CALIFORNIA INSTITUTE
of TECHNOLOGY

One Hundred Seventeenth
Annual Commencement

Friday Morning at Ten O’Clock
June Tenth, Two Thousand Eleven
In his diary entry of September 1, 1891, Pasadena philanthropist Amos Throop wrote, “Planted potatoes, cleaned a water pipe, husked the corn . . . In afternoon, saw Mr. Wooster and rented his block for five years . . . and hope I have made no mistake.” Were he here today, Throop could rest assured in his decision. For the building of which he wrote, the Wooster Block, was rented for the purpose of establishing Throop University—the forerunner of Caltech.

In November of that year, Throop University opened its doors to 31 students and a six-member faculty. Could anyone have imagined then that the school would become a world center for science and engineering research and education? Perhaps . . . for in the first year, the board of trustees began to reconsider the mission of the school. In 1892, they decided to emphasize industrial training, and in 1893, reflecting this new focus, they renamed the school Throop Polytechnic Institute.

Throop might have remained just a good local school had it not been for the arrival in Pasadena of George Ellery Hale. A faculty member at the University of Chicago and a noted astronomer, Hale settled here in 1903. From that time until his death in 1938, he made significant contributions to Pasadena and Southern California: he established the Mount Wilson Observatory, raised funds for Palomar Observatory and its 200-inch telescope, participated in the creation of the Huntington Library, Art Collections, and Botanical Gardens, helped design the Civic Center in downtown Pasadena, and—perhaps his single greatest
In 1913, Hale convinced Arthur Amos Noyes, professor of chemistry and former president of the Massachusetts Institute of Technology, to join him in Pasadena. With the arrival in 1917 of Robert Andrews Millikan, professor of physics at the University of Chicago, Hale had assembled the founders of the new institution. The world center of scientific and engineering research and education he had imagined soon took shape under a new name, the California Institute of Technology, administered by Millikan and enriched with the scientific talents of Noyes and his faculty colleagues.

And amazing things indeed have happened at Caltech over the years. Theodore von Kármán developed the principles that made jet flight possible, Charles Richter published his logarithmic scale for measuring the magnitude of earthquakes, and astronomer Maarten Schmidt discovered the nature of quasars. Here Linus Pauling determined the nature of the chemical bond, Max Delbrück conducted the studies of bacterial viruses that led to a new branch of biology called molecular genetics, Murray Gell-Mann theorized that all particles are made up of quarks and anti-quarks, and Roger Sperry developed new insights into the implications of right-brain and left-brain functions. And it was not just faculty but also Caltech alumni who came to have great impact on the world. Alumnus Charles Townes developed the laser; Chester Carlson invented Xerography; David Ho did landmark work in creating an effective AIDS drug treatment; Gordon Moore founded a semiconductor industry. Many alumni have gone on to make substantial marks in the business world, such as Simon Ramo and Ben Rosen, while others have become astronauts, university presidents, government leaders, and even authors, directors, and performance artists of note. Caltech’s reach has certainly been wide and long-lasting.
Caltech today has a 124-acre campus and operates seven off-campus astronomical, seismological, and marine biological facilities, and also administers NASA’s Jet Propulsion Laboratory. At present, the Institute has an enrollment of over 2,100 students, more than half of whom are in graduate studies; about 300 professorial faculty members, including five Nobel laureates and two Crafoord laureates; and about 75 research faculty members. Today, Caltech will award 235 students the B.S. degree; 117 students the M.S. degree; and 168 doctoral candidates the Ph.D. degree, for a total of 520 graduates—quite a leap from the one man and one woman who constituted the first collegiate graduating class of Throop Polytechnic Institute.
These tribal rites have a very long history. They go back to the ceremony of initiation for new university teachers in medieval Europe. It was then customary for students, after an appropriate apprenticeship to learning and the presentation of a thesis as their masterpiece, to be admitted to the Guild of Masters of Arts and granted the license to teach. In the ancient University of Bologna, this right was granted by authority of the pope and in the name of the Holy Trinity. We do not this day claim such high authority.

As in any other guild, whether craft or merchant, the master’s status was crucial. In theory at least, it separated the men from the boys, the competent from the incompetent. On the way to his master’s degree, a student might collect a bachelor’s degree in recognition of the fact that he was half-trained, or partially equipped. The doctor’s degree was somewhat different. Originally indistinguishable from the master’s, the doctor’s gradually emerged by a process of escalation into a super magisterial role—first of all in the higher faculties of theology, law, and medicine. It will come as no surprise that the lawyers had a particular and early yen for this special distinction.

These graduations and distinctions are reflected in the quaint and colorful niceties of academic dress.

Of particular interest is the cap or mortarboard. In the form of the biretta, it was the peculiar sign of the master. Its use has now spread far beyond
that highly select group to school girls and choir boys and even to the nursery school. *Sic transit* . . .

The gown, of course, is the basic livery of the scholar, with its clear marks of rank and status—the pointed sleeves of the bachelor, the oblong sleeves of the master, the full sleeves and velvet trimmings of the doctor. The doctors, too, may depart from basic black and break out into many colors—Harvard crimson or Yale blue or the scarlet splash of Oxford.

Color is the very essence of the hood: color in the main body to identify the university; color perhaps in the binding to proclaim the subject of the degree—orange for engineering, gold for science, the baser copper for economics, white for arts and letters, green for medicine, purple for law, scarlet for theology, and so on. Size is a further variable, as the hoods tend to lengthen from the three feet of the bachelor to the four of the doctor. So the birds are known by their plumage.*

With this color and symbolism, which is medieval though mutated, we stage our brief moment of pageantry, paying homage to that ancient community of scholars in whose shadow we stand, and acknowledging our debt to the university as one of the great institutional constructs of the Middle Ages. While looking back, however, we also celebrate the achievements of this present generation of students and look forward to the future of these our younger colleagues, whom we now welcome to our midst.

* David C. Elliot (1917–2007)
  Professor of History, Emeritus

* Black robes are traditionally worn by undergraduates; however, at Caltech, some students elect to wear a colored robe representing their student house.
AHMED H. ZEWAIL, Caltech’s Linus Pauling Professor of Chemistry and professor of physics, received the 1999 Nobel Prize in Chemistry. The honor came in recognition of his groundbreaking research that established the field of femtochemistry by enabling chemical reactions to be studied in real time, on a scale of one quadrillionth of a second. More recently, the renowned chemist and his group have developed four-dimensional electron microscopy for direct imaging of matter in 3-D and in time, with applications spanning physical and biological sciences.

In 2009, Zewail was appointed to President Obama’s Council of Advisors on Science and Technology. That same year, he was named the first U.S. Science Envoy to the Middle East as part of a program created by the State Department to foster science and technology collaborations between the United States and nations throughout the Middle East, North Africa, and South and Southeast Asia. Since the revolution in Egypt in early 2011, he has played an active role in his home country’s transition to a democratic state.

Zewail has long been a statesman and active participant in global affairs, particularly as they relate to science, education, and world peace. His commentaries on these global issues have appeared in the International Herald Tribune, the New York Times, the Los Angeles Times, the Wall Street Journal, and the Financial Times, among other publications. He has written more than 500 articles and books and has given public addresses all over the world.
His numerous honors include the Albert Einstein World Award of Science, the Benjamin Franklin Medal, the Robert A. Welch Award in Chemistry, the Leonardo da Vinci Award, the Wolf Prize, the King Faisal International Prize, and the American Chemical Society’s highest honor, the Priestley Medal. He was awarded the Grand Collar of the Order of the Nile, Egypt’s highest state honor, and was featured on postage stamps issued to honor his contributions to science and humanity. He holds honorary degrees from 40 universities around the world and is an elected member of many professional academies and societies, including the National Academy of Sciences, the American Philosophical Society, the Royal Society of London, and the Swedish, Russian, Chinese, and French Academies.

Zewail completed his early education in Egypt, receiving his Bachelor of Science and Master of Science degrees in chemistry from Alexandria University. He obtained a Ph.D. in chemical physics from the University of Pennsylvania and, after a postdoctoral fellowship at the University of California, Berkeley, joined the faculty at Caltech in 1976, and was granted tenure in 1978.
Academic Procession

Chief Marshal
Konstantinos P. Giapis, Ph.D.

Marshals
Geoffrey A. Blake, Ph.D.
Scott E. Fraser, Ph.D.
Melany L. Hunt, Ph.D.
Richard M. Murray, Ph.D.
Anneila I. Sargent, Ph.D.
Tapio Schneider, Ph.D.

Faculty Officers
Dennis A. Dougherty, Ph.D.
Sossina M. Haile, Ph.D.
Fiona Cowie, Ph.D.

Marching Order

Candidates for the Degree of Bachelor of Science
Candidates for the Degree of Master of Science
Candidates for the Degree of Doctor of Philosophy
Faculty Officers
The Faculty
The Chairs of the Divisions
The Dean of Graduate Studies
The Provost
The Trustees
The Commencement Speaker
The President
The Chair of the Board of Trustees
Program

Organ Prelude
Leslie J. Deutsch, Ph.D.

Processional
The Caltech Convocations Brass and Percussion Ensemble
William W. Bing, M.M., Conductor

Presiding
Kent Kresa
Chair of the Board of Trustees
California Institute of Technology

Commencement Speaker
Ahmed H. Zewail, Nobel Laureate
Linus Pauling Professor of Chemistry and Professor of Physics
California Institute of Technology
Revolutions in Science and Society

Choral Selection
The Caltech Glee Club
“For the Splendor of Creation”
Words by Carl P. Daw, Jr.
Music by Gustav Holst (1874–1934)
adapted from his 1916 orchestral suite, The Planets
Arranged by Jameson Marvin
Lyrics are on page 58.

Conferring of Degrees
Jean-Lou Chameau, Ph.D.
President
California Institute of Technology

Presentation of Candidates for Degrees

For the Degree of Bachelor of Science
Anneila I. Sargent, Ph.D.
Vice President for Student Affairs

For the Degree of Master of Science
Joseph E. Shepherd, Ph.D.
Dean of Graduate Studies

For the Degree of Doctor of Philosophy
Joseph E. Shepherd, Ph.D.
Biology

Stephen L. Mayo, Ph.D.
Division Chair

Chemistry and Chemical Engineering

Jacqueline K. Barton, Ph.D.
Division Chair

Engineering and Applied Science

Ares J. Rosakis, Ph.D.
Division Chair

Geological and Planetary Sciences

Kenneth A. Farley, Ph.D.
Division Chair

Humanities and Social Sciences

Jonathan N. Katz, Ph.D.
Division Chair

Physics, Mathematics and Astronomy

B. Thomas Soifer, Ph.D.
Division Chair

Announcement of Awards and Concluding Remarks

Jean-Lou Chameau, Ph.D.
President

Alma Mater

“Hail CIT”
By Manton Barnes, B.S. ’21
(The audience may join in;
lyrics are on page 59.)

Recessional

The Caltech Convocations Brass and Percussion Ensemble
Organ Postlude

“The Throop Institute March”
Composed by E. C. Kammermeyer in 1900 for the Throop Institute
Guitar and Mandolin Society

Live streaming of Caltech’s 2011 commencement ceremony will begin shortly before 10 a.m.
on Friday, June 10, at http://ustream.tv/caltech.
Bachelor of Science

Ioana Laura Aanei* Onesti, Bacau, Romania Chemistry
Zagid Abatchev Boise, Idaho Physics
Kiefer Pio Aguilar* Lubbock, Texas Bioengineering (Synthetic Biology)
Dallin Satoshi Akagi* Draper, Utah Computer Science
Anguel Tchavdarov Alexiev Granada Hills, California Chemistry
Shamili Allam Union City, California Bioengineering (Synthetic Biology)
Margaret Anastasia Allen San Diego, California Mechanical Engineering
Amit Alon Haifa, Israel Electrical Engineering
Arda Antikacioglu* Istanbul, Turkey Mathematics and Computer Science
Anuj Anil Arora* Mumbai, India Electrical Engineering and Business Economics and Management
Vishwaratn Asthana* Miami, Florida Bioengineering (Synthetic Biology)
Bamini Balaji * New Delhi, India Chemical Engineering (Biomolecular)
Ana Silvia Balibanu* Cluj-Napoca, Romania Mathematics
Neal Bansal New Delhi, India Engineering and Applied Science (Materials Science)
Rebecca Ann Barter Poland Spring, Maine Engineering and Applied Science (Computational and Neural Systems)
Donatela Elsa Bellone* Miami, Florida Chemistry
Yakov Ilich Berchenko-Kogan* Raleigh, North Carolina Mathematics and Control and Dynamical Systems (Minor)
Christopher Grant Berlind* Brookline, New Hampshire Computer Science
Christopher Bilinski* Oceanside, California Astrophysics and Business Economics and Management
Gary Allen Binder* Minot, North Dakota Physics
Timothy James Fornell Black* Madison, Wisconsin Mathematics
Brianne Marie Blakesley Sacramento, California Chemistry and History (Minor)
Clifford Alan Blakestad Highlands Ranch, Colorado Mathematics
Jason Charles Bland* West Chester, Pennsylvania Mathematics
Anton Mario Bongio Karrman Santa Rosa, California Applied and Computational Mathematics
Michael Alex Borisov Chicago, Illinois Electrical Engineering

* Students whose names are followed by an asterisk are being graduated with honor in accordance with a vote of the faculty.
† Students whose names are followed by a dagger are close to completion and will receive diplomas at the end of the academic year in which all graduation requirements are met.
<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
<th>Major(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edward Hing Bramston-Cook</td>
<td>Long Beach, California</td>
<td>Chemical Engineering (Process Systems)</td>
</tr>
<tr>
<td>Tristan Robert Brown*</td>
<td>Woodland Hills, California</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Vanessa Marie Burns*</td>
<td>Roseburg, Oregon</td>
<td>Bioengineering (Synthetic Biology) and English (Minor)</td>
</tr>
<tr>
<td>Can Cai*</td>
<td>Plainsboro, New Jersey</td>
<td>Chemical Engineering (Materials)</td>
</tr>
<tr>
<td>Grayson Lee Chadwick*</td>
<td>Santa Barbara, California</td>
<td>Biology</td>
</tr>
<tr>
<td>Laainam Chaipornkaew*</td>
<td>Bangkok, Thailand</td>
<td>Geophysics</td>
</tr>
<tr>
<td>Debiki Chakravarti*</td>
<td>Plainview, New York</td>
<td>Bioengineering (Synthetic Biology) and English</td>
</tr>
<tr>
<td>Rishi John Chandy*</td>
<td>Coral Spring, Florida</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Fei Chen*</td>
<td>Beaverton, Oregon</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>Huiling Chen*</td>
<td>Republic of Singapore</td>
<td>Physics</td>
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<tr>
<td>Xi (Cece) Chen</td>
<td>Troy, Michigan</td>
<td>Mechanical Engineering</td>
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<tr>
<td>Christine Cheng*</td>
<td>Suzhou, People’s Republic of China</td>
<td>Electrical Engineering</td>
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<tr>
<td>Benjamin J. Cherian†</td>
<td>San Jose, California</td>
<td>Applied Physics</td>
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<tr>
<td>Justine Xi-Yen Chia</td>
<td>Walnut Creek, California</td>
<td>Chemical Engineering (Biomolecular)</td>
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<tr>
<td>Abhiram Chivukula</td>
<td>Cary, North Carolina</td>
<td>Physics</td>
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<tr>
<td>Sean Seol Woong Choi*</td>
<td>South Pasadena, California</td>
<td>Computer Science and Business Economics and Management</td>
</tr>
<tr>
<td>Anthony Yu-Yong Chong</td>
<td>Saratoga, California</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Laura Teh Cladek*</td>
<td>Oak Brook, Illinois</td>
<td>Mathematics</td>
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<tr>
<td>Jack Edward Cochran*</td>
<td>Baton Rouge, Louisiana</td>
<td>Engineering and Applied Science (Aeronautics)</td>
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<tr>
<td>Emma Grace Cohen*</td>
<td>Los Angeles, California</td>
<td>Mathematics</td>
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<tr>
<td>Arianne Xaviera Collopy</td>
<td>Urbana, Illinois</td>
<td>Chemistry</td>
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<tr>
<td>Perrin Thalia Sau Pung Considine</td>
<td>Beaverton, Oregon</td>
<td>Biology</td>
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<tr>
<td>Jeremy Coulter Davis†</td>
<td>Mesa, Arizona</td>
<td>Computer Science</td>
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<tr>
<td>Laura Jane Decker</td>
<td>Bridgewater, New Jersey</td>
<td>History</td>
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<tr>
<td>Ryan Arthur Denlinger*</td>
<td>Sacramento, California</td>
<td>Applied and Computational Mathematics</td>
</tr>
<tr>
<td>Tina Xin Ding</td>
<td>Walnut, California</td>
<td>Chemistry</td>
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<tr>
<td>Vu Quoc Dinh*</td>
<td>Anaheim, California</td>
<td>Biology</td>
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<tr>
<td>Susan Juel Dittmer*</td>
<td>Saint Charles, Illinois</td>
<td>Physics</td>
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<tr>
<td>Sherwin Doroudi</td>
<td>Mission Viejo, California</td>
<td>Economics</td>
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<tr>
<td>Janesha Dua*</td>
<td>New Delhi, India</td>
<td>Electrical Engineering</td>
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<tr>
<td>Sachith Anurudde Dunatunga*</td>
<td>Tucson, Arizona</td>
<td>Mechanical Engineering</td>
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<tr>
<td>Jeremy Ehrhardt</td>
<td>Hamilton Square, New Jersey</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Fady Mohamed El-Gabalawy*</td>
<td>San Marino, California</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Ryan Scott Elmquist*</td>
<td>Woodbury, Minnesota</td>
<td>Computer Science</td>
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<tr>
<td>Colin Michael Ely*</td>
<td>Sudbury, Massachusetts</td>
<td>Mechanical Engineering</td>
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<tr>
<td>Daniel Marc Erenrich*</td>
<td>West Palm Beach, Florida</td>
<td>Computer Science</td>
</tr>
</tbody>
</table>

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14
Bachelor of Science continued

Nnoduka Chukwudile Eruchalu*  Nnobi, Anambra, Nigeria  Electrical Engineering
Benjamin Justus Faber*  Hays, Kansas  Physics
Daniil N. Feldman  Kew Gardens, New York  Astrophysics
Michelle Nora Filiba*  San Diego, California  Computer Science
Kristina Marie Flavier  Carlsbad, California  Chemistry
Paul Alan Fleiner  McKees Rocks, Pennsylvania  Physics
Christine Leonore Fuller*  Auburn, California  Mechanical Engineering
Sarvesh Garimella  Athens, Georgia  Planetary Science and Engineering and Applied Science (Environmental Science and Engineering)
Theresa Lynn Geiger*  Sleepy Hollow, Illinois  Chemistry
Casey Carter Glick*  Chico, California  Applied Physics and Geochemistry and History (Minor)
Prakhar Goel*  Dallas, Texas  Mathematics and Business Economics and Management
Keir Gonyea†  Naperville, Illinois  Mechanical Engineering
Scott Lee Goodfriend  Enterprise, Alabama  Chemical Engineering (Biomolecular)
Deepthi Gopal†  Bangalore, India  Physics
Sarah Danielle Griffis*  Crown Point, Indiana  Engineering and Applied Science (Environmental Science and Engineering)
Cameron Thomas Gross  Solon, Iowa  Engineering and Applied Science (Materials Science)
Hassan I. Guled  Mogadishu, Somalia  Economics and Applied and Computational Mathematics
Pallavi Kavita Gunalan  Salt Lake City, Utah  Bioengineering (Synthetic Biology) and English
Luke W. Guo*  San Diego, California  Electrical Engineering
Sonal Gupta  New Delhi, India  Computer Science
Daniel Riley Haas  Nashville, Tennessee  Physics
Tyler J. Hannasch*  Brentwood, Tennessee  Mechanical Engineering and Business Economics and Management
Kevin Alexander Hartman  Oak View, California  Chemical Engineering (Biomolecular)
Lucas Allan Hartsough*  Scottsdale, Arizona  Bioengineering (Synthetic Biology)
Joseph Cole Kelner Hershkowitz*  Arlington, Virginia  Mechanical Engineering
Albert Aibo Ho*  Naperville, Illinois  Mechanical Engineering
Sarah Louise Howell*  Oklahoma City, Oklahoma  Applied Physics
Guozhi Huang*  Nanjing, People’s Republic of China  Mechanical Engineering
Li Hong Huang*  Cupertino, California  Computer Science
Alexander Chunhachatchawalkul Hudson*  Vancouver, Washington  Applied Physics
Ran Huo*  Scarsdale, New York  Physics
Nadia Iqbal  Williamsville, New York  Bioengineering (Synthetic Biology)
Jamie Lynn Jackson†  Germantown, Tennessee  Computer Science
Ning-Juin Jan  Howell, New Jersey  Bioengineering (Synthetic Biology)
Casey Jao*  Dayton, Maryland  Mathematics
James Malvern Hill Jester  Coronado, California  Electrical Engineering
Suyao Ji*  Qingdao, People’s Republic of China  Electrical Engineering
Menglu Michelle Jiang*  Vancouver, Washington  Mechanical Engineering and Business Economics and Management
Kirit Sukrit Karkare*  Thousand Oaks, California  Physics and English (Minor)
Brett Harris Kassof  Baldwin, New York  Applied and Computational Mathematics
Lauren Christine Kendrick  Jacksonville, Florida  Applied Physics
Christopher Thomas Kennelly*  Munster, Indiana  Computer Science
Asif R. Khan*  Columbia, South Carolina  Electrical Engineering
Deyeon Kim  Seoul, Republic of Korea  Business Economics and Management and Political Science
Emily S. Kim*  Bellevue, Washington  Biology
Jeffrey Michael Kiner  Kirkland, Washington  Mathematics
Daniel Walter Kolodrubetz*  San Antonio, Texas  Physics
Pranay Dipak Kothari*  Sugar Land, Texas  Biology and Business Economics and Management
Jonathan David Krause*  Strongsville, Ohio  Computer Science
Jessie Ku*  Diamond Bar, California  Applied Physics
Pauline Juliet Ku†  River Grove, Illinois  Biology
Calvin Kuo*  Newton, Massachusetts  Mechanical Engineering and Computer Science
Benjamin Bernard Kurtz  Golden, Colorado  Physics
Manuel De Jesus Lagang, Jr.*  Pasadena, California  Computer Science
Anson Lam  Calgary, Alberta, Canada  Astrophysics
Thomas Jared Lampo*  Elmhurst, Illinois  Chemical Engineering (Biomolecular)
Alexander Moore Lapides*  Naperville, Illinois  Chemistry
Christina Esther Lee*  Saratoga, California  Computer Science
Dylan Lee  Corvallis, Oregon  Mechanical Engineering
Grace Yoon Lee†  Budang, Republic of Korea  Applied and Computational Mathematics
Joshua Warren Lee  Sherman Oaks, California  Applied Physics
Kyung Ha Lee*  Daegu, Republic of Korea  Physics
Mariya Levina*  Los Angeles, California  Geology
Stacy Michelle Levine  Northridge, California  Mechanical Engineering and Aerospace (Minor)
Garrett Darl Lewis  Albuquerque, New Mexico  Applied Physics and Political Science and Aerospace (Minor)
Bobo Li  Plano, Texas  Computer Science
Flora Mian Li*  Cerritos, California  Biology
Lily Li†  Irvine, California  Bioengineering (Synthetic Biology)
Lin Li* Tianjin, People’s Republic of China Mechanical Engineering
Lisha Li* New York, New York Applied and Computational Mathematics
Warren Liao Cerritos, California Engineering and Applied Science (Materials Science)
Dongkook Dennis Lim* West Lafayette, Indiana Biology
Jeffrey Thomas Lin* Pleasanton, California Mathematics and Physics
Joy Lin* Diamond Bar, California Geochemistry
Kurt James Litsch* Ransom Canyon, Texas Physics
Kyle Richard Littler Mission Viejo, California Computer Science
Hanna Ken-Yuin Liu* Los Angeles, California Geobiology
Joyce Liu* Fremont, California Chemical Engineering (Biomolecular)
Colin Murdoch Logan* Austin, Texas Applied and Computational Mathematics and Business Economics and Management
Dingchao Lu* Fullerton, California Electrical Engineering and Business Economics and Management
Helen Yu Luo* Sammamish, Washington Chemical Engineering (Biomolecular)
Erik Madsen* Danville, California Physics and Economics
Elizabeth Marie Mak* Pasadena, California Biology
Aliza Ilana Malz New York, New York Physics and History (Minor)
Faith Gregory Manary San Diego, California Mechanical Engineering and English
Sarah Epstein Marzen* McLean, Virginia Physics
Michael Vincent Maseda* Tampa, Florida Astrophysics and English
Maral Mazrooei Irvine, California Bioengineering (Synthetic Biology)
Gabriel Joel Mendoza* El Paso, Texas Independent Studies Program
Brian Ka-Jun Mok* Temple City, California Mechanical Engineering
Kevin D. Monajati Rochester, New York Mechanical Engineering
Joseph Ellis Moore, Jr. Plant City, Florida Applied and Computational Mathematics and Economics
Gerardo Antonio Morabito Caracas, Venezuela Mechanical Engineering
Evan Adrian Robjohn Murphy Lutherville, Maryland Computer Science
Chantal Lian Mustoe Golden, Colorado Chemistry and English (Minor)
Hoi Yee Nam* Hong Kong, PRC Mechanical Engineering
Karthik Narsimhan* West Lafayette, Indiana Chemical Engineering (Materials)
Priya Mehta Nayak* Van Nuys, California Physics
Ryan Lane Newton* Austin, Texas Mechanical Engineering and Business Economics and Management
Albert Han Ng* Freehold, New Jersey Electrical Engineering
Long Thanh Nguyen† Houston, Texas Mechanical Engineering
Viet Anh Nguyen Huu* Warsaw, Poland Chemical Engineering (Biomolecular)
Daniel Stuart Obenshain Glyndon, Maryland Computer Science and English (Minor)
Dongyoon Oh* Seoul, Republic of Korea Physics
Wei Jian Ong* Republic of Singapore Chemistry
Jim Ouyang† Chapel Hill, North Carolina Computer Science
Aleksandr Palatnik* Pewaukee, Wisconsin Computer Science
Saurabh Kumar Pandey* Rochester, Michigan Applied and Computational Mathematics
Antanu Paul* Pittsburg, Kansas Applied and Computational Mathematics
Jeanne Yiwen Peng New Orleans, Louisiana Electrical Engineering
Kathryn A. Peters Phoenix, Arizona Business Economics and Management
Erik Axel Peterson* Henderson, Nevada Mathematics
Alan Michael Pezeshki* Troy, Michigan Chemical Engineering (Environmental)
Suzanna Marie Piatt Ridgecrest, California Mechanical Engineering
Andrey D. Poletayev* Moscow, Russia Chemistry
Andre Pradhanan Tampubolon* Jakarta, Indonesia Applied and Computational Mathematics
Andrew John Price* La Jolla, California Applied Physics
Nicholas Elijah Price Santa Clarita, California Electrical Engineering
Sedona H. Price* Fairbanks, Alaska Physics
Sylvia Mary Puglisi† Oxnard, California Engineering and Applied Science (Computational and Neural Systems)
Kasra Rahbar Houston, Texas Electrical Engineering
Pradeep Ramesh* Thousand Oaks, California Applied Physics
Arjun Ravikumar* Carlsbad, California Bioengineering (Synthetic Biology)
Sara Elizabeth Renfrew* Sewickley, Pennsylvania Chemical Engineering (Materials)
Nicholas Rosa Tupelo, Mississippi Chemistry and Biology
Daniel Ethan Rosenberg* Jupiter, Florida Computer Science
Robert Alan Rosenberg Santa Monica, California Applied Physics
Jacqueline Dodds Rousseau* San Jose, California Physics and Business Economics and Management
Gregory Jacob Rubinstein* Chapel Hill, North Carolina Chemical Engineering (Materials) and Business Economics and Management
Aryan Safaie Fountain Valley, California Mechanical Engineering
Gerard Francis Salinas Austin, Texas Mechanical Engineering
Allison Jill Saltzman Merrick, New York Mechanical Engineering
Daniel Roland Sanchez Miami, Florida Chemistry
Karthik Venkataraman Sarma* Burr Ridge, Illinois Computer Science
Sanket Satpathy* Bhubaneswar, Orissa, India Electrical Engineering and Applied and Computational Mathematics
Joseph Adam Schmitz* O’Neill, Nebraska Electrical Engineering
Elliott Schneider* Cos Cob, Connecticut Physics
Rebecca Lynn Scholz* Bend, Oregon Biology
Nicholas Scianmarello* Miami, Florida Physics
Bachelor of Science continued

Jasmine Soria Sears† Beaverton, Oregon Applied Physics and English
Dongjin Seo* Davis, California Electrical Engineering
Michael Shafer Thousand Oaks, California Computer Science
Katherine Blackburn Shakman Chicago, Illinois Biology
Nitin Sharma* Noida, India Electrical Engineering
Dongying (Erin) Shen† Shanghai, People’s Republic of China Chemical Engineering
(J Biomolecular)
Jing Shi* Chongqing, People’s Republic of China Physics
Kedron Pyle Silsbee* Mansfield, Connecticut Physics
Marland Hoy Sitt* Lititz, Pennsylvania Electrical Engineering and Business Economics
and Management
Alexandra Lauren Smith La Cañada Flintridge, California Mechanical Engineering
William Martin Steinhardt* Princeton, New Jersey Geophysics
William Insang Suh Rancho Palos Verdes, California Biology
Yuxiao Sun Louisville, Kentucky Chemistry
Yoon Chan Taak† Seoul, Republic of Korea Physics
Dalia Beth Taylor* Lake Oswego, Oregon Biology
Gloria Eve Tran* Orange, California Biology and English (Minor)
Ying-Ying Tran Princeton Junction, New Jersey Mathematics
Debbie G. Tseng Danville, California Biology
Brian Louis Ventura Nacogdoches, Texas Mechanical Engineering and History (Minor)
Kyle Joseph Verdone Spring, Texas Business Economics and Management
Pengcheng Wang* Guangzhou, People’s Republic of China Biology and Chemistry
Richard Yufan Wang* Taiwan, ROC Mechanical Engineering
Yi Jenny Wang* Wellesley, Massachusetts Mechanical Engineering
Ziyi Wang Shanghai, People’s Republic of China Chemistry
Talia Michelle Weiss* New Rochelle, New York Bioengineering (Devices)
Kevin Thomas Welch Austin, Texas Bioengineering (Synthetic Biology) and English
Qing Yu Weng* Charlotte, North Carolina Biology and English
Christopher Michael Whelan Dana Point, California Physics
Christopher Joseph White* Waldwick, New Jersey Physics and Mathematics and
Philosophy (Minor)
Claudia Anne Whitten Dallas, Texas Computer Science
Aaron Joseph Wilkowski Woodland, California Computer Science
Christopher Allen Wong* Berkeley, California Applied and Computational Mathematics
Fan Tony Wu* Fort Collins, Colorado Electrical Engineering
James Jiegang Wu Miami, Florida Applied and Computational Mathematics
Stephanie Marie Wuerth* Newburgh, Indiana Geochemistry and English
Patrick Jing Xia* Wilmette, Illinois Computer Science and Electrical Engineering
Bachelor of Science continued

Jenny Zhou Xiong  San Jose, California  Engineering and Applied Science (Computational and Neural Systems)
Fei Yang*  Houston, Texas  Mechanical Engineering and Control and Dynamical Systems (Minor)
Lili Yang*  Woodbury, Minnesota  Applied and Computational Mathematics and Business Economics and Management
Samuel Jialuo Yang*  San Dimas, California  Electrical Engineering
Wing-Hin Jonathan Yeung*  Jacksonville, Florida  Electrical Engineering
Cindy Xinxin You*  San Diego, California  Applied and Computational Mathematics
Alvin Yu*  Hacienda Heights, California  Physics
Matthew Chuck-Jun Yu*  San Jose, California  Electrical Engineering
Wesley Yung-Hsu Yu*  Irvine, California  Chemistry
Xinlin Yu  Cypress, Texas  Chemical Engineering (Biomolecular)
Erin Noelle Zampaglione  San Jose, California  Biology
Kun Zhu*  Apple Valley, California  Chemistry
Master of Science

David Gregory Abrecht (Chemical Engineering) B.S. (Chemical Engineering), B.S. (Paper Science and Engineering), North Carolina State University 2007.


Thomas Frield Allen (Mechanical Engineering) B.S., University of California, Berkeley 2005.

Jeffrey Scott Amelang (Mechanical Engineering) B.S., Brigham Young University 2009.


Kristin Diane Bergmann (Geology) B.A., Carleton College 2004.

Pinaky Bhattacharyya (Civil Engineering) B.Tech., Indian Institute of Technology, Bombay 2010.


Neal Phillip Bitter (Aeronautics) B.S., Milwaukee School of Engineering 2010.

Laura Grace Book (Physics) B.S., University of Illinois at Urbana-Champaign 2007.

Peter Garrett Bridi (Space Engineering) B.S., Lehigh University 2010.

Steven Tai-hsiang Chao (Chemistry) B.A., B.S., The University of Texas at Austin 2008.

Jonathan Chiang (Mechanical Engineering) B.S., Cornell University 2010.


Tristan William Day (Chemical Engineering) B.S., University of Arizona 2009.


Steven Brian Demers (Materials Science) B.S., Cornell University 1996; M.S., University of Southern California 1997.

Lawrence Joseph Dooling (Chemical Engineering) B.S., University of Pennsylvania 2008.


Subrahmanyam Duvvuri (Space Engineering) B.Tech., Indian Institute of Technology, Madras 2010.

Hal S. Emmer (Materials Science) B.S.E., University of Pennsylvania 2009.

Joseph James Ensberg (Chemical Engineering) B.S., University of California, Irvine 2009.

Constantine Glen Evans (Physics) B.S., University of California, San Diego 2005.

William Fan (Electrical Engineering) B.S., California Institute of Technology 2010.


Fernando Ferrari de Goes (Computer Science) B.E., UNICAMP 2006; M.S., Instituto de Computação – UNICAMP 2009.

Adi Wijaya Gani (Electrical Engineering) B.S., California Institute of Technology 2010.

Mark David Goldberg (Electrical Engineering) B.S., University of California, Riverside 2004; M.S., California State University, Los Angeles 2008.
Marcella Mary Gomez (Mechanical Engineering) B.S., University of California, Berkeley 2008.

Jason Daniel Goodpaster (Chemical Engineering) B.S., University of Illinois at Urbana-Champaign 2008.

Liling Gu (Physics) B.S., University of Science and Technology of China 2008.

Qian He (Electrical Engineering) B.E., Tsinghua University 2009.

Vanessa Mary Heckman (Civil Engineering) B.S., California Institute of Technology 2006.

Stefanie Heyden (Mechanical Engineering) Diploma, Ruhr-University Bochum 2010.

Kevin Peter Hickerson (Physics) B.S., California Institute of Technology 2002.

Serin Hong (Mathematics) B.S., Stanford University 2008; M.S., 2009.

Rui Huang (Electrical Engineering) B.E., Tsinghua University 2009.

Yihe Huang (Geophysics) B.S., Tianjin University 2007; M.S., 2009.

Esteban Antonio Lemus Hufstedler (Aeronautics) S.B., Massachusetts Institute of Technology 2009.


Mohammad Bagher Iraji (Electrical Engineering) B.S., Sharif University of Technology 2007; M.S., 2009.


Alex Xavier Jerves Cobo (Applied Mechanics) Civil Engineer, Universidad de Cuenca 2006; Magister, Universidad Politécnica Salesiana del Ecuador 2009.

Chenguang Ji (Materials Science) B.S., Tsinghua University 2009.

Jie Jiang (Mechanical Engineering) B.S., University of Illinois at Urbana-Champaign 2008.

Junle Jiang (Geophysics) B.S., Peking University 2009.

Andrea Bui Kanady (Social Science) B.A., University of California, Irvine 2008.

Jaclyn Kimble (Social Science) B.A., Yale College 2009.

Hao-Hsien Ko (Electrical Engineering) B.S., National Taiwan University 2007.


Tian Lan (Materials Science) B.S., Nanjing University 2006.

George Sing-Ho Lee (Electrical Engineering) S.B. (Computer Science), S.B. (Electrical Engineering), Massachusetts Institute of Technology 2003.

Seung Ah Lee (Electrical Engineering) B.S., Seoul National University 2007; M.S., 2009.


Joy Lin (Geobiology) B.S., California Institute of Technology 2011.

Minghong Lin (Computer Science) B.E., University of Science and Technology of China 2006; M.Phil., The Chinese University of Hong Kong 2008.
Chih-Hao Liu (Electrical Engineering) B.S., National Tsing Hua University 2003; M.S., National Taiwan University 2005.
Zhenhua Liu (Computer Science) B.E., Tsinghua University 2006; M.S., 2009.
Andrew Keith Matzen (Geology) B.S., University of Tulsa 2005.
Cheikh Oumar Mbengue (Aeronautics) B.S., United States Military Academy 2006; M.S., University of Oxford 2008.
Joseph Toshiro Meyerowitz (Biochemistry and Molecular Biophysics) B.S.E., Duke University 2009.
Nisha Mohan (Space Engineering) B.E., Tagore Engineering College 2010.
Lauren Christine Montemayor (Space Engineering) S.B., Massachusetts Institute of Technology 2010.
Yun Mou (Chemistry) B.S., National Taiwan University 2004; M.S., 2006.
Megan Eve Newcombe (Geology) B.A., M.Sc., The University of Cambridge 2009.
Alexander Vinh Nguyen (Electrical Engineering) B.S., University of Rochester 2006; M.D., University of California, San Francisco 2010.
Nam Phuong Nguyen (Electrical Engineering) B.S., California Institute of Technology 2009.
Gina Marie Olson (Aeronautics) B.S., Rose-Hulman Institute of Technology 2010.
Luis M. Otero (Electrical Engineering) B.S., Universidad Simon Bolivar 2008.
Sami Oymak (Electrical Engineering) B.S., Bilkent University 2009.
Alex Hao-Yu Pai (Electrical Engineering) B.S., University of California, Berkeley 2009.
Narae Park (Chemistry) B.S., University of California, San Diego 2005.
Ryan Matt Pettibone (Physics) B.S. (Mathematics), B.S. (Physics), University of Rochester 2008.
Alison Martha Piascki (Geology) S.B., Massachusetts Institute of Technology 2009.
Chaitanya Rastogi (Electrical Engineering) B.S., California Institute of Technology 2009.
Vishag Ratnaswamy (Space Engineering) B.S. (Applied Mathematics), B.S. (Mechanical Engineering), New Jersey Institute of Technology 2009; M.S., 2010.
Alice Kristin Robinson (Biology) B.A., B.S., University of North Carolina, Chapel Hill 2009.
Saman Saeedi (Electrical Engineering) B.S. (Electrical Engineering), B.S. (Physics), Sharif University of Technology 2010.
Danien Alexander Scipio (Materials Science) B.S., University of San Francisco 2008.


Constantine Sideris  *(Electrical Engineering)*  B.S., California Institute of Technology 2010.


John Bradley Steeves  *(Space Engineering)*  B.Sc., University of Saskatchewan 2010.


Dustin Phillip Sumny  *(Aeronautics)*  B.S., The University of Texas 2010.


Melissa Midori Tanner  *(Mechanical Engineering)*  S.B., Massachusetts Institute of Technology 2009.


Marion Yolande Thomas  *(Geology)*  Licence, Université de Bretagne Occidentale 2005; M.S., 2007.


Sally June Tracy  *(Materials Science)*  B.A., Occidental College 2008.

Dmitriy Tseliakhovich  *(Astrophysics)*  B.S., Belarusian State University 2006; M.S., Carleton University 2008.

Carlos Ventura Piazza  *(Space Engineering)*  Ingeniero Aeronáutico, Escuela Superior de Ingenieros Universidad de Sevilla 2010.


Claire Marie Waller  *(Geology)*  B.S., Virginia Polytechnic Institute and State University 2008.

Esther Sue Wang  *(Electrical Engineering)*  B.S., California Institute of Technology 2009.

Liang Wang  *(Electrical Engineering)*  B.E., Huazhong University of Science and Technology 2009.


Charles Stanley Wojnar  *(Aeronautics)*  B.S., University of Illinois at Urbana-Champaign 2010.

Shuang Xie  *(Electrical Engineering)*  B.S., California Institute of Technology 2009.

Yuan Xuan  *(Aeronautics)*  Diplôme d’Ingénieur, École Polytechnique 2010.

Francisco Antonio Zabala  *(Control and Dynamical Systems)*  B.S., California State University, Fullerton 2007.

Daniel Roszhart Zehr  *(Space Engineering)*  B.S., University of Kansas 2010.

Chengshan Zhou  *(Electrical Engineering)*  B.S., California Institute of Technology 2009.
Doctor of Philosophy

DIVISION OF BIOLOGY


Janet Chow (Biology) B.S., University of California, Los Angeles 2006. Thesis: A Pathobiont of the Mammalian Microbiota Balances Intestinal Inflammation and Colonization.


Anne Christina Hergarden (Biology) B.S., University of Texas at Austin 1997. Thesis: The Role of Peptidergic Neurons in the Regulation of Satiety in Drosophila.


When more than one field of study is listed, the first is the major and the second and others are minors.
Lawrence A. Wade  (Molecular Biology and Biochemistry)  B.A., California State University, Fullerton 1980.
   Thesis: An Evanescent Perspective on Cells.
Liming Wang  (Biology)  B.S., Peking University 2005.
   Thesis: Genetic and Neural Regulation of Aggressive Behavior in Drosophila melanogaster.
Catherine Marie Ward  (Biochemistry and Molecular Biophysics)  B.S., North Carolina State University 2003.

DIVISION OF CHEMISTRY AND CHEMICAL ENGINEERING
Habibullah Ahmad  (Chemistry)  B.S., Bowling Green State University 2003.
   Thesis: Microfluidic Platforms for Quantitative, Multiplexed Protein Detection.
Andrew Harris Babiskin  (Chemical Engineering)  B.S., University of Maryland, College Park 2003; M.S., California Institute of Technology 2005.
   Thesis: Development of RNA-based Genetic Control Elements for Predictable Tuning of Protein Expression in Yeast.
Steven M. Baldwin  (Chemistry)  B.S., M.S., Bucknell University 2002.
Peigen Cao  (Chemistry)  B.S., Suzhou University 1996; M.S., 1999.
   Thesis: Surface Chemistry at the Nanometer Scale.
Mike Ming Yu Chen  (Chemical Engineering)  B.S. University of California, Berkeley 2002.
Yvonne Yu-Hsuan Chen  (Chemical Engineering and Biology)  B.S., Stanford University 2004; M.S., California Institute of Technology 2007.
   Thesis: Genetic Control of T-Cell Proliferation with Synthetic RNA Regulatory Systems.
Puneet Singh Chhabra  (Chemical Engineering and Environmental Science and Engineering)  B.S. (Mathematics), B.S. (Chemical Engineering), University of Illinois at Urbana-Champaign 2005; M.S., California Institute of Technology 2007.
Paul Gregory Clark  *(Chemistry)*  B.S., Pacific Lutheran University 2005.  
Thesis: Synthesis of Interlocked Molecules by Olefin Metathesis.


Jillian Lee Dempsey  *(Chemistry)*  S.B., Massachusetts Institute of Technology 2005.  
Thesis: Hydrogen Evolution Catalyzed by Cobaloximes.


Thesis: The Biological Activity of Rhodium Metalloinsertors.


Anthony G. Fitch  *(Chemistry)*  B.S., University of Nebraska at Kearney 2002.  

Andreas Gahlmann  *(Chemistry)*  B.S., University of Portland 2005.  


Shelby Brooke Hutchens  *(Chemical Engineering)*  B.S., Oklahoma State University 2004; M.S., California Institute of Technology 2006.  

Joyce Huynh  *(Chemical Engineering)*  B.S., University of California, Berkeley 2006; M.S., California Institute of Technology 2009.  

Thesis: Post-translational Membrane Protein Targeting by the Chloroplast Signal Recognition Particle.
Keiichiro Kushiro  (Biochemistry and Molecular Biophysics)  B.S., Cornell University 2004.
   Thesis: Outer Sphere Effects on the Copper Sites of Pseudomonas Aeruginosa Azurins.
I-Ren Lee  (Chemistry)  B.S., National Tsing Hua University 1998; M.S., 2000.
Mary W.C. Louie  (Chemical Engineering and Materials Science)  B.S., University of California, Berkeley 2005; M.S., California Institute of Technology 2007.
Sandy Ma  (Chemistry)  B.S., Stanford University 2004.
Michael E. Meyer  (Chemistry)  B.S., California State Polytechnic University, Pomona 2002.
Katy Ann Muzikar  (Chemistry)  B.S., University of California, San Diego 2005.
Joshua Henry Palmer  (Chemistry)  B.S., New York University 2006.
John Wilson Phillips  (Biochemistry and Molecular Biophysics)  B.S., M.S., Yale University 2002.
   Thesis: Biological Activity of a Py-Im Polyamide Androgen Receptor Antagonist.
Imogen Mary Pryce  (Chemical Engineering and Applied Physics)  B.S., The Ohio State University 2006; M.S., California Institute of Technology 2008.
   Thesis: Resonant Metallic Nanostructures for Active Metamaterials and Photovoltaics.
Havala Olson Taylor Pye  (Chemical Engineering and Environmental Science and Engineering)  B.S., University of Florida 2005; M.S., California Institute of Technology 2007.
Christine Anne Romano  (Chemistry)  B.S., The University of Chicago 2005.
Caroline Thalia Abdunnur Saouma (Chemistry) S.B., Massachusetts Institute of Technology 2005.
Thesis: Iron Mediated Reduction Schemes for Dinitrogen and Carbon Dioxide.

Valerie J. Scott (Chemistry) B.S., Brandeis University 2005.
Thesis: Investigations of C-H Activation and the Conversion of Methanol to Triptane.

Yao Sha (Chemistry) B.S., Peking University 2005.


Nathaniel Haynes Sherden (Chemistry) B.S. (Chemistry), B.S. (Computer Science), The University of Chicago 2004.
Thesis: Mechanistic Investigations into the Palladium-Catalyzed Decarboxylative Allylic Alkylation of Ketone Enolates using the PHOX Ligand Architecture.

Chang Ho Sohn (Chemistry) B.S., Seoul National University 2006.

Kathleen Marie Spencer (Chemistry) B.S., Villanova University 2005.

Thesis: Cavity Ringdown Spectroscopy of the Nitrate and Peroxy Radicals.

James A. Van Deventer (Chemical Engineering) B.S., Stanford University 2004; M.S., California Institute of Technology 2007.
Thesis: Biophysics and Protein Engineering with Noncanonical Amino Acids.

Ophir Vermesh (Chemistry) B.S., Stanford University 2001; M.S., 2002.
Thesis: Highly Informative Analytical Platforms for Rapid, Non-Invasive Diagnosis and Stratification of Patients with Cancer.

Don Walker (Chemistry) B.S., Southern University and A&M College 2003.

Charlotte A. Whited (Chemistry) B.S., University of Delaware 2006.
Thesis: Tuning Nitric Oxide Synthase: Investigating the Thiolate “Push” and No Release.

Fan Yang (Chemistry) B.S., University of Science and Technology of China 2004.
Thesis: Biochemical and Biophysical Characterizations of Immunoglobulin Superfamily Receptors Neogenin and L1.
Thesis: Following Motion of Early Heart Development at the Cellular Level Using Confocal Microscopy in Transgenic Quail Embryos.

DIVISION OF ENGINEERING AND APPLIED SCIENCE

Mohamed Alaa El-Dien Mahmoud Hussein Aly (Electrical Engineering) B.Sc., Cairo University 2003; M.S., California Institute of Technology 2007.
Thesis: Searching Large-Scale Image Collections.

Marco Andreetto (Electrical Engineering) Laurea, University of Padova 2001; M.S., California Institute of Technology 2005.


Nicholas Sebastian Boechler (Aeronautics) B.S., Georgia Institute of Technology 2007; M.S., California Institute of Technology 2008.
Thesis: Granular Crystals: Controlling Mechanical Energy with Nonlinearity and Discreteness.

Ryan Morrow Briggs (Materials Science) B.S., Colorado School of Mines 2005; M.S., 2006; M.S., California Institute of Technology 2008.

Evan Cornell Brown (Materials Science) B.E., University of California, Irvine 2006; M.S., California Institute of Technology 2008.

Justin Brown (Mechanical Engineering) B.S., University of New Mexico 2007; M.S., California Institute of Technology 2008.

David Isaac Buchfuhrer (Computer Science) B.S., Harvey Mudd College 2006; M.S., California Institute of Technology 2008.


Ray Kui-Jui Huang (Electrical Engineering) B.S., Cornell University 2005; M.S., California Institute of Technology 2006.  


Thesis: Spice$_2$: A Spatial, Parallel Architecture for Accelerating the SPICE Circuit Simulator.


Gretchen Keppel-Aleks (Environmental Science and Engineering) S.B., Massachusetts Institute of Technology 2004; M.S., California Institute of Technology 2006.  
Thesis: Constraints on the Global Carbon Budget from Variations in Total Column Carbon Dioxide.


Alan Jake-Man Kwan (Environmental Science and Engineering) B.S., University of California, Berkeley 2000.  


Javad Lavaeiyanesi (Control and Dynamical Systems) B.E., Sharif University of Technology 2003; M.A.Sc., Concordia University 2007.  
Thesis: Large-Scale Complex Systems: From Antenna Circuits to Power Grids.

Francisco López Jiménez (Aeronautics) M.E., University of Seville 2006; M.S., California Institute of Technology 2007.  

John Allen Meier (Mechanical Engineering) B.S., Stanford University 2006; M.S., California Institute of Technology 2007.  
Thesis: A Novel Experimental Study of a Valveless Impedance Pump for Applications at Lab-On-Chip, Microfluidic, and Biomedical Device Size Scales.
Ashley Moore  *(Control and Dynamical Systems)*  B.S., University of Colorado 2006; M.S., California Institute of Technology 2007.

Thesis: Interpretation and Scaling of Positional Information during Development.


Concetta Pilotto  *(Computer Science)*  Laurea, University of Roma “La Sapienza” 2003; M.S., California Institute of Technology 2007.
Thesis: Local-to-Global in Multi-Agent Systems.


Celia Reina Romo  *(Aeronautics)*  M.E., University of Seville 2006; M.S., École Centrale Paris 2006; M.S., California Institute of Technology 2007.

Thesis: Optoelectronic Control of the Phase and Frequency of Semiconductor Lasers.

Shaunak Sen  *(Control and Dynamical Systems)*  B.Tech., Indian Institute of Technology, Kanpur 2003; M.S., California Institute of Technology 2011.
Thesis: Regulatory Consequences of Bandpass Feedback in a Bacterial Phosphorelay.

Sormeh Shadbakht  *(Electrical Engineering)*  B.S., Sharif University of Technology 2004; M.S., California Institute of Technology 2006.

Young Shik Shin  *(Bioengineering)*  B.S., Seoul National University 2002; M.S., 2004; M.S., California Institute of Technology 2006.
Thesis: Micro- and Nanotechnology-Based Platforms to Study Biology at Small Scale: From DNAs to Single Cells.
Thesis: Damage Evolution in Composite Materials and Sandwich Structures under Impulse Loading.

Merrielle Therese Spain (Computation and Neural Systems) B.S., University of California, Los Angeles 2005.
Thesis: Modeling and Predicting Object Attention in Natural Scenes.

Thesis: Repeatability in Joint-Dominated Deployable Masts.


Molei Tao (Control and Dynamical Systems and Physics) B.S., Tsinghua University 2006.


Ali Vakili (Electrical Engineering) B.S., Sharif University of Technology 2004; M.S., California Institute of Technology 2006.


Gabriela Natalia Venturini (Aeronautics and Chemistry) Chemical Engineer, Universidad de Buenos Aires 2004; M.S., California Institute of Technology 2006.

Udi Benjamin Vermesh (Bioengineering) B.S., Emory University 2003.
Thesis: Technologies for Protein Analysis and Tissue Engineering, with Applications in Cancer.

Svitlana S. Vyetrenko (Applied and Computational Mathematics) B.S., National Taras Shevchenko University of Kyiv 2003; M.S., University of Arkansas 2005; M.S., California Institute of Technology 2008.
Thesis: Network Coding for Error Correction.


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Ching-Chih Weng  (Electrical Engineering and Applied and Computational Mathematics)  B.S., National Taiwan University 2004; M.S., California Institute of Technology 2007.
Thesis: Receive Buffer Dynamics and OS Scheduling.
Thesis: Quantum Mechanical Simulation and X-Ray Scattering Applied to Pressure-Induced Invar Anomaly in Magnetic Iron Alloy.
Yue Yang  (Aeronautics)  B.E., Zhejiang University 2004; M.S., China Academy of Science 2007.
Thesis: Individual Particle Motion in Colloids: Microviscosity, Microdiffusivity, and Normal Stresses.

DIVISION OF GEOLOGICAL AND PLANETARY SCIENCES

Benjamin Kimball Harrison  (Geochemistry)  B.A., Carleton College 2003.
Thesis: Hydrocarbon Lakes on Titan and Their Role in the Methane Cycle.
YoungHee Kim  (Geophysics)  A.B., University of California, Berkeley 2002; M.S., Seoul National University 2004; M.S., California Institute of Technology 2008.
Le Kuai  (Planetary Science and Environmental Science and Engineering)  B.S., Nanjing University 2003; M.S., Iowa State University 2006; M.S., California Institute of Technology 2008.


Sonja Spasojevic  *(Geophysics)*  B.S., University of Belgrade 2001; M.S., University of Houston 2003.
Thesis: Dynamics of Long-Term Sea-Level Change and Vertical Motion of Continents.

**DIVISION OF HUMANITIES AND SOCIAL SCIENCES**


Andrea Robbett  *(Social Science)*  B.S., Haverford College 2005; M.S., California Institute of Technology 2008.

**DIVISION OF PHYSICS, MATHEMATICS AND ASTRONOMY**


Thesis: Superconformal Chern-Simons Theories and Their String Theory Duals.

Ersen Bilgin  *(Physics)*  B.A., Williams College 2006; M.S., California Institute of Technology 2011.
Thesis: Simulation of Strongly Correlated Quantum Many-Body Systems.


Kyung Soo Choi  *(Physics)*  B.S., State University of New York, Stony Brook 2006.
Thesis: Coherent Control of Entanglement with Atomic Ensembles.
Thesis: Topics in Gravitation – Numerical Simulations of Event Horizons and Parameter Estimation for LISA.

David Andrew Doll (Physics) B.A., B.S., University of North Carolina-Chapel Hill 2005; M.S., California Institute of Technology 2009.  
Thesis: Measurement of the Rare Transition $b \rightarrow s \gamma$ using the Complete B4B4R Data Set.

Timothy Ryan Dulaney (Physics) B.S. (Mathematics), B.S. (Physics), University of Maryland, College Park 2006.  

Thesis: Transcriptional Regulation by the Numbers.

Heather Mary Gray (Physics) B.S., University of Cape Town 2001; B.Sc., 2002; M.S., 2003; M.S., California Institute of Technology 2007.  
Thesis: The Charged Particle Multiplicity at Centre of Mass Energies from 900 GeV to 7 TeV Measured with the ATLAS Experiment at the Large Hadron Collider.

Mehmet Selim Hanay (Physics) B.S., Sabanci University 2003.  

Alexander I. Himmel (Physics) B.S., Harvey Mudd College 2006.  
Thesis: Antineutrino Oscillations in the Atmospheric Sector.


Thesis: Bridging the Gap: Elusive Explosions in the Local Universe.


Thesis: Measurement of Multi-jet Production Cross Section at a Center-of-Mass Energy of 7 TeV at the Large Hadron Collider with the ATLAS Detector.


Milivoje Lukic (Mathematics) B.Sc. (Astrophysics), University of Belgrade 2006; B.Sc. (Mathematics), 2007; M.S., California Institute of Technology 2010.  


Paul Nelson (Mathematics) A.B., Princeton University 2006.

Pinkesh Kiritbhai Patel (Physics) B.S., Drexel University 2005; M.S., California Institute of Technology 2009.

Thesis: Inclusive Jet Cross Sections in Proton-Proton Collisions at 7.0 TeV Center-of-Mass Energy with the ATLAS Detector at the Large Hadron Collider.


Thesis: A Survey of Results in Modern Precision Cosmology.

Yonathan Schwarzkopf (Physics) B.Sc., Tel Aviv University 2005; M.Sc., Weizmann Institute of Science 2006.

Junho Suh (Physics) B.S., Seoul National University 2001.
Thesis: Coupled Dynamics of a Nanomechanical Resonator and Superconducting Quantum Circuits.


Tiam Hock Tay (Physics) B.S., National University of Singapore 2000.
Nahid Walji (Mathematics)  B.A., Cambridge University 2002; M.Sc., Imperial College London 2005.
Thesis: Supersingular Distribution, Congruence Class Bias, and A Refinement of Strong Multiplicity One.

Chao Zhang (Physics)  B.S., University of Science and Technology of China 2002.
Thesis: Precision Measurement of Neutrino Oscillation Parameters and Investigation of Nuclear Georeactor Hypothesis with KamLAND.

Dapeng Zhang (Mathematics)  B.S., Peking University 2003; M.S., 2006.

Yue Zou (Physics)  B.S., Tsinghua University 2004.
Thesis: Quantum Phases and Phase Transitions in Disordered Low-Dimensional Systems: Thin Film Superconductors, Bilayer Two-Dimensional Electron Systems, and One-Dimensional Optical Lattices.
Prizes and awards are listed only for those students receiving degrees in 2011, and include prizes and awards received by them in previous years.

FREDERIC W. HINRICHS, JR., MEMORIAL AWARD
Awarded to the seniors who, in the opinion of the undergraduate deans, have made the greatest undergraduate contribution to the welfare of the student body and whose qualities of leadership, character, and responsibility have been outstanding.

2011 Timothy James Fornell Black, Andrew John Price

MABEL BECKMAN PRIZE
Awarded to an undergraduate woman upon completion of her junior or senior year in recognition of demonstrated academic and personal excellence, contributions to the Institute community, and outstanding qualities of character and leadership.

2011 Menglu Michelle Jiang, Elizabeth Marie Mak

GEORGE W. HOUSNER AWARD
Formerly the Sigma Xi Award, awarded to a senior selected for an outstanding piece of original scientific research.

2011 Erik Madsen, Kedron Pyle Silsbee

Milton and Francis Clauser Doctoral Prize
Awarded to the Ph.D. candidate whose research is judged to exhibit the greatest degree of originality as evidenced by its potential for opening up new avenues of human thought and endeavor as well as by the ingenuity with which it has been carried out.

Name of recipient to be announced at commencement.

The prizes above are announced at the commencement ceremony.
UPPER CLASS MERIT PRIZE (ROSALIND W. ALCOTT MERIT SCHOLARSHIP, CARNATION SCHOLARSHIP, AND JOHN STAUFFER MERIT SCHOLARSHIP)

Caltech awarded the Upper Class Merit Prize, funded by the Carnation Merit Award Fund, for academic excellence to undergraduates. The prize was based solely on merit (selection was made on the basis of grades, faculty recommendations, and demonstrated research productivity), with no consideration given to need or any other nonacademic criteria.

2008 Alexander Chunhachatchawalkul
          Hudson

2009 Yakov Ilich Berchenko-Kogan    Elizabeth Marie Mak
          Alexander Chunhachatchawalkul    Sarah Epstein Marzen
          Hudson
          Erik Madsen

2010 Kiefer Pio Aguilar            Daniel Walter Kolodrubetz
          Grayson Lee Chadwick           Erik Madsen
          Fei Chen                         Elizabeth Marie Mak
          Suyao Ji                         Karthik Venkataraman Sarma
          Asif R. Khan                     Dongying (Erin) Shen
          Emily S. Kim                    Wesley Yung-Hsu Yu

AXLINE MERIT SCHOLARS

These scholarships, which were renewable contingent on academic performance, were awarded to selected freshmen whose record of personal and academic accomplishment was judged outstanding among incoming freshmen.

2008 Yakov Ilich Berchenko-Kogan    Susan Juel Dittmer
          Timothy James Fornell Black    Sarah Louise Howell
          Fei Chen                         Elizabeth Marie Mak
APOSTOL AWARD FOR EXCELLENCE IN TEACHING IN MATHEMATICS

In 2010, the mathematics option set up the Apostol Teaching Award, named in honor of Tom Apostol, who was a great teacher at Caltech for over 50 years. These three to five awards are given each year to recognize excellence in teaching by graduate and undergraduate teaching assistants.

2011 Paul Nelson

CHARLES D. BABCOCK AWARD

Awarded, by vote of the aeronautics faculty, to a graduate student whose achievements in teaching or other assistance to students have made a significant contribution to the aeronautics department.

2008 Celia Reina Romo

2009 Christopher Kovalchick

2010 Olive Remington Stohlman
ROBERT P. BALLES CALTECH MATHEMATICS SCHOLARS AWARD
Awarded to the mathematics major entering his or her senior year who has demonstrated the most outstanding performance in mathematics courses completed in the student’s first three years at Caltech.

2010  Jason Charles Bland

WILLIAM F. BALLHAUS PRIZE
Awarded to aeronautics students for outstanding doctoral dissertations.

2011  Justin Brown

ERIC TEMPLE BELL UNDERGRADUATE MATHEMATICS RESEARCH PRIZE
Awarded to one or more juniors or seniors for outstanding original research in mathematics.

2011  Jeffrey Thomas Lin

BHANSALI PRIZE IN COMPUTER SCIENCE
Awarded to an undergraduate student for outstanding research in computer science in the current academic year.

2011  Karthik Venkataraman Sarma

AMASA BISHOP SUMMER STUDY ABROAD PRIZE
Awarded to freshmen, sophomores, or juniors to fund summer study abroad in an organized program with the aim of gaining exposure to foreign language and international issues or cultures, including global issues in the sciences and engineering.

2009  Laainam Chaipornkaew
2010  Gloria Eve Tran
RICHARD G. BREWER PRIZE IN PHYSICS
Awarded to the freshman with the most interesting solutions to the Physics 11 “hurdles,” in recognition of demonstrated intellectual promise and creativity at the very beginning of his or her Caltech education.

2008    Grayson Lee Chadwick

ROLF D. BUHLER MEMORIAL AWARD IN AERONAUTICS
Awarded to an aeronautics student for outstanding academic achievement in the master’s program.

2007    Celia Reina Romo
2011    Neal Phillip Bitter

FRITZ B. BURNS PRIZE IN GEOLOGY
Awarded to an undergraduate who has demonstrated both academic excellence and great promise of future contributions in the fields represented by the Division of Geological and Planetary Sciences.

2009    Laainam Chaipornkaew
2011    William Martin Steinhardt

THE W. P. CAREY & CO., INC., PRIZE IN APPLIED MATHEMATICS
Awarded to a student receiving a Doctor of Philosophy degree for an outstanding doctoral dissertation in applied mathematics or pure mathematics.

2011    Stephen Becker, Yaniv Plan, Molei Tao

CENTENNIAL PRIZE FOR THE BEST THESIS IN MECHANICAL AND CIVIL ENGINEERING
Awarded each year to a candidate for the degree of Doctor of Philosophy in applied mechanics, civil engineering, or mechanical engineering whose doctoral thesis is judged to be the most original and significant by a faculty committee appointed annually by the executive officer for mechanical and civil engineering. The prize consists of a citation and a cash award of $1,000 and was established with gifts from alumni following the Mechanical Engineering Centennial Celebration in 2007.

2011    Justin Brown
RICHARD BRUCE CHAPMAN MEMORIAL AWARD
Awarded to a graduate student in hydrodynamics who has distinguished himself or herself in research in the Division of Engineering and Applied Science.
2011 Yue Yang

DONALD S. CLARK MEMORIAL AWARD
Awarded to two juniors in recognition of service to the campus community and academic excellence. Preference is given to students in the Division of Engineering and Applied Science and to those in chemical engineering.
2010 Karthik Venkataraman Sarma, Fei Yang

THE DONALD COLES PRIZE IN AERONAUTICS
Awarded to the graduating Ph.D. student in aeronautics whose thesis displays the best design of an experiment or the best design for a piece of experimental equipment.
2011 Nicholas Sebastian Boechler

DEANS’ CUP AND STUDENT LIFE AND MASTER’S AWARDS
Two awards, selected by the deans, the director of student life, and the master of student houses, presented to undergraduates whose concern for their fellow students has been demonstrated by persistent efforts to improve the quality of undergraduate life and by effective communication with members of the faculty and administration.
2009 Alexander Chunhachatchawalkul Hudson
2010 Karthik Venkataraman Sarma, Dean’s Cup
                Joy Lin, Dean’s Cup
                Daniel Stuart Obenshain, Student Life and Master’s
2011 Lucas Allan Hartsough, Dean’s Cup
                Wesley Yung-Hsu Yu, Dean’s Cup
                Flora Mian Li, Student Life and Master’s
DEMETRIADES-TSAFKA-KOKKALIS PRIZE IN ENTREPRENEURSHIP OR RELATED FIELDS
Awarded annually for the best business plan or proposal, start-up, thesis, publication, discovery, or related efforts by student(s) in entrepreneurship or related fields at the Institute in the preceding 12 months. This prize is made possible by a gift from Anna Kokkalis Demetriades and Sterge T. Demetriades, Eng ’58.

2008 John Matthew Delacruz
2011 Vivian Eleanor Ferry

DEMETRIADES-TSAFKA-KOKKALIS PRIZE IN ENVIRONMENTALLY BENIGN RENEWABLE ENERGY SOURCES OR RELATED FIELDS
Awarded annually to a Ph.D. candidate for the best thesis, publication, discovery, or related efforts in benign renewable energy sources or related fields at the Institute in the preceding 12 months. This prize is made possible by a gift from Anna Kokkalis Demetriades and Sterge T. Demetriades, Eng ’58.

2011 William C. Chueh

DEMETRIADES-TSAFKA-KOKKALIS PRIZE IN NANOTECHNOLOGY OR RELATED FIELDS
Awarded annually to a Ph.D. candidate for the best thesis, publication, or discovery in nanotechnology or related fields at the Institute in the preceding 12 months. This prize is made possible by a gift from Anna Kokkalis Demetriades and Sterge T. Demetriades, Eng ’58.

2011 Shelby Hutchens
CONSTANTIN G. ECONOMOU MEMORIAL PRIZE
Awarded to a chemical engineering graduate student distinguished by outstanding research accomplishments and exemplary attitude while fulfilling candidacy requirements for the Ph.D. degree.

2007 Yvonne Yu-Hsuan Chen
2008 Chung Hang Jonathan Choi

EVERHART DISTINGUISHED GRADUATE STUDENT LECTURER AWARD
Awarded to a graduate student who has demonstrated exemplary presentation ability and graduate research.

2010 Marcos Nahmad Bensusan
2011 Mansi Manoj Kasliwal, Roseanna Nellie Zia

DORIS EVERHART SERVICE AWARD
Awarded annually to an undergraduate who has actively supported and willingly worked for organizations that enrich not only student life, but also the campus and/or community as a whole, and who has, in addition, exhibited care and concern for the welfare of students on a personal basis. The award was established in 1999 by Martin and Sally Ridge in honor of Doris Everhart.

2010 Menglu Michelle Jiang
2011 Qing Yu Weng

LAWRENCE L. AND AUDREY W. FERGUSON PRIZE
Awarded to the graduating Ph.D. candidate in biology who has produced the outstanding doctoral thesis for the past year.

2011 Liming Wang

RICHARD P. FEYNNMAN PRIZE IN THEORETICAL PHYSICS
Awarded to a senior on the basis of excellence in theoretical physics.

2011 Gary Allen Binder
HAREN LEE FISHER MEMORIAL AWARD IN JUNIOR PHYSICS
Awarded to a junior physics major who demonstrates the greatest promise of future contributions in physics.

2010  Sarah Epstein Marzen

HENRY FORD II SCHOLAR AWARD
Awarded either to the engineering student with the best academic record at the end of the third year of undergraduate study, or to the engineering student with the best first-year record in the graduate program.

2010  Luke Wang Guo

JACK E. FROEHLICH MEMORIAL AWARD
Awarded to a junior in the upper five percent of his or her class who shows outstanding promise for a creative professional career.

2010  Erik Madsen, Elizabeth Marie Mak

GRADUATE DEANS’ AWARD FOR OUTSTANDING COMMUNITY SERVICE
Awarded to a Ph.D. candidate who, throughout his or her graduate years at the Institute, has made great contributions to graduate life and whose qualities of leadership and responsibility have been outstanding.

2011  David Andrew Doll, Tara Adele Gomez, Jai Anand Pattur Shanata, Roseanna N. Zia

GEORGE W. AND BERNICE E. GREEN MEMORIAL PRIZE
Awarded to the undergraduate student who, in the opinion of the division chairs, has shown outstanding ability and achievement in creative scholarship.

2009  Grayson Lee Chadwick

2011  Elliott Schneider
LUCY GUERNSEY SERVICE AWARD
Awarded to one or two students who have provided exceptional service to the Caltech Y and/or the community, are involved with service projects, have demonstrated leadership in community and volunteer service efforts, and who exemplify a spirit of service.

2009  Tara Adele Gomez
2010  David Andrew Doll
2011  Casey Jao, Hanna Ken-Yuin Liu

ARIE J. HAAGEN-SMIT MEMORIAL AWARD
Awarded to a sophomore or junior in biology or chemistry who has shown academic promise and who has made recognized contributions to Caltech.

2010  Wesley Yung-Hsu Yu

ALEXANDER P. AND ADELAIDE F. HIXON PRIZE FOR WRITING
Awarded annually in recognition of the best writing in freshman humanities courses.

2008  Erik Madsen

HANS G. HORNUNG PRIZE
Awarded for the best oral Ph.D. defense presentation by a student advised by aerospace faculty. The decision is made by a committee of students who attend all thesis presentations for the year.

2011  Nicholas Sebastian Boechler

BIBI JENTOFT-NILSEN MEMORIAL AWARD
Awarded to an upperclass student who exhibits outstanding qualities of leadership and who actively contributes to the quality of student life at Caltech.

2011  Donatela Elsa Bellone
SCOTT RUSSELL JOHNSON GRADUATE DISSERTATION PRIZE IN MATHEMATICS

Awarded for the best graduate dissertation in mathematics.

2011 Milivoje Lukic, Paul Nelson

SCOTT RUSSELL JOHNSON PRIZE FOR EXCELLENCE IN GRADUATE STUDY IN MATHEMATICS

Awarded to continuing graduate students for excellence in one or more of the following: extraordinary progress in research, excellence in teaching, or excellent performance as a first-year graduate student.

2007 Paul Nelson
2008 Paul Nelson
2010 Serin Hong, Paul Nelson

SCOTT RUSSELL JOHNSON PRIZE FOR EXCELLENCE AS A FIRST-YEAR GRADUATE STUDENT

2010 Serin Hong

SCOTT RUSSELL JOHNSON UNDERGRADUATE MATHEMATICS PRIZE

Awarded for the best graduating mathematics major. Special consideration is given to independent research done as a senior thesis or SURF project.

2011 Yakov Illich Berchenko-Kogan, Jason Charles Bland

KALAM PRIZE FOR AEROSPACE ENGINEERING

Awarded to a student in the aerospace engineering master’s program whose academic performance was exemplary and who shows high potential for future achievements at Caltech. This prize was made possible through the generosity of Dr. Abdul Kalam, the 11th president of India, himself an aerospace engineer.

2011 Subrahmanyam Duvvuri, Daniel Roszhart Zehr
D. S. KOTHARI PRIZE IN PHYSICS
Awarded to a graduating senior in physics who has produced an outstanding research project during the year.
2011  Erik Madsen

MARGIE LAURITSEN LEIGHTON PRIZE
Awarded to one or two undergraduate women who are majoring in physics or astrophysics, and who have demonstrated academic excellence.
2009  Sedona H. Price

HARRY LEITER MEMORIAL MECHANICAL ENGINEERING PRIZE
Awarded to a candidate for the degree of Bachelor of Science in mechanical engineering who has demonstrated extraordinary creativity as judged by a faculty committee appointed each year by the executive officer for mechanical engineering. The prize consists of a citation and a cash award and was made possible by a gift from Dr. Symme Leiter.
2011  Colin Michael Ely

THE LEMELSON-MIT CALTECH STUDENT PRIZE
Awarded through an annual competition to a senior or graduate student who has created or improved a product or process, applied a technology in a new way, redesigned a system, or in other ways demonstrated remarkable inventiveness. The winner receives $30,000.
2009  Ophir Vermesh

LIBRARY FRIENDS’ SENIOR THESIS PRIZE
This prize was established in 2010 to recognize a senior thesis that exemplifies scholarly research, including the effective use of library resources and other bibliographic materials. A $1,200 cash award accompanies the citation. The senior thesis is an extensive, independent written work usually undertaken during a senior thesis course series. The university librarian and the Friends of Caltech Libraries oversee the evaluation and nomination process and make
recommendations to the Undergraduate Academic Standards and Honors Committee for final selection. At the discretion of the Friends of Caltech Libraries, more than one award, or none, may be made in any year.

2011 Hanna Ken-Yuin Liu

MARI PETERSON LIGOCKI (’81) MEMORIAL AWARD
Awarded to a student who has improved the quality of student life at Caltech through his or her personal character.

2011 Saurabh Kumar Pandey

DOROTHY B. AND HARRISON C. LINGLE SCHOLARSHIP
This prize, which was renewable contingent on academic performance, was awarded to an incoming freshman in recognition of interest in a career in science or engineering, outstanding academic record, demonstrated fair-mindedness, and unquestioned integrity.


THE HERBERT NEWBY MCCOY AWARD
Awarded to chemistry doctoral students for outstanding contributions to the science of chemistry.

2011 Peigen Cao John Andrew Enquist
Peter Michael Clark Alexander James Minden Miller
Jillian Lee Dempsey

MARY A. EARL McKinney Prize in Literature
Awarded to undergraduate students for excellence in writing, in two categories: poetry and prose fiction.

2009 Ryan Arthur Denlinger
2010 Casey Carter Glick
2011 Perrin Thalia Sau Pung Considine
ROBERT L. NOLAND LEADERSHIP SCHOLARSHIP
Awarded to undergraduate students who exhibit qualities of outstanding leadership, which are most often expressed as personal actions that have helped other people and that have inspired others to fulfill their capabilities.

2010    Elizabeth Marie Mak, Andrew John Price
2011    Dongkook Dennis Lim, Faith Gregory Manary, Karthik Venkataraman Sarma

RODMAN W. PAUL HISTORY PRIZE
Awarded to a junior or senior who has displayed an unusual interest in and talent for history.

2010    Elizabeth Marie Mak

PRESIDENT’S SCHOLARS
These scholarships, which were renewable contingent on academic performance, were awarded to selected freshmen to promote the breadth and diversity of the Caltech undergraduate student body.

2007    Kevin Alexander Hartman, Aliza Ilana Malz
2008    Kiefer Pio Aguilar, Mariya Levina, Gary Allen Binder, Aliza Ilana Malz, Jeremy Coulter Davis, Maral Mazrooei, Kristina Marie Flavier, Jasmine Soria Sears, Christine Leonore Fuller, Gloria Eve Tran, Kevin Alexander Hartman

2009    Kiefer Pio Aguilar, Mariya Levina, Gary Allen Binder, Aliza Ilana Malz, Jeremy Coulter Davis, Maral Mazrooei, Kristina Marie Flavier, Jasmine Soria Sears, Christine Leonore Fuller, Gloria Eve Tran
2010  Kiefer Pio Aguilar, Mariya Levina
       Gary Allen Binder, Aliza Ilana Malz
       Jeremy Coulter Davis, Maral Mazrooei
       Kristina Marie Flavier, Jasmine Soria Sears
       Christine Leonore Fuller, Gloria Eve Tran

2011  Aliza Ilana Malz

HOWARD REYNOLDS MEMORIAL PRIZE IN GEOLOGY
Awarded to a sophomore or junior who demonstrates the potential to excel in the
field of geology and who actively contributes to the quality of student life at Caltech.

2009  Casey Carter Glick

HERBERT J. RYSER MEMORIAL SCHOLARSHIPS
Awarded to undergraduate students for academic excellence, preferably in
mathematics.

2010  Jason Charles Bland, Yakov Ilich Berchenko-Kogan

SAN PIETRO TRAVEL PRIZE
Awarded to sophomores, juniors, or seniors to fund adventurous and challenging
summer travel experience that expands the recipients’ cultural horizons and
knowledge of the world.

2009  Dongkook Dennis Lim

2010  Donatela Elsa Bellone, Colin Michael Ely, Stephanie Marie Wuerth

2011  Ryan Lane Newton, Tyler J. Hannasch

ELEANOR SEARLE PRIZE IN LAW, POLITICS, AND INSTITUTIONS
The Eleanor Searle Prize was established in 1999 by friends and colleagues to
honor Eleanor Searle. The prize is awarded annually to an undergraduate or
graduate student whose work in history or the social sciences exemplifies Eleanor
Searle’s interests in the use of power, government, and law.

2009  Erik Madsen
ERNEST E. SECHLER MEMORIAL AWARD IN AERONAUTICS
Awarded to an aeronautics student who has made the most significant contribution to the teaching and research efforts of GALCIT (Graduate Aeronautical Laboratories of the California Institute of Technology). Preference is given to students working in structural mechanics.

2009  Nicholas Sebastian Boechler

RENUKA D. SHARMA AWARD
Awarded to a sophomore chemistry major for outstanding performance during his or her freshman year.

2009  Wesley Yung-Hsu Yu

DON SHEPARD AWARD
Awarded to students who would find it difficult, without additional financial help, to engage in extracurricular and cultural activities. The recipients are selected on the basis of their capacity to take advantage of and to profit from these activities rather than on the basis of their scholastic standing.

2007  Rebecca Ann Barter
2008  Hanna Ken-Yuin Liu
2009  Vanessa Marie Burns
2010  Donatela Elsa Bellone, Saurabh Kumar Pandey, Arjun Ravikumar

HALLETT SMITH PRIZE
Established in 1997 to commemorate Professor Smith’s long career as one of the 20th century’s most distinguished Renaissance scholars. The cash prize is given annually by the literature faculty to the undergraduate student who writes the finest essay on Shakespeare.

2011  Stephanie Marie Wuerth
JOHN STAGER STEMPLE MEMORIAL PRIZE IN PHYSICS
Awarded to a graduate student in physics for outstanding progress in research as demonstrated by an excellent performance on the oral Ph.D. candidacy examination.

2007 Zachary Louis Marshall

PAUL STUDENSKI MEMORIAL FUND PRIZE
A travel grant awarded to a Caltech undergraduate who would benefit from a period away from the academic community in order to obtain a better understanding of self and his or her plans for the future.

2011 Laura Jane Decker

ALAN R. SWEEZY PRIZE IN ECONOMICS
Awarded to a senior who has shown unusual interest in and talent for economics.

2010 Erik Madsen

FRANK TERUGGI MEMORIAL AWARD
Awarded to an undergraduate student who honors the spirit of Frank Teruggi’s life through participation “in the areas of Latin American studies, radical politics, creative radio programming, and other activities aimed at improving the living conditions of the less fortunate.”

2010 Donatela Elsa Bellone

CHARLES AND ELLEN WILTS PRIZE
Awarded to a graduate student for outstanding independent research in electrical engineering leading to a Ph.D.

2011 Edward Arthur Keehr
For the Splendor of Creation

For the splendor of creation that draws us to inquire,
For the mysteries of knowledge to which our hearts aspire,
For the deep and subtle beauties which delight the eye and ear,
For the discipline of logic, the struggle to be clear,
For the unexplained remainder, the puzzling and the odd:
For the joy and pain of learning, we give you thanks, O God.

For the scholars past and present whose bounty we digest,
For the teachers who inspire us to summon forth our best,
For our rivals and companions, sometimes foolish, sometimes wise,
For the human web upholding this noble enterprise,
For the common life that binds us through days that soar or plod:
For this place and for these people, we give you thanks, O God.

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Hail CIT
(Caltech alma mater)

By Manton Barnes, B.S. ’21

In Southern California with grace and splendor bound,
Where the lofty mountain peaks look out to lands beyond,
Proudly stands our Alma Mater, glorious to see;
We raise our voices proudly, hailing, hailing thee.
Echoes ringing while we’re singing over land and sea,
The halls of fame resound thy name, noble CIT.