CONTACT FORM

Campus Security can also receive anonymous reports of sexual harassment at (626) 395-5000.

Contacting one of these anonymous reporting resources may trigger an investigation, and if you share personally identifying information, you will be notified if an investigation occurs.

Processing Complaints

The complaint is then taken to the Provost, Director of EOD, or Dean(s) as appropriate (for faculty, postdoctoral scholars and staff, and students, respectively) at campus or the Section Manager, Talent Management at JPL, or their designees. Complaints of sexual harassment will be taken to the Title IX Coordinator or designee. The responsible administrator will initiate an investigation, or other action as described more fully below. Formal complaints of harassment can be made orally or in writing.

Caltech may initiate an investigation about an incident if it becomes aware that inappropriate conduct may have occurred. Caltech also will not delay its investigation of complaints of inappropriate conduct because of a law enforcement investigation.

Amnesty for Student Alcohol or Drug Use

Caltech encourages reporting of harassment, including sexual harassment. It is in the best interests of the Caltech community that complainants and third parties report sexual harassment to Caltech. To encourage reporting, a complainant or witness in an investigation will not be subject to disciplinary action for a violation of the honor code or Caltech's Substance Abuse policy at or near the time of the incident, unless Caltech determines that the violation was egregious, including but not limited to, an action that places the health or safety of any other person at risk. Caltech may however, initiate an educational discussion or pursue other educational remedies regarding alcohol or drugs.

Initial Title IX Assessment

For every report of sexual harassment covered by Title IX, Caltech's Title IX Coordinator will make an initial assessment of the complaint, which will include an immediate assessment of any risk of harm to individuals or to the campus community and will take steps necessary to address those risks. These steps may include interim protective

measures to provide for the safety of the complainant and the campus community as described above.

The complainant will be provided with information on the complainant's rights and options under the Institute's Unlawful Harassment policy and these procedures, written materials about the availability of, and contact information for, on- and off-campus resources and services, and coordination with law enforcement if appropriate. The need for and types of interim measures also will be discussed.

The Title IX Coordinator may also meet with the respondent and other relevant parties as part of the initial assessment. If the Title IX Coordinator meets with the respondent, he or she will be provided with information on the respondent's rights and options under the Institute's Sexual Violence policy and these procedures, and written materials about the availability of, and contact information for campus resources and services.

The initial assessment will proceed to the point where a reasonable assessment of the safety of the individual and of the campus community can be made and an appropriate approach to resolution can be determined. Thereafter, the Title IX Coordinator may refer the complaint for formal investigation, administrative resolution or other appropriate disposition, depending on a variety of factors, such as the complainant's request that his or her name not be used, complainant's request that no investigation into a particular incident be conducted or that no disciplinary action be taken, the risk posed to any individual or the campus by not proceeding, the nature and seriousness of the allegations, whether there have been other reports/complaints of sexual harassment involving the respondent, and whether the allegations are contested. The Title IX Coordinator will obtain the complainant's agreement to proceed with the proposed approach to resolution, whether it be a formal investigation, administrative resolution or another alternative approach. In implementing the approach, the Title IX Coordinator will inform and coordinate with the appropriate responsible Caltech official(s): Provost, EOD Director, Deans, Associate Deans, Associate Vice President for Human Resources on campus, or Director for Human Resources at JPL.

Caltech will investigate reports of sexual harassment consistent with its obligations under applicable law. For complaints solely covered by Title IX, the Title IX Coordinator will seek consent from the complainant to proceed with a formal investigation or an administrative resolution. If the complainant requests confidentiality or asks that the complaint not be pursued, Caltech will still take all reasonable steps to investigate or otherwise determine what occurred and respond to the report. If the complainant refuses to have his/her name disclosed to the respondent, the Title IX Coordinator will explain that Caltech's ability to investigate and respond may be limited. If the complaint includes allegations that may constitute a possible crime, the Title IX Coordinator will notify the complainant of his/her right to file a criminal complaint or to choose not to notify law enforcement.

Interim Measures

Upon receipt of a report of sexual harassment, Caltech will take prompt measures to protect the rights of both the complainant and the respondent as appropriate. Caltech will immediately assess whether there is a threat to the complainant and/or other members of the community and will take steps necessary to address such risk. These steps may include interim safety measures to provide for the safety of individuals and the campus community.

Interim safety measures, administrative changes and/or academic changes can be made at any stage in the process to protect the rights of either party. They will be made by the appropriate administrators. These changes should be discussed with the appropriate responsible Caltech official: Provost, EOD Director, Deans, Associate Deans, and Associate Vice President for Human Resources on campus, or Director for Human Resources at JPL. Changes affecting faculty, staff and employees at JPL might include transfer of supervisory or evaluative responsibility regarding grading, supervision, tenure review, letters of recommendation, and/or changes to office assignments. For students, these changes might include the complainant's option to avoid contact with the respondent via a "no contact" order from the Deans, changes to classes and/or housing, Caltech-imposed leave for the respondent, as well as any other remedy that can be tailored to the involved individuals to achieve the goals of this policy. When taking steps to separate a complainant and respondent, Caltech will endeavor to minimize the burden on the complainant. Care will be taken to protect both parties with the greatest degree of privacy possible. If a complainant wishes to seek a temporary restraining order or similar judicial order, Caltech will help the complainant with that process.

Measures for the broader student population may include but are not limited to: developing materials on sexual harassment, further training for employees regarding Title IX, education of students on bystander intervention and/or sexual harassment prevention, or taking steps to clearly communicate that Caltech does not tolerate sexual harassment and will respond to any incidents and to any student who reports such incidents.

Formal Investigation

The following procedures apply with respect to complaints referred for formal investigation:

- The purpose of the investigation is to determine the facts relating to the complaint.
- All participants involved in the investigation will receive a fair process and be treated with care and respect.
- All parties may have an advisor of their choice accompany them when reporting, or responding to, allegations of harassment. The advisor may not speak on behalf of the party he or she is accompanying.

General Information

- Caltech's investigation will occur independently from any legal/criminal proceedings that may take place. Caltech may defer fact gathering for a short time during the initial stages of a criminal investigation.
- The individuals involved in the investigation will respect the privacy of the complainant, respondent, and that of all parties involved while conducting a thorough review of the complaint.
- Investigators will train regularly, and at least annually, in issues related to harassment, and are trained how to conduct an investigation process that protects the safety of all involved and promotes accountability. Caltech will typically use a team of two investigators, though an individual, a committee or an outside consultant may conduct the investigation. The investigators chosen must be impartial and free of any conflict of interest.
- The complainant and respondent will be informed of the relevant procedures, and may object to the investigator(s) by notifying the appropriate Caltech official in writing.
- If internal investigators are used, at least one investigator should be from the same area as the respondent.
- Within a reasonable length of time the respondent will be notified of the nature of the complaint, and an investigation will begin. If interim measures are needed to protect the rights of the complainant or respondent during the investigation, the appropriate administrators shall see that they are made.
- In cases involving allegations of sexual harassment, Caltech's policies on Sexual Violence, Nondiscrimination and Equal Employment Opportunity and Unlawful Harassment will be reviewed with both parties and copies will be provided to them. In cases involving other forms of harassment, Caltech's Nondiscrimination and Equal Employment Opportunity policy will be reviewed with both parties and copies will be provided to them.
- The complainant and respondent will be informed that Caltech will not tolerate retaliation, will take steps to prevent retaliation, and will take strong responsive action if retaliation occurs. The complainant and respondent will be advised to notify Caltech immediately if any retaliation occurs. They should immediately notify any of the individuals to whom a complaint can be made if anyone associated with the matter is under continuing threat or is being subjected to retaliation.
- The investigator(s) will summarize for the respondent the evidence in support of the complaint to allow the respondent the opportunity to respond.
- The investigation will be treated as private to the extent possible and all parties will be advised to maintain privacy. Caltech administrators will be informed on a need-to-know basis. Caltech will make reasonable and appropriate efforts to preserve the complainant's and respondent's privacy and protect the confidentiality of information.

- The complainant and respondent will be given equal opportunity to present their case separately to the investigator(s), to suggest others who might be interviewed, and to present other evidence. Subsequently, the investigator(s) can, if appropriate, interview other parties to reach findings and conclusions.
- The investigators will investigate any allegations that alcohol or drugs were involved in the incident.
- In cases involving allegations of sexual harassment, the investigators will not ask questions or seek evidence of the complainant's prior sexual conduct with anyone other than the respondent. Furthermore, evidence of a prior consensual dating or sexual relationship between the complainant and respondent itself does not imply consent or preclude a finding of sexual harassment or violence.
- All parties who participate in investigative interviews may submit written statements. Investigatory meetings will not be recorded.
- Both parties will be kept informed of the status of the investigation.
- Complaints will be investigated within a reasonable length of time after the complaint has been made, normally within 60 days. An individual, a committee, or an outside consultant may conduct the investigation.
- Investigative files for sexual harassment complaints will be maintained in the Title IX Coordinator's office. Investigative files for other forms of harassment will be maintained in the appropriate administrator's office.
- Extensions of time, and other exceptions to or modification of these procedures can be made by the Title IX Coordinator, Provost, Dean or Associate Deans, Associate Vice President for Human Resources, or Director for Human Resources at JPL, if required for fairness or practical necessity. Exceptions must be made in writing and notice provided to both the complainant and respondent, which notice will include the reason for the extension, exception or modification.

The investigator(s) will use the preponderance of evidence standard in determining whether prohibited harassment occurred. A preponderance of the evidence means that it is more likely than not that the incident occurred. When the investigator(s) is presented with two different but plausible versions of the incident, credibility determinations may affect the outcome.

Findings and Conclusions

The investigator(their findings and conclusions to the relevant Dean, Provost, Executive Director of Human Resources, or Talent Management Manager at JPL, as appropriate, for decision.

The conclusions that the investigation might reach include, but are not limited to, the following possibilities. In each case the investiga-

tor(s) should summarize the evidence that supports the conclusion.

1. A violation of Caltech's Nondiscrimination and EEO, Unlawful Harassment or Sexual Violence Policies occurred.
2. Inappropriate behavior occurred, but did not constitute a violation of Caltech's policies on discrimination, harassment, and/or sexual violence. For example, the respondent improperly used the power of his or her position, used poor judgment, or violated applicable standards of ethical behavior.
3. The charges were not supported by the evidence.
4. The charges were brought without any basis or without a reasonable, good faith belief that a basis existed.

Resolution

As soon as practicable after receiving the findings and conclusions of the investigator(s), the appropriate Caltech official, the Provost for faculty, the relevant Dean for students, the Executive Director of Human Resources for postdocs and campus staff, or Deputy Director for Human Resources at JPL for JPL employees, will make a decision concerning resolution of the complaint, including imposing sanctions against the respondent if appropriate. The complainant and respondent simultaneously will be informed in writing, of the results, any changes to the results that occurs prior to the results becoming final, and when such results become final, and their right to appeal, the procedure for appeal. Any sanctions imposed will only be disclosed consistent with applicable law, including FERPA, Title IX of the Education Code, and the Clery Act.

If a violation of Caltech's Nondiscrimination and EEO, Unlawful Harassment or Sexual Violence policies has occurred, appropriate sanctions will be imposed if possible. Depending on the severity of the case and role at Caltech, possible sanctions include, but are not limited to:

- Verbal counseling or warning/training
- A formal written warning placed in the respondent's file
- Suspension of the right to accept new graduate students or postdoctoral scholars
- Transfer of advisees
- Removal from positions of administrative responsibility
- Removal from student housing
- Removal from a supervisory position
- Enforced leave of absence/suspension
- Termination of employment
- Expulsion/permanent dismissal

If the respondent was not found to have violated Caltech policy on harassment, but the investigation concludes that he or she violated another Caltech policy, or committed some other wrongful or improper act, corrective action will be taken. Effective corrective action may also require remedies for the complainant and/or the broader Caltech

community. Caltech will take appropriate measures to prevent the reoccurrence of any sexual harassment, and to correct any discriminatory effects on the complainant and others, as appropriate.

Administrative Resolution

In cases where sexual harassment is alleged, the Title IX Coordinator, with the complainant's and the respondent's agreement, may offer the opportunity to resolve the sexual harassment complaint by Administrative Resolution. Administrative Resolution provides an opportunity for the respondent to accept responsibility for his or her alleged conduct and proceed to a resolution without a formal investigation.

If the Administrative Resolution option is agreed to by the complainant, the Title IX Coordinator will meet with the respondent to review the allegations. The Title IX Coordinator will provide the respondent with information on the respondent's rights and options under the Institute's Unlawful Harassment policy and these procedures, written materials about the availability of, and contact information for campus resources and services. The Title IX Coordinator will offer the respondent the opportunity to resolve the complaint by Administrative Resolution by accepting responsibility for the alleged conduct. If the respondent elects to acknowledge that the alleged conduct occurred and takes responsibility for the alleged sexual harassment, the respondent will sign a written acknowledgement and the matter will be referred to the appropriate Caltech official for a decision concerning sanctions and any other remedial action that may be appropriate. The complainant and respondent will both be notified simultaneously in writing of the resolution, including any sanctions against the respondent. Either party may appeal the sanction imposed.

If the respondent contests responsibility for the alleged conduct, the Administrative Resolution process will be concluded and the case will be referred for Formal Investigation.

Appeals

Appeals must be in writing and submitted within thirty (30) days of notification of the decision. Appeals of decisions resulting from the Formal Investigation process must be on the grounds that a procedural error occurred that significantly affected the outcome of the investigation, there is new and relevant evidence that was unavailable at the time of the investigation that could substantially impact the original findings, or the sanction is substantially disproportionate to the findings. Appeals of decisions resulting from the Administrative Resolution process must be made on the grounds that the sanction is substantially disproportionate to the acknowledged conduct. The complainant and the respondent simultaneously will be informed, in writing, of the outcome of the appeal. Appeal decisions are final.

Faculty complainants may appeal the decision to the Provost or designee; staff and postdoctoral scholars may appeal to the Vice

President for Human Resources or designee; students may appeal to the Vice President for Student Affairs or designee; and JPL employees may appeal to the JPL Director for Human Resources or designee.

Appeals by a faculty member of decisions or actions by the Provost that affect academic freedom and tenure can be made to the Faculty Committee on Academic Freedom and Tenure, as indicated in Chapter 4 of the Faculty Handbook.

Further Complaints

If the corrective action does not end the harassment, or if any retaliatory action occurs, the complainant should immediately notify the Title IX Coordinator, or for campus, the Provost or Division Chair, Dean or Associate Deans, or EOD Director; or for JPL, the Employee Relations Manager. In such cases, the complainant has the right to file another complaint.

Related Policies and Procedures:

- Nondiscrimination and Equal Employment Opportunity
- Sexual Violence Policy
- Violence Prevention

Violence Prevention

It is the policy of the Institute to provide a safe and secure environment for all members of the Institute community, comprising employees including faculty, students, postdoctoral scholars, and third parties, including minors by maintaining an environment of respect, providing conflict resolution processes, and by establishing preventative measures as well as providing assistance and support to victims. This policy specifically addresses the Institute's position on the prevention, reduction, and management of violence to provide a safe working and learning environment for its students, employees including faculty, postdoctoral scholars, and third parties engaged in any Institute activity.

All members of the Institute community shall cooperate to maintain a safe environment.

The Institute does not tolerate violence or threats of violence committed by or against employees including faculty, students, postdoctoral scholars, or third parties, including minors on its campus, at JPL or at any Institute locations or Institute activities. All weapons are banned from Institute premises and activities unless written permission is given by Campus Security or Jet Propulsion Laboratory (JPL) Division of Protective Services. Employees and students who violate this policy will be subject to corrective action, up to and including termination, expulsion/dismissal, or denial of access to Institute locations. Individuals who intentionally bring false accusations about a violation of this Policy against another also will be subject to corrective action, including termination or expulsion/dismissal. Other violations of the policy will be handled in accordance with Institute policies and applicable laws.

Caltech has established and will maintain a violence prevention

program to educate employees including faculty, postdoctoral scholars and students about violence prevention and public safety awareness. This prevention program will include information on identifying and report child abuse.

1. Definitions

1. Acts of violence include any physical action, whether intentional or reckless, that harms or threatens the safety of another individual at the Institute.
2. A threat of violence includes any behavior that by its very nature could be interpreted by a reasonable person as intent to cause physical harm to another individual.
3. Child abuse includes serious endangerment of a child's physical or mental health due to injury by act or omission (neglect), including acts of sexual abuse.
4. Institute or Facilities include all Institute locations and off-campus locations where employees including faculty, postdoctoral scholars or students are engaged in Institute activities or programs.
5. An At-Risk Individual is an employee, student, or other person who is a potential target or victim of violence. An At-Risk Individual also may be a threat to self or others.
6. Intimidation is engaging in actions that include, but are not limited to, stalking or behavior intended to frighten, coerce or induce duress.
7. Minor is anyone under the age of 18 years (also referred to as a "child" or "children").
8. Mandatory Reporter is an employee who is required by law to make a report to the appropriate authorities whenever, within their professional capacity, or within the scope of their employment, they have knowledge of or observe a child they know or reasonably suspect has been the victim of child abuse. Certain professionals have long been Mandatory Reporters, but the law has recently been expanded such that any Institute employee whose duties bring them into direct contact with children under 18 years of age on a regular basis or who supervises employees whose duties bring them into contact with children on a regular basis is a Mandatory Reporter.
9. Persons include Institute employees, including faculty, students, postdoctoral scholars, and third parties.
10. Third Parties are individuals who are not Institute employees or students, such as relatives, acquaintances, guests, contractual personnel, consultants, vendors, visitors, volunteers, customers, clients, others engaging in sponsored activities, external affiliates, or others.
11. Victim is an individual who has experienced or witnessed an act or acts of violence or threats of violence or intimidation as outlined in this Policy.

12. Weapon is any instrument or substance capable of producing bodily harm, in any manner, under any circumstances, and at a time and place that manifests intent to harm or intimidate another person or that warrants alarm for the safety of another person.

2. Examples of actions or activities that violate the Institute's Policy include, but are not limited to:

1. Physical violence or the threat of physical violence against persons or property.
2. Any verbal or physical conduct and/or harassing or intimidating behavior that causes a person to reasonably fear for his or her safety, or the safety of others including the safety of friends or family.
3. Possessing, brandishing, or using a weapon in a manner that is not required by the individual's position while involved in any Institute activity on or off premises.
4. Threatening or intimidating communications including notes, voice messages, telephone calls, electronic communications such as emails, texts and social media, and intra-office or regular mail directed towards a person(s) or Facilities.
5. Intimidation, including stalking a person.
6. Intentional destruction or threat of destruction to property owned or controlled by the Institute or NASA.
7. Acts of violence or threats of violence, on or off Institute premises, if the threats or acts affect the legitimate interests of the Institute.

3. Reporting Violence

1. Any individual who experiences or observes a threat, an act of violence, child abuse, or an unauthorized weapon must immediately notify Campus Security or JPL Protective Services Division, or law enforcement.

Campus Security	626-395-5000
JPL Protective Services Division	818-354-3530

An individual at a non-campus or non-JPL location must immediately notify local law enforcement.

2. If an individual becomes aware of behavior that might violate this Policy, the individual must immediately notify one of the following managers or offices.

Employee's supervisor/management	
Campus Human Resources –	
Employee Relations	626-395-8039
Dean of Students	626-395-6351
Dean of Graduate Studies	626-395-6346

Provost's Office	626-395-6320
Title IX Coordinator	626-395-3132
Campus Security	626 395-5000
Caltech Ethics Help Line	626-395-8787
JPL Human Resources	818-354-7506
JPL Protective Services Div.	818-354-3530
JPL Workplace Violence Hotline	818-393-2851
JPL Ethics Help Line	818-354-9999

3. The Institute will handle all reports of violence in a confidential manner, with information released as determined to be appropriate by the Institute.
4. Managers are required to immediately report any known incidents of violent, threatening, or intimidating behavior to Security, JPL Division of Protective Services, Human Resources, the Deans or the Provost, whether that behavior is observed on or off Institute premises when any Institute activity is involved.
5. Caltech policy prohibits retaliation against any employee, student, or third party who, in good faith, reports a violation or suspected violation of this Policy.

4. Reporting Child Abuse

1. Every member of the Caltech community who knows of, or reasonably suspects, child abuse has a personal responsibility to report to Caltech Security or JPL Division of Protective Services immediately.
2. Mandatory Reporters have the additional responsibility to report immediately or as soon as practicably possible by telephone to the LA County Child Protection Hotline (800) 540-4000 [or from out of state (213) 639-4500] or Pasadena Police Department 911 (for emergencies) or (626) 744-4501 (for non-emergencies), or to another local police department. Mandatory Reporters must file a written Suspected Child Abuse Report (SCAR) within 36 hours of receiving information concerning the incident. The SCAR can be completed online at <https://mandreptla.org>
3. Mandatory Reports are required to attend training provided by the Institute and to sign an "Employee Acknowledgement of Mandatory Reporter Status".

5. Investigating Violence

1. All reports of inappropriate behavior or conduct that violates or appears to violate any aspect of this Policy will be taken seriously, properly investigated and dealt with accordingly. Separate from any criminal investigation that the police may conduct, Campus Security or JPL Division of Protective Services, Human Resources,

the Deans, the Provost, or the Title IX Coordinator will conduct an independent investigation of the alleged threat or incident.

2. Based on the findings of the investigation, individuals who violate any aspect of this Policy may be subject to corrective action up to and including any of the following: termination of employment, expulsion/dismissal, removal from the premises, or being restricted from access to Institute facilities.
3. Additionally, the commission of such acts that may violate California or federal laws may be referred to law enforcement agencies for investigation.

6. Possession and Use of Firearms and Weapons

No unauthorized firearms or other weapons shall be brought onto Institute or NASA property or to Institute activities, with the exception of weapons authorized by the Chief of Security on campus or the Division Manager of the Protective Services Division at JPL.

7. Resources

The Staff and Faculty Consultation Center and the Student Counseling Center at campus or the Employee Assistance Program at JPL may provide resources such as intervention, consultation or referral for clinical evaluation or treatment, including arranging for counselors to work with at-risk individuals, and victims and observers of an incident.

Campus

Security	626-395-5000
Staff and Faculty Consultation Center	626-395-8360
Human Resources	626-395-8039
Dean of Students	626-395-6351
Dean of Graduate Studies	626-395-6346
Student Counseling Center	626-395-8331
Provost	626-395-6320
Title IX Coordinator	626-395-3132
Caltech Center for Diversity	626-395-6207
Caltech Ethics Help Line	626-395-8787

JPL

Protective Services Division	818-354-3530
Human Resources	818-354-7506
Employee Assistance Program	818-354-3680
Ethics	818-354-6338
Ethics Help Line	818-354-9999
Workplace Violence Hotline	818-393-2851

8. Exceptions

Any exception to this policy requires the approval of the Chief of Security for campus, or the Division Manager for the Division of Protective Services for JPL.

9. Related Policies

- Termination
- Unlawful Harassment
- Sexual Violence

Whistleblower Policy

It is important to the Institute that employees disclose violations or potential violations of law or serious breaches of conduct without the fear of retaliation. Caltech policy prohibits retaliation against an individual who makes a good faith disclosure of suspected wrongful conduct. Any individual who engages in retaliation in violation of this policy will be subject to disciplinary action up to and including termination or expulsion.

It is Caltech's policy to comply with applicable laws and regulations, including whistleblower protections provided under 41 USC Section 4712. As employees of the Institute, each of us is responsible for making sure his or her conduct fully complies with all laws and regulations as well as Institute policies. The Institute expects employees with knowledge of specific acts that he or she reasonably believes violate the law or Institute policy to disclose those acts to an appropriate Institute official.

If an employee believes he or she has been the subject of retaliation for making a good-faith disclosure, he or she is encouraged to contact his or her supervisor or one of the following offices: Human Resources, JPL Ethics Office, Audit Services and Institute Compliance, or the Office of General Counsel. Anyone with questions or concerns regarding inappropriate or improper activities within the Institute may use one of the anonymous reporting mechanisms outlined below.

Web Hotline:

<http://asic.caltech.edu/hotline.htm>

Telephone Hotline:

(626) 395-8787 or Toll Free (888) 395-8787

Interoffice Mail:

Audit Services and Institute Compliance
MC 250-64

U.S. Mail:

Audit Services and Institute Compliance
565 S. Wilson Avenue, Pasadena, CA 91106

JPL Ethics Line:

(818) 354-9999 or Toll Free (866) G0JPLEO

