CALIFORNIA INSTITUTE
of TECHNOLOGY

One Hundred Fourteenth Annual Commencement
June 13, 2008
Cover: Caltech’s commencement ceremony,
by Joseph Stoddard.

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CALIFORNIA INSTITUTE
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One Hundred Fourteenth
Annual Commencement

Friday Morning at Ten O’Clock
June Thirteenth, Two Thousand Eight
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, 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 and Art Gallery, helped design the Civic Center in downtown Pasadena, and—perhaps his single greatest achievement—set the
course for the development of Throop into the California Institute of Technology, a school he envisioned as a scientific institution of the highest rank.

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 not only did the faculty have great impact on the world. Caltech alumni such as 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 longlasting.

Caltech today has a 124-acre campus and operates eight off-campus astronomical, seismological, and marine biological facilities, and administers
NASA’s Jet Propulsion Laboratory as well. At present, the Institute has an enrollment of some 2,100 students, more than half of whom are in graduate studies; about 300 professorial faculty members, including five Nobel laureates and three Crafoord laureates; and about 60 research faculty members. Today Caltech will award 191 students the B.S. degree; 127 students the M.S. degree; one scholar the degree of Engineer; and 185 doctoral candidates the Ph.D. degree, for a total of 504 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 mediaeval 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 mediaeval 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*
ABOUT THE SPEAKER

ROBERT KRULWICH is a radio and television journalist who explains complex topics in a style that is clear, compelling, and entertaining. He regularly reports on science, technology, and economics on ABC’s World News and National Public Radio’s Morning Edition and All Things Considered. He also cohosts a national radio series that explores new developments in science, Radio Lab, which is intended for people who are intellectually curious but not regular listeners of science shows. “I like talking about ideas,” he says, “and I especially like creating images that will keep those ideas in people’s heads.”

To make sophisticated topics accessible, Krulwich combines images with casual conversation, interviews, storytelling, metaphors, and other creative methods. He pioneered the use of new animation techniques in reports on cellular biology and subprime lending, and in one of his most creative ventures, he created his own Italian opera, Ratto Interesso, to explain how the Federal Reserve regulates interest rates. He has explored a range of challenging subjects from the intricacies of Enron’s accounting irregularities to the chemistry of global warming and the mysteries of RNA.

Krulwich has been called “the most inventive network reporter in television” by TV Guide, “the man who makes the dismal science swing,” by the Washington Journalism Review, and “the man who simplifies without being simple,” by New York magazine. According to Krulwich, “The most exciting news being
made at this moment is what human beings have learned about themselves, the planet they’re on, and the universe they’re part of.”

After joining NPR in 1978 and serving as economics reporter until 1985, Krulwich joined CBS News, and in 1994, he became an ABC News correspondent. With Ted Koppel, he cohosted the eight-part primetime series *Brave New World*, which probed the “eight biggest questions facing humankind,” and with Peter Jennings, he produced an animated history of Bosnia for a children’s special. With Barbara Walters, he explored possible cures for cancer.

Krulwich is a regular correspondent on the PBS investigative series *Frontline*, for which he received an Alfred I. duPont–Columbia University Award for his coverage of campaign finance in the 1992 presidential campaign. He also received a national Emmy Award for his investigation of privacy on the Internet, “High Stakes in Cyberspace,” and a George Polk Award for a piece on the savings-and-loan scandal. His ABC special on Barbie, a cultural history of the world-famous doll, also won a national Emmy. He received the Eleanor Nealon Extraordinary Communicator’s Award from the National Cancer Institute in 2000, and for a NOVA special on the human genome, he was awarded the American Association for the Advancement of Science’s 2001 Science Journalism Award.

Krulwich received a bachelor’s degree in United States history from Oberlin College in 1969 and a Juris Doctor from Columbia Law School in 1974. He lives in New York City with his wife, Tamar Lewin, a national reporter for the *New York Times*. They have two children, Jesse and Nora Ann.
A C A D E M I C  P R O C E S S I O N

Chief Marshal
Konstantinos P. Giapis, Ph.D.

Marshals
Scott E. Fraser, Ph.D.
Barbara C. Green, Ph.D.
John F. Hall, Ph.D.
Melany L. Hunt, Ph.D.
Richard M. Murray, Ph.D.
Tapio Schneider, Ph.D.

Faculty Officers
Judith L. Campbell, Ph. D.
Fiona Cowie, Ph.D.
Richard M. Murray, Ph.D.

M A R C H I N G  O R D E R

Candidates for the Degree of Bachelor of Science
Candidates for the Degree of Master of Science
Candidate for the Degree of Engineer
Candidates for the Degree of Doctor of Philosophy
Faculty Officers
The Faculty
The Chairs of the Divisions
The Deans
The Provost
The Trustees
The Commencement Speaker
The President
The Chairman 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
Chairman of the Board of Trustees
California Institute of Technology

Commencement Speaker
“Tell Me a Story”
Robert Krulwich, J.D.
Journalist

Choral Selection
“There’s Just One”
music by George Frideric Handel,
lyrics by K. Giapis and D. Caldwell
The Caltech Glee Clubs
L. Destree LaVertu, M.M., Conductor

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
John F. Hall, Ph.D.
Dean of Students

For the Degree of Master of Science
and the Degree of Engineer
Michael R. Hoffmann, Ph.D.
Dean of Graduate Studies

For the Degree of Doctor of Philosophy
Biology
Elliot M. Meyerowitz, Ph.D.
Division Chair
Chemistry and Chemical Engineering  
David A. Tirrell, Ph.D.  
*Division Chair*

Engineering and Applied Science  
David B. Rutledge, 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  
Thomas A. Tombrello, Ph.D.  
*Division Chair*

**ANNOUNCEMENT OF AWARDS AND CONCLUDING REMARKS**

President Chameau

**ALMA MATER**  
“Hail CIT”  
by Manton Barnes, BS ’21 EE  
(The audience may join in; lyrics are on page 56.)

**RECESSIO NAL**  
The Caltech Glee Clubs,  
The Caltech Convocations Brass  
and Percussion Ensemble,  
and Organ

Organ Postlude  
Dr. Deutsch

*Video footage of commencement may be viewed on the Caltech website at http://www.caltech.edu/commencement. Broadcast is scheduled to begin after 3 p.m.*
CANDIDATES FOR DEGREES

Bachelor of Science

Carl Justin Allendorph  Godfrey, Illinois  Electrical Engineering
Olivia Jean Alley  Willits, California  Chemistry
Jessica Anne Arnold† New City, New York  Astrophysics
Jonathan Mark Arnold*  Arlington, Virginia  Physics
Jessica Nell Austin  Fort Worth, Texas  Mechanical Engineering and Control and Dynamical Systems (Minor)
Ning Biao*  Boys, Maryland  Physics
David Randall Barmore*  Arlington Heights, Illinois  Independent Studies Program
Natalie Alexandra Becerra  Corona, California  Mechanical Engineering
Brandt Arthur Belson*  Media, Pennsylvania  Mechanical Engineering and Business Economics and Management
Juan Luis Benitez† Fallbrook, California  Mechanical Engineering
Ryan Keith Bogner  Long Beach, California  Physics
Elette Chantae Boyle*  Yamhill, Oregon  Mathematics
Elah Bozorg-Grayeli*  Tempe, Arizona  Mechanical Engineering and Aerospace Engineering (Minor)
Amanda Nicole Bozovich*  La Habra Heights, California  Applied Physics
Katherine Breeden*  Piedmont, California  Computer Science and History (Minor)
Stanley P. Burgos*  Huntington Park, California  Applied Physics
Richard Hajime Carson  Pasadena, California  Chemistry
Derek Garvey Chan*  Tucson, Arizona  Engineering and Applied Science (Aeronautics) and Business Economics and Management
Matthew Hans Chan*  San Carlos, California  Physics
Nathan Chan*  Austin, Texas  Engineering and Applied Science (Environmental Science and Engineering) and English
Angela Weijane Chang*  Palos Verdes, California  Biology
Shelley Hsiao-I Chang  Richardson, Texas  Chemistry
Vamsidhar Chavakula*  Agoura Hills, California  Biology and Electrical Engineering
Boris Anthony Chen*  Foster City, California  Applied and Computational Mathematics and Business Economics and Management
David Chen*  Saratoga, California  Chemical Engineering (Biomolecular)
Si Stephen Cheng† Chico, California  Mechanical Engineering
Michael Chiang*  Upland, California  Physics

* 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 when all graduation requirements are met.
Bachelor of Science continued

Waley Chun* Arcadia, California Applied and Computational Mathematics and Economics
William Randolph Clark* Boise, Idaho Computer Science
Derek Jay Conrod Alamogordo, New Mexico Computer Science
Kate Melissa Craig* Sauk Centre, Minnesota Applied Physics and History
Ambrus Csaszar Pasadena, California Mechanical Engineering
Timothy Gordon Curran* Phoenix, Arizona Mechanical Engineering and Computer Science
Molly L. Davis Magalia, California Biology
René Michele Davis Corona, California Biology
Gary Alfred Demos La Cañada, California Engineering and Applied Science
David DiCato Huntington Beach, California Computer Science
Kevin Garland Dick* Woodinville, Washington Computer Science and Mathematics
Nathan Donnellan Lago Vista, Texas Mechanical Engineering
Joseph Clarence Donovan* Wilmette, Illinois Biology and Business Economics and Management
David Carroll Dow Lodi, California Geology
Marlena Liesel Fecho Stoneham, Massachusetts Electrical Engineering
Joshua Jarrett Feingold Winchester, Virginia Mechanical Engineering and History (Minor)
Leighland John Feinman Larchmont, New York Biology and History
Csilla Nani Felsen* Encinitas, California Biology and English
Ludi Feng Dalian, People’s Republic of China Biology
Sarah Anthony Ferguson Baltimore, Maryland Engineering and Applied Science (Computation and Neural Systems)
Kenneth Kiyoshi Fisher La Cañada, California Mechanical Engineering
Erin Paul Flanagin1 Sammamish, Washington Biology
Michael James Forte* Bend, Oregon Physics
Edward Paxon Frady* Atlanta, Georgia Engineering and Applied Science (Computation and Neural Systems) and Business Economics and Management
Mark D. Freeman-Aloiau Huntington Beach, California Engineering and Applied Science
Gina Anne Gage Grand Junction, Colorado Geobiology and English (Minor)
Nicholas Benjamin Galitzki Gorst, Washington Astrophysics
Ilya Gekhtman* Greer, Indiana Mathematics
Elizabeth Gilliam La Cañada, California Biology
Todd Robert Gingrich* Columbia, Missouri Chemistry
Gaurav Giri* Kathmandu, Nepal Chemical Engineering (Biomolecular)
Manuel Godoy* Caracas, Venezuela Electrical Engineering
Brent Justin Goldman1 San Marino, California Computer Science and Business Economics and Management
Bachelor of Science continued

Joshua David Goldstein  Dallas, Texas  Computer Science
Christopher Grant Gonzales  Clemmons, North Carolina  Electrical Engineering
Michael Sean Grinolds*  Fort Collins, Colorado  Physics
Robert A. Grogan  Port Washington, New York  Mechanical Engineering
Marc Alexander Grossman  Chico, California  Mechanical Engineering
Zhiyun Guan*  Santa Barbara, California  Biology
Tatiana Emilova Gueorguieva  Diamond Bar, California  Electrical Engineering
Maria Christina Gutowski  Omaha, Nebraska  Computer Science
David Duncanson Gutschick  Los Alamos, New Mexico  Mechanical Engineering and Aerospace Engineering (Minor)
Peter Haderlein  North Hollywood, California  Mechanical Engineering and Philosophy (Minor)
Yang Hai*  Fairfax, Virginia  Electrical Engineering and Business Economics and Management
Elena Hartoonian  Sunland, California  Applied Physics
Alexei Harvard†  Great Neck, New York  Mathematics
Jennifer Ann Hawley  Saint Joseph, Michigan  Biology
Drew Frank Heltsley  Tullahoma, Tennessee  Mechanical Engineering
Patrick Kenichi Herring*  Idaho Falls, Idaho  Physics
Stephen Thomas Heumann*  Vernon Hills, Illinois  Computer Science
Silas James Hilliard†  Spokane, Washington  Engineering and Applied Science (Aeronautics)
George Herbert Hines*  Kalamazoo, Michigan  Engineering and Applied Science (Aeronautics) and Control and Dynamical Systems (Minor)
Bryan Henry Hires  Columbus, Indiana  Engineering and Applied Science (Aeronautics)
Aaron Scott Hoffer  Northridge, California  Astrophysics and Business Economics and Management
Steven Yoshiaki Horikoshi  Alameda, California  Applied Physics and Business Economics and Management
Edward Hsiao*  Lanoka Harbor, New Jersey  Electrical Engineering
Scott Sigao Hsieh*  Anaheim, California  Applied Physics and Business Economics and Management
Harold Wenjing Hsu*  Cupertino, California  Biology and English
Tsung-Pai James Huang*  Arcadia, California  Biology
Peter Shek Ho Hung*  Arcadia, California  Physics
Rob Hunter†  Cooper City, Florida  Electrical Engineering
Michael Inadomi*  Rolling Hills Estates, California  Applied Physics
Cedric Jeanty  Fairview, Tennessee  Mechanical Engineering
Deborah Jiang  Rancho Palos Verdes, California  Biology and History (Minor)
Bachelor of Science continued

Michelle Jiang† Rancho Palos Verdes, California Computer Science and Business Economics and Management
Richard Hayden Jones* Orono, Minnesota Biology
Brian D. Kearns* Cave Creek, Arizona Computer Science and Business Economics and Management
Meghan Catherine Kelleher Jacksonville, Florida Applied and Computational Mathematics and Business Economics and Management
Jason Kephart* Billings, Montana Mechanical Engineering and Business Economics and Management
Henna Kermani* Beverly Hills, California Computer Science
Matthew Dean Kiesz Lodi, California Chemistry
Kun Woo Kim* Seoul, South Korea Physics
Lindsay Marie King Bedford, New Hampshire Biology
Christopher Robert Klein* Portland, Oregon Astrophysics
Chi Wan Ko* Alhambra, California Mechanical Engineering and Business Economics and Management
Huaising Cindy Ko Ramona, California Mechanical Engineering
John Albert Kochalka Tampa, Florida Engineering and Applied Science (Computation and Neural Systems)
Matthew James Krogstad Maple Grove, Minnesota Physics
Russell-John Krom* Rochester, Minnesota Chemistry
Ashok Litwin Kumar* Oakton, Virginia Physics and Philosophy (Minor)
Simon F. Kung* Potomac, Maryland Chemistry and Business Economics and Management
Timothy Chung Kwa Monterey Park, California Mechanical Engineering
Sy Tanapun Labthavikul New York City, New York Engineering and Applied Science (Environmental Science and Engineering)
Nathanael Lau South Pasadena, California Chemistry and History
Justin Scott Lazear Phoenix, Arizona Physics
Andrew Jer Yin Lee* Overland Park, Kansas Physics
Helen Lee* Los Angeles, California Chemical Engineering (Biomolecular) and Business Economics and Management
Samantha Roslyn Levine Mahwah, New Jersey Chemistry
Matthew Duk-Ying Lew* San Antonio, Texas Electrical Engineering
Li Song Li† Minneapolis, Minnesota Physics and Economics
Sean Li* Round Rock, Texas Mathematics
Shawn Michael Ligocki* Pinole, California Mathematics
Laura Estelle Lindzey* Austin, Texas Physics
Bachelor of Science continued

Yun-hsueh Rita Liu* Taipei, Taiwan (ROC) Electrical Engineering and Control and Dynamical Systems (Minor)
Zachary James Lizer* Winchester, Virginia Engineering and Applied Science (Aeronautics)
Xuan Luo Albany, California Computer Science
Lisa Lyons Silt, Colorado Computer Science
Thomas Joseph Mainiero* Coplay, Pennsylvania Physics
Jonathan Matthew Malmaud* Boca Raton, Florida Computer Science
Jonathan Andrew Marina* Arcadia, California Applied Physics
Raquel Angelina Martinez South Pasadena, California Astrophysics
Sean Walter Mattingly† Houston, Texas Physics and Business Economics and Management
Keegan Leinbach McAllister* Johnston, Iowa Computer Science
Parvathy Rama Menon* Portland, Oregon Engineering and Applied Science
Brigita Emiko Miyamoto* San Francisco, California Chemistry
Garrett J. Mizuo Torrance, California Applied and Computational Mathematics
Craig Samuel Montuori Cranford, New Jersey Engineering and Applied Science (Aeronautics)
Christopher Erick Moody Sumter, South Carolina Physics
Youssef Moussaoui*Casablanca, Morocco Computer Science and Economics
Vivek Narshimhan* West Lafayette, Indiana Chemical Engineering (Materials)
Kenneth Oslund* Castro Valley, California Engineering and Applied Science (Computation and Neural Systems)
Elliott Pallett Houston, Texas Mechanical Engineering and Aerospace Engineering (Minor)
Erica Roxanne Pantel Boca Raton, Florida Mechanical Engineering
Hyungmin Park* Cresskill, New Jersey Physics
Christine Ford Parry Malvern, Pennsylvania Applied and Computational Mathematics
Sara Elizabeth Peck Ocean Springs, Mississippi Geology
Edward Joseph Perepelitsky* San Jose, California Physics
Philipp Naum Perepelitsky* San Jose, California Mathematics
Krastina Valentinova Petrova* Denver, Colorado Chemistry
Drew Harmon Pollock Anchorage, Alaska Mechanical Engineering
Victoria Hunzu Pon* Littleton, Colorado Biology
Daniel Yuenheen Poon Ann Arbor, Michigan Biology
Lauren Ashley Porter Berlin, Connecticut Physics
Aditya Rajagopal* Irvine, California Electrical Engineering
Thomas Raney Mount Pleasant, South Carolina Computer Science
Tamara Gene Reyda San Jose, California Electrical Engineering
Mario Roa Los Angeles, California Engineering and Applied Science (Aeronautics)
David Zeb Rocklin* Iowa City, Iowa Physics and Economics
Bachelor of Science continued

David Romero  Miami, Florida  Physics
David Matthew Rosen*  Torrance, California  Mathematics and Control and Dynamical Systems (Minor)
Prashant Saraswat*  Northridge, California  Physics
Christopher James Schantz  Missoula, Montana  Mechanical Engineering and Control and Dynamical Systems (Minor)
Cale Andrew Scholl  Buffalo, New York  Computer Science
Jonathan Wyatt Seitel  Tucson, Arizona  Economics
Weilin Shao  Lancaster, Pennsylvania  Applied and Computational Mathematics
Tatyana A. Shatova*  Highland Park, New Jersey  Chemical Engineering (Biomolecular)
Jing Shen*  Maitland, Florida  Mechanical Engineering and Business Economics and Management
John Shen*  Gaithersburg, Maryland  Physics
Angela R. Shih*  Yorba Linda, California  Chemistry
Shafigh Shirinfar†  Los Angeles, California  Electrical Engineering
Alexander Rigel Siegel*  La Cañada, California  Biology and Chemistry
Akshay Singal  Blacksburg, Virginia  Engineering and Applied Science (Materials Science) and Business Economics and Management
Sukhmani Kaur Singh  Bakersfield, California  Chemistry
Damien Zadour Soghoian  New York City, New York  Biology
Alexander Anthony Sonn  Fayetteville, Arkansas  Physics
Michael Henry Spece Ibáñez*  Tucson, Arizona  Applied and Computational Mathematics and Business Economics and Management
Torrey Devon Spink  Chadron, Nebraska  Mechanical Engineering
Sarah Elizabeth Stidham  Tulsa, Oklahoma  Chemistry
Sarah Ann Stokes*  Provo, Utah  Physics
Adrianne Rose Stroup  Sandy Springs, Georgia  Engineering and Applied Science (Aeronautics)
Pakpoom Subsoontorn*  Phitsanulok, Thailand  Biology and Computer Science
Shawn Dean Surdyk  Rochester, New York  Computer Science and Business Economics and Management
Valerie J. Syverson  Fresno, California  Geology
Natalie Jane Szweda  San Diego, California  Chemistry
Andrew Ching-Hsing Tan  Houston, Texas  Computer Science
Liang Zheng Tan*  Singapore  Physics
Sonia M. Tikoo*  Cape Girardeau, Missouri  Geology and History (Minor)
Daniel Tofan*  Brașov, Romania  Chemistry
Thomas Claudio Guillermo Tsai†  Torrance, California  Biology
Christine L. Tung*  Dallas, Texas  Biology
Bachelor of Science continued

Makoto Ueno Sherman Oaks, California Mechanical Engineering
Michael Lee Underhill Richmond, Texas Mechanical Engineering and Business Economics and Management
Sarah Elizabeth Wadsworth Prescott, Arizona Biology
Mary Elizabeth Wahl* Davenport, Iowa Biology
Guan Wang Foster City, California Applied Physics and Business Economics and Management
Karen Lee Wang* San Jose, California Geochemistry
Qian Wang* Vancouver, Canada Computer Science
Yao-Tseng Wang* Kaohsiung, Taiwan (ROC) Applied Physics and Business Economics and Management
Yi Wang* Chengdu, People’s Republic of China Electrical Engineering
Kevin Watts* Madison, Wisconsin Mechanical Engineering and Business Economics and Management and Aerospace Engineering (Minor)
Eleanor Marie Waxman* Manchester, Connecticut Chemistry
Erin Mishelle White Los Altos, California Chemistry
Michael Robert White* Rockford, Illinois Mathematics
June Ki Wicks Pittsburgh, Pennsylvania Geochemistry
Matthew Kenneth Wierman Lake Mary, Florida Mechanical Engineering and Aerospace Engineering (Minor)
Michael Janusz Woods Torrance, California Physics
Wei Eileen Xie San Diego, California Biology
Yingding (Bryan) Xu* Shanghai, People’s Republic of China Biology
Hanwen Yan Westport, Connecticut Biology and Business Economics and Management
Jed Chang-Chun Yang* Boston, Massachusetts Mathematics
Lingfeng Yang* Riverside, California Mathematics and Computer Science
Jessica Mary Yano* Placentia, California Biology
Jennifer Yim Toronto, Canada Electrical Engineering and Business Economics and Management
Shawn Yu* Arcadia, California Chemical Engineering (Biomolecular)
Xi (Cecilia) Yu’ The Woodlands, Texas Engineering and Applied Science (Environmental Science and Engineering) and Business Economics and Management
Joshua Norbert Zahl* Ottawa, Canada Mathematics
Sami Zerrade Boise, Idaho Computer Science
Yan Zhang* Macungie, Pennsylvania Mathematics
Zhonglin Johnny Zhang* Changzhou, People’s Republic of China Engineering and Applied Science (Aeronautics) and Control and Dynamical Systems (Minor)
Ziqing (Winston) Zhao* Hangzhou, People’s Republic of China Chemistry and Biology
Brian Boran Zhou* Ellicott City, Maryland Physics
Yaning Zhu* Palo Alto, California Applied and Computational Mathematics
Pablo Abad-Manterola (Mechanical Engineering) B.S., Stanford University 2006.
Zeeshan Ahmed (Physics) B.S., University of Southern California 2005.
Laura Alisic (Geophysics) Propedeuse, Universiteit Utrecht 2002; Doctoraal, 2006.
Adrianus Indrat Aria (Aeronautics) B.S., Bandung Institute of Technology 2006.
Dustin Hughes Beckett (Social Science) B.A., Claremont McKenna College 2004.
Nicholas Sebastian Boechler (Aerospace Engineering) B.S., Georgia Institute of Technology 2007.
Jason David Bradbury (Electrical Engineering) B.S., University of New Mexico 2006.
Evan Cornell Brown (Materials Science) B.S., University of California, Irvine 2006.
Justin Lee Brown (Mechanical Engineering) B.S., University of New Mexico 2007.
David Isaac Buchfuhrer (Computer Science) B.S., Harvey Mudd College 2006.
George Humberto Cadena III (Electrical Engineering) B.S., Georgia Institute of Technology 2004.
Christopher SungWook Chang (Electrical Engineering) B.S., Seoul National University 2006.
Steven Michael Chemtob (Geochemistry) B.A., Washington University in St. Louis 2006.
Jay Zhuo Chen (Electrical Engineering) B.S., University of California, Berkeley 2006.
Ting Chen (Geophysics) B.S., University of Science and Technology of China 2005.
Jie Cheng (Environmental Science and Engineering) B.S., Tsinghua University 2004.
Mohsen Chitsaz (Civil Engineering) B.S. (Civil Engineering), B.S. (Computer Software Engineering), Sharif University of Technology 2007.
In Ki Choi (Aerospace Engineering) B.S., Seoul National University 2005.
Vedran Coralic (Mechanical Engineering) B.S., University of Illinois at Urbana-Champaign 2007.

Davis Solomon Darvish (Applied Physics) B.S., University of California, Berkeley 2006.


Matthew Alan Ferry (Physics) A.B., University of California, Berkeley 2006.


Crystal Lynn Gammon (Geobiology) A.B., Washington University in St. Louis 2005.


Shuo Han (Electrical Engineering) B.E., Tsinghua University 2003; M.E., 2006.


Scott Patrick Hersey (Environmental Science and Engineering) B.A., B.S., Rice University 2006.

Amy Elizabeth Hofmann (Geochemistry) B.A., Franklin and Marshall College 2004.

Cameron Richard Hughes (Physics) B.S., University of California, Santa Barbara 2002.

Jason Yoshimi Imada (Electrical Engineering) B.S., Harvey Mudd College 2002.

Ian Zachary Jacobi (Aeronautics) S.B., Massachusetts Institute of Technology 2006.

Timothy Forest Jones (Electrical Engineering) B.S., California Institute of Technology 2003.

Annelen Kahl (Materials Science) Diplom, University of Göttingen 2006.

Gokcan Karakus (Civil Engineering) B.S., Bogazici University 2007.

YoungHee Kim (Geophysics) A.B., University of California, Berkeley 2002; M.S., Seoul National University 2004.

Russell Scott Komor (Chemical Engineering) B.S., University of California, Berkeley 2006.

Craig Peter Kowal (Chemical Engineering) B.S.E., Princeton University 2005.

Ian Michael Krajbich (Social Science) B.S., California Institute of Technology 2005.

Le Kuan (Planetary Science) B.S., Nanjing University 2003; M.S., Iowa State University of Science and Technology 2006.


Cole Daniel Lepine (Control and Dynamical Systems) B.Sc., University of Toronto 2006.

Inés Levin Fiorelli (Social Science) Licenciada en Economia, Universidad Ort Uruguay 2004.

Chao Li (Physics) B.S., University of Science and Technology of China 2004.
Master of Science continued

Joe Chih Yao Liang (Chemical Engineering) B.S., University of California, Berkeley 2006.
Hsi-Chun Liu (Electrical Engineering) B.S., National Taiwan University 2004.
Qing Liu (Electrical Engineering) B.S., California Institute of Technology 2006.
Yizhou Liu (Electrical Engineering) B.S., Tsinghua University 2006.
Bo Lu (Electrical Engineering) B.S., Peking University 2007.
Joannah Marie Metz (Planetary Science) B.S. (Geophysics), B.S. (Physics), University of Illinois at Urbana-Champaign 2004; M.Phil., University of Cambridge 2006.
Christopher Paul Michael (Applied Physics) B.S. (Materials Science), B.S. (Physics), University of Illinois at Urbana-Champaign 2003; M.Phil., University of Cambridge 2006.
Sarina Mohanty (Biochemistry and Molecular Biophysics) B.A., University of Virginia 2001.
Francisco de Paula Montero Chacón (Aerospace Engineering) Mechanical Engineer, University of Seville 2007.
Mohamed Mostagir (Social Science) B.Sc., Ain Shams University 1999; M.Sc., University of Delaware 2002; S.M., Massachusetts Institute of Technology 2005.
David Andrew Nichols (Physics) B.A., Claremont McKenna College 2006.
David Alexander Noblet (Computer Science) B.S., University of New Hampshire 2005.
Tae-Sik Oh (Materials Science) B.S., Seoul National University 2004; M.S., 2006.
Francisco Herman Ortega Culaciati (Geophysics) B.Sc., Universidad de Chile 2005.
Laura Maria Perez Muñoz (Astrophysics) B.S., Universidad de Chile 2005; M.S., 2006.
Daniel Michael Pragel (Mathematics) B.S., University of Albany 2003.
Marjan Praljak (Social Science) B.A., University of Zagreb 2002; M.S., 2006.
Imogen Mary Pryce (Chemical Engineering) B.S., The Ohio State University 2006.
Sanja Pudar (Chemistry) B.S., Iowa State University 2004.
Morgan Charles Putnam (Chemical Engineering) B.S., Cornell University 2005.
Elijah Langdon Quetin (Astrophysics) B.S., University of California, Santa Barbara 2005.
James John Raftery (Electrical Engineering) B.S.E., Princeton University 2006.
Sky Rashby (Geobiology) B.S., University of California, Berkeley 2002.
Andrea Robbett (Social Science) B.S., Haverford College 2005.
Andrey Valeryevich Rodionov (Physics) Diploma, M.V. Lomonosov Moscow State University 2004.
Christos Theodoros Santis (Electrical Engineering) Diploma, National Technical University of Athens 2005.
Liza Hadiwinata Santos (Electrical Engineering) B.S., Purdue University 2007.
Penvipha Satsaranukkit (Electrical Engineering) B.E., Kasetsart University 2001; M.E., King Mongkut’s University of Technology 2004.
Maia Kimberly Schweizer (Geobiology) A.B., Princeton University 2004.
Brinton Anna Seashore-Ludlow (Chemistry) B.A., Macalester College 2005.
Michelle Marie Selvans (Geophysics) B.A., University of Colorado at Boulder 2004.
Ashish Sharma (Electrical Engineering) B.Tech., Indrapratha University 2005.
Matthew Alan Stevenson (Astrophysics) B.Sc., University of Victoria 2006.
Borching Su (Electrical Engineering) B.S., National Taiwan University 1999; M.S., 2001.
Andrej Svorencik (Social Science) Engineer, University of Economics 2005; M.S., Comenius University 2006.
Hongjin Tan (Materials Science) B.S., Nanjing University 2006.
Xiangyan Tian (Geophysics) B.S., University of Science and Technology of China 1999; M.S., 2005.
Frank Truong (Chemical Engineering) B.S., University of Houston 2006.
Svitlana Vytyrenko (Electrical Engineering) B.S., National Taras Shevchenko University of Kyiv 2003; M.S., University of Arkansas 2005.
Master of Science continued

Christine Eve Winiarz (Mechanical Engineering) S.B., Massachusetts Institute of Technology 2007.
Weiwei Yang (Computer Science) B.S., California Institute of Technology 2004.
Xiao Yan Yuan (Electrical Engineering) B.S., Shenyang Institute of Aeronautical Engineering 2002.
Benjamin Miller Zegarelli (Chemistry) B.A., Middlebury College 2005.

Degree of Engineer

DIVISION OF BIOLOGY

Stijn Cassenaer (Biology) B.S., University of California, San Diego 1999.
Thesis: Spike-Timing Dependent Plasticity and Synchronous Oscillations in an Invertebrate Olfactory System.

Robert Sidney Cox III (Biology) B.S., New College of University of San Francisco 2001.
Thesis: Transcriptional Regulation and Combinatorial Genetic Logic in Synthetic Bacterial Circuits.


Asha Muthuraman Iyer (Biology) B.S., Stanford University 1998.
Thesis: FMRI Correlates of Planning Goal-Directed Actions.

Ali Mortazavi (Biology) B.S., California Institute of Technology 1993; M.S., California State University, Los Angeles 2004.

Anna Maria Salazar (Biology) B.S., California Institute of Technology 1997.
Thesis: A Pumilio Domain that Forms Heritable Amyloid Aggregates in Yeast Can Regulate Pumilio-Mediated Translational Repression in Drosophila.

Thesis: Maternal Immune Activation and Abnormal Behavior in the Adult Offspring: Towards a Mechanism.

Luigi Andrea Warren (Biology) B.Sc., University College London 1982; B.S., Columbia University 2001.

Brian Matthew Zid (Biology) B.S., Truman State University 2000.
Thesis: Translational Control Mediates Lifespan Extension Due to Dietary Restriction in Drosophila.

DIVISION OF CHEMISTRY AND CHEMICAL ENGINEERING


Melissa Jane Archer (Chemical Engineering and Applied Physics) B.S., Syracuse University 2003; M.S., California Institute of Technology 2005.
Thesis: Multijunction Solar Cells on Epitaxial Templates.

When more than one field of study is listed, the first is the major, and the second and others are minors.
Doctor of Philosophy continued

Kimberly Elizabeth Beatty (Chemistry and Biology) B.S., University of California, Santa Barbara 2002.
Thesis: Imaging the Proteome: Metabolic Tagging of Newly Synthesized Proteins with Reactive Methionine Analogues.

Teresa Diane Beeson (Chemistry) B.S., Colorado State University 2000.

Amie Kathleen Boal (Chemistry) B.A., Pomona College 2002.
Thesis: DNA-Mediated Charge Transport in DNA Repair.

Akram Issam Boukai (Chemistry) B.S., University of California, Los Angeles 2002.

Mark Butler (Chemistry) B.S., Brigham Young University 1995; M.S., University of Utah 1999.

Christie Anne Canaria (Chemistry) B.S., University of California, San Diego 2000.

Daniel David Caspi (Chemistry) B.S., University of California, San Diego 2002.

Rebecca Elizabeth Connor (Chemistry) B.S., Carnegie Mellon University 1999.

Ubaldo M. Córdova-Figueroa (Chemical Engineering) B.S., University of Puerto Rico, Mayaguez 2003.

Ralph Leonard Ameri David (Chemical Engineering) A.S., Dixie College 1998; B.S., Brigham Young University 2003.

Claudiu Adrian Giurumescu (Chemical Engineering and Biology) S.B., Massachusetts Institute of Technology 2001.

Erin Nicole Guidry (Chemistry) B.S., Texas A&M University 2002.
Thesis: Interlocked Molecules Using Olefin Metathesis.

Thesis: Structural Studies of the E. coli Methionine ABC Transporter and Its Cognate Binding Protein.

Thesis: Methods in Computational Protein Design.

Jordan E. Katz (Chemistry) B.A., Reed College 1999.
Thesis: Metal Oxide-Based Photoelectrochemical Cells for Solar Energy Conversion.

Jason M. Keith (Chemistry) B.S., University of North Texas 2001.
Thesis: Palladium Mediated Activation of Molecular Oxygen.

Thesis: Computational Insight into Homogeneous Organopalladium Catalysis.

Hugh Inkon Kim (Chemistry) B.S., University of California, Berkeley 2003.

Thesis: Characterizing α-Synuclein Membrane Bound Structure.

Sandra Lee (Chemistry) B.S., University of California, Berkeley 2000.
Thesis: Development of Iminium-Activation Technologies and the Total Synthesis of (+)-Frondosin B.

Michael J. Mackel (Chemical Engineering) B.A., University of California, Davis 1995; B.S., University of California, Santa Barbara 2000.
Thesis: Hydrophilic Polymers in Gels and Solutions: Surface Properties and Structure.

Eric Louis Margelefsky (Chemical Engineering) B.S., Cornell University 2004.
Thesis: Cooperative Catalysis by Bifunctionalized Mesoporous Silica.

Ryan Michael McFadden (Chemistry) B.S., Purdue University 2002.
Thesis: Applications of Palladium-Catalyzed Enantioselective Decarboxylative Alkylation in Natural Products Total Synthesis.

Sarina Mohanty (Biochemistry and Molecular Biophysics) B.A., University of Virginia 2001.

Vijay Natraj (Chemical Engineering) B.E., National University of Singapore 1998; M.E., 2001; M.S., California Institute of Technology 2004.
Thesis: Radiative Transfer Modeling for the Retrieval of CO₂ from Space.

Nicholas George Nickols (Chemistry) B.A., Pomona College 2000.

Christopher Richard Otey (Biochemistry and Molecular Biophysics) B.S., University of California, Santa Barbara 1999.

Yan Shuen Poon (Chemistry) B.A., B.S., University of California, Berkeley 2000.


Katie Rose Saliba (Chemistry) B.S., Georgia Institute of Technology 2001.
Thesis: Methodologies for the Rapid Synthesis of Hexoses and Their Application towards a Differentially-Protected Chondroitin Sulfate Tetrasaccharide.

Fangwei Shao (Chemistry) B.S., Fudan University 1999; M.S., 2002.

Crystal Shih (Chemistry) S.B., Massachusetts Institute of Technology 2003.

Armin Sorooshian (Chemical Engineering and Environmental Science and Engineering) B.S.,
The University of Arizona 2003; M.S., California Institute of Technology 2005.

Ryan Leonard Stafford (Chemistry) B.S. (Biology), B.S. (Chemistry), University of California, Irvine 2002.
Thesis: Design of Protein-DNA Dimerizers.

Matthew C. Traub (Chemistry) A.B., Princeton University 2001.

Sherry Mon-Yue Tsai (Chemistry) B.S., Yale University 2000.
Thesis: α-Diaminobutyric Acid-Linked Hairpin Polymamide-Alkylator Conjugates.

Thesis: Development of Enantioselective Organocatalytic Hydrogenation Methods and Progress toward the Total Synthesis of (+)-Minfiensine.

Christina Luisa Vizcarra (Chemistry) B.S., University of Kansas 2002.
Maung Nyan Win  (Chemistry)  B.S., Virginia Commonwealth University 2003; M.S., California Institute of Technology 2005.  

Xinan Xiu  (Biochemistry and Molecular Biophysics)  B.S., University of Louisville 2002.  

Tae Hyeon Yoo  (Chemical Engineering)  B.S., Seoul National University 1996; M.S., 1998.  

Thesis: Interplay between Long-Range and Short-Range Interactions in Polymer Self-Assembly and Cell Adhesion.

DIVISION OF ENGINEERING AND APPLIED SCIENCE

Anelia Angelova  (Computer Science)  M.S., Sofia University 2000; M.S., California Institute of Technology 2004.  


Aydin Babakhani  (Electrical Engineering)  B.S., Sharif University of Technology 2003; M.S., California Institute of Technology 2005.  
Thesis: Direct Antenna Modulation (DAM) for On-chip mm-Wave Transceivers.

Iván Bermejo Moreno  (Aeronautics and French and German)  Aeronautical Engineer, Universidad Politecnica de Madrid 2001; M.S., California Institute of Technology 2004.  


Thesis: Robust Model Predictive Control with a Reactive Safety Mode.
Yuval Cassuto (Electrical Engineering) B.Sc., Technion – Israel Institute of Technology 2001; M.S., California Institute of Technology 2004. 
Thesis: Coding Techniques for Data-Storage Systems.

Gang Chow (Bioengineering) B.S., University of California, San Diego 1998; M.S., California State University, Northridge 2002. 


Gang Duan (Materials Science) B.S., Beijing University 1999; M.S., 2002; M.S., California Institute of Technology 2004. 
Thesis: Simulations, Modeling, and Designs of Bulk Metallic Glasses.

Mary Julia Dunlop (Mechanical Engineering) B.S.E., Princeton University 2002; M.S., California Institute of Technology 2004. 
Thesis: Dynamics and Correlated Noise in Gene Regulation.

Tamer El Sayed (Mechanical Engineering) A.S., Chaffey Community College 1997; B.S., California State Polytechnic University, Pomona 2002; M.S., California Institute of Technology 2004. 
Thesis: Constitutive Models for Polymers and Soft Biological Tissues.


Michael Steven Epstein (Mechanical Engineering) B.S., University of California, Los Angeles 2002; M.S., California Institute of Technology 2003. 

Jonathan Christopher Erickson (Bioengineering) B.S., Harvey Mudd College 2001; M.S., California Institute of Technology 2002. 

Claudio Fanti (Computer Science) Diploma Di Laurea, Università Degli Studi Di Padova 2001; M.S., California Institute of Technology 2004. 

Melvin Estuardo Flores Contreras (Control and Dynamical Systems) B.S.E., Arizona State University 1998.

Ebraheem Ihsan Fontaine (Mechanical Engineering) S.B., Massachusetts Institute of Technology 2002; M.S., California Institute of Technology 2004.

Christian Franck (Aeronautics) B.S., University of Virginia 2003; M.S., California Institute of Technology 2004.


Xiaojie Gao (Computer Science) B.S., Peking University 2002; M.S., California Institute of Technology 2004.

Anna Grosberg (Bioengineering) B.S., University of Minnesota 2002.

Katalin Anna Grubits (Control and Dynamical Systems) B.Sc., University of Sydney 2001.
Thesis: Low-dimensional Representations of Transitions in Molecular Systems.

Lin Han (Applied Physics) B.S., Jilin University 2001; M.S., California Institute of Technology 2003.


Xin Heng (Electrical Engineering and Applied Physics) B.S., Nanjing University 2002; M.S., California Institute of Technology 2003.

Jinseong Heo (Applied Physics) B.S., Korea Advanced Institute of Science and Technology 2002; M.S., California Institute of Technology 2004.

Thesis: Nonreflecting Boundary Conditions Obtained from Equivalent Sources for Time-Dependent Scattering Problems.


**Wei Liang** (Applied Physics) B.S., Tsinghua University 2001; M.S., California Institute of Technology 2003.

**Yongqiang Liang** (Mechanical Engineering) B.S., University of Science and Technology of China 1998; M.E., 2001; M.S., California Institute of Technology 2004.

**Hsuan-Tien Lin** (Computer Science) B.S., National Taiwan University 2001; M.S., California Institute of Technology 2005.
Thesis: From Ordinal Ranking to Binary Classification.

**Mary Laura Lind** (Materials Science) B.S., Yale University 2002; M.S., California Institute of Technology 2004.


**Jian Lu** (Bioengineering) B.S., Tsinghua University 2002; M.S., California Institute of Technology 2003.
Thesis: Quantitative Three-dimensional Imaging of Droplet Convection and Cardiac Cell Motions Based on Micro DDPIV.

**Sebastian Josef Maerkl** (Biochemistry and Molecular Biophysics) B.S., Fairleigh Dickinson University 2001.
Thesis: Microfluidic Large Scale Integration and its Application to Systems Biology.

**Georgios Matheou** (Aeronautics) Diploma, National Technical University of Athens 2002.
Thesis: Large-Eddy Simulations of Molecular Mixing in a Recirculating Shear Flow.


**Kevin L. McHale** (Bioengineering and Control and Dynamical Systems) B.S. (Chemistry), B.S. (Mathematics), University of Florida 2002.

**Jeffrey Mendez** (Environmental Science and Engineering) B.S., California Institute of Technology 1999.
Doctor of Philosophy continued


Pierre Moreels (Electrical Engineering) Diplôme d’Ingénieur, École Polytechnique 1999; DEA, Université de Bourgogne 2000; Diplôme d’Ingénieur, École Nationale des Ponts et Chaussées 2001; M.S., California Institute of Technology 2002.


Helia Naeimi (Computer Science) B.S., Sharif University of Technology 2002; M.S., California Institute of Technology 2005.
Thesis: Reliable Integration of Terascale Systems with Nanoscale Devices.


Chang Kook Oh (Civil Engineering) B.S., Seoul National University 1998; M.S., 2000; M.S., California Institute of Technology 2004.
Thesis: Bayesian Learning for Earthquake Engineering Applications and Structural Health Monitoring.

Anna H. Olsen (Civil Engineering) B.S., Harvey Mudd College 2003; M.S., California Institute of Technology 2004.
Thesis: Steel Moment-Resisting Frame Responses in Simulated Strong Ground Motions: Or How I Learned to Stop Worrying and Love the Big One.

Changlin Pang (Electrical Engineering) B.S., Tsinghua University 2000; M.S., 2002; M.S., California Institute of Technology 2003.

Piyush Prakash (Computer Science) B.S., California Institute of Technology 2002; M.S., 2005.

Amrit Pratap (Computer Science) M.Sc., Indian Institute of Technology, Kanpur 2001; M.S., California Institute of Technology 2004.
Derek Gresham Rinderknecht (Bioengineering) S.B., Massachusetts Institute of Technology 2002.
Thesis: Development of a Microimpedance Pump for Pulsatile Flow Transport -
Study of Steady and Pulsatile Transport in Microscale Cavities.

Damien Craig Rodger (Bioengineering) B.S., Cornell University 2000.
Thesis: Development of Flexible Parylene-based Microtechnologies for Retinal
and Spinal Cord Stimulation and Recording.

Angel Ruiz Angulo (Mechanical Engineering) B.S., National University of Mexico 2002;
M.S., California Institute of Technology 2004.
Thesis: Surface Deformation in a Liquid Environment Resulting from Single
Particle Collisions.

Ueli Rutishauser (Computation and Neural Systems) B.S., University of Applied Sciences,
Rapperswil 2003.
Thesis: Learning and Representation of Declarative Memories by Single Neurons
in the Human Brain.

Effrosyni Seitaridou (Applied Physics) B.A., Smith College 2002; B.E., Dartmouth
College 2002; M.S., California Institute of Technology 2004.
Thesis: Non-Equilibrium Dynamics: Diffusion in Small Numbers and Ribosomal
Self-Assembly.

Jason Shih (Electrical Engineering) B.S., California Institute of Technology 2003; M.S.,
2004.
Thesis: Microfabricated High-Performance Liquid Chromatography (HPLC)
System with Closed-Loop Flow Control.

Edwin Soedarmadjii (Electrical Engineering and Biology) B.S., California Institute of

Thesis: Molecules Computing: Self-Assembled Nanostructures, Molecular Automata,
and Chemical Reaction Networks.

Mihailo Stojnic (Electrical Engineering) Dipl. Ing., Belgrade School of Electrical
Engineering 2001; M.S., California Institute of Technology 2003.

Borching Su (Electrical Engineering) B.S., National Taiwan University 1999; M.S., 2001.
Analysis, and Theory.

Luke A. Sweatlock (Applied Physics) B.S., Cornell University 2001; M.S., California
Institute of Technology 2003.

Alexandros Taflinidis (Civil Engineering and Control and Dynamical Systems) Diploma, Aristotle University of Thessaloniki 2002; M.S., 2003.

Kunihiko Taira (Mechanical Engineering and Aeronautics) B.S., University of Tennessee 2002; M.S., California Institute of Technology 2003.


Ching Hang Tong (Environmental Science and Engineering) B.S., University of Delaware 2001; M.S., California Institute of Technology 2004.


Stephen J. Waydo (Control and Dynamical Systems) B.S., University of Washington 2001.
Thesis: Explicit Object Representation by Sparse Neural Codes.

Julie Anne Wolf (Civil Engineering) B.S., University of California, San Diego 1999; M.S., California Institute of Technology 2000.
Thesis: A Plasticity Model to Predict the Effects of Confinement on Concrete.

Michael Timothy Wolf (Mechanical Engineering and Control and Dynamical Systems) B.S., Stanford University 1997; M.S., California Institute of Technology 2005.
Thesis: Target Tracking Using Clustered Measurements, with Applications to Autonomous Brain-Machine Interfaces.

Gunsu S. Yun (Applied Physics) B.S., Pohang University of Science and Technology 1998; M.S., California Institute of Technology 2004.
Doctor of Philosophy continued

Pun To (Douglas) Yung (Bioengineering) B.S. (Electrical Engineering), B.S. (Mathematics), University of California, Los Angeles 2003.

DIVISION OF GEOLOGICAL AND PLANETARY SCIENCES

Thesis: Surface Properties of Kuiper Belt Objects and Centaurs.
Min Chen (Geophysics) B.S., University of Science and Technology of China 2001.
Thesis: Numerical Simulations of Seismic Wave Propagation in Anisotropic and Heterogeneous Earth Models: The Japan Subduction Zone.
Laura Baker Hebert (Geochemistry) B.S., University of Maryland 2001; M.S., California Institute of Technology 2004.
Thesis: Mechanisms and Evolution of Magnetotactic Bacteria.
Teh-Ru Alex Song (Geophysics) B.S., National Central University 1997; M.S., 1997.
Thesis: Broad Band Modeling Earthquake Source and Upper Mantle Structure on Plate Boundary Zones.
Zhonghua Yang (Geochemistry) B.S., University of Science and Technology of China 2000; M.S., California Institute of Technology 2005.
DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

Meghana Bhatt (Social Science) A.B., Harvard College 2001; M.S., California Institute of Technology 2004.

Alexander L. Brown (Social Science) B.S., The Ohio State University 2003; M.S., California Institute of Technology 2005.

Laurent Alexandre Mathevet (Social Science) B.S., Jean Monnet University 2002; M.S., California Institute of Technology 2005.

Kyle Alan Mattes (Social Science) B.A., Northwestern University 1997; M.S., California Institute of Technology 2005.

DIVISION OF PHYSICS, MATHEMATICS AND ASTRONOMY

Igor Bargatin (Physics and Electrical Engineering) Diploma, M.V. Lomonosov Moscow State University 2000.

Thesis: Childhood to Adolescence: Dust and Gas Clearing in Protoplanetary Disks.

Chi Ming Hubert Chen (Physics) S.B., Massachusetts Institute of Technology 1999.

Thesis: Young, Massive Star Clusters in the Antennae.

Paul Langabi Hogan Cook (Physics) B.A., University of Witwatersrand 2002; B.S., 2003


Tracy Eleanor Northup (Physics) A.B., Harvard College 1999. Thesis: Coherent Control in Cavity QED.


Thesis: A High Resolution Measurement of Temperature Anisotropies in the Cosmic Microwave Background Radiation with the Complete ACBAR Data Set.
Thesis: A Search for Cosmic Microwave Background Anisotropies on Arcminute Scales.
Sherry Hsuan Suyu (Physics) B.Sc., Queen’s University 2001.  
Lisa A. Tracy (Physics) B.S., Arizona State University 2001.  
Todor Dimitrov Tsankov (Mathematics) B.S., Sofia University 2003.  
Jie Yang (Physics) B.S., University of Science and Technology of China 2000; M.S., 2003.  
Ki Won Yoon (Physics) B.A., University of California, Berkeley 2000.  
Prizes and awards are listed only for those students receiving degrees in 2008, and include prizes and awards received by them in previous years.

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.

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.

2008 Parvathy Rama Menon, Michael Janusz Woods

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.

2008 Csilla Nani Felsen

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

2008 Michael Sean Grinolds

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

Each year Caltech awards these prizes for academic excellence to undergraduates. They are based solely on merit (selection is made on the basis of grades, faculty recommendations, and demonstrated research productivity) with no consideration given to need or any other nonacademic criteria.

2006  Todd Robert Gingrich  
       Qian Wang  
       Michael Janusz Woods

2007  Jonathan Mark Arnold  
       Elette Chantae Boyle  
       Elah Bozorg-Grayeli  
       Nathan Chan  
       Angela Weijane Chang  
       David Chen  
       Csilla Nani Felsen  
       Ilya Gekhtman

       Todd Robert Gingrich  
       Michael Sean Grinolds  
       Yang Hai  
       Michael Henry Spece Ibáñez  
       Jonathan Matthew Malmaud  
       Vivek Narshimhan  
       Aditya Rajagopal  
       Shafiqh Shirinfar

       Kevin William Watts  
       Jed Chang-Chun Yang  
       Shawn Xiao Yu  
       Yan Zhang  
       Ziqing (Winston) Zhao

2008  Jonathan Mark Arnold  
       Ning Bao  
       Elette Chantae Boyle  
       Vamsidhar Chavakula  
       David Chen  
       William Randolph Clark  
       Kevin Garland Dick  
       Csilla Nani Felsen  
       Ilya Gekhtman  
       Todd Robert Gingrich  
       Yang Hai  
       Patrick Kenichi Herring

       Edward Hsiao  
       Richard Hayden Jones  
       Christopher Robert Klein  
       Matthew Duk Ying Lew  
       Vivek Narshimhan  
       Aditya Rajagopal  
       David Zeb Rocklin  
       Prashant Saraswat  
       Shafiqh Shirinfar  
       Michael Henry Spece Ibáñez  
       Mary Elizabeth Wahl  
       Qian Wang

       Yao-Tseng Wang  
       Yi Wang  
       Kevin William Watts  
       Yingding (Bryan) Xu  
       Jed Chang-Chun Yang  
       Shawn Xiao Yu  
       Joshua Norbert Zahl  
       Yan Zhang  
       Ziqing (Winston) Zhao  
       Brian Boran Zhou
AXLINE MERIT SCHOLARS
Awarded to selected freshmen whose record of personal and academic accomplishment is judged outstanding among incoming freshmen. These scholarships are renewable, contingent on academic performance.

2005  Jonathan Mark Arnold  Sara Elizabeth Peek
       Angela Weijane Chang  John Shen
       Parvathy Rama Menon  Angela R. Shih

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.

2004  Chang-Kook Oh
2007  Winston Paul Jackson

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.

2007  Elette Chantae Boyle

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

2008  Iván Bermejo Moreno, Christian Franck
ERIC TEMPLE BELL UNDERGRADUATE MATHEMATICS RESEARCH PRIZE
Awarded to one or more juniors or seniors for outstanding original research in mathematics.
2007  Jed Chang-Chun Yang
2008  Philipp Naum Perepelitsky

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.
2005  Michael Janusz Woods
2006  Liang Zheng Tan

ROLF D. BUHLER MEMORIAL AWARD IN AERONAUTICS
Awarded to an aeronautics student for outstanding academic achievement in the Master’s program.
2008  Jean-Loup Bourguignon, Jason Scott Damazo

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.
2007  Sonia M. Tikoo

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.
2008  Hannes Helgason, David Hoch
BONNIE CASHIN PRIZE FOR IMAGINATIVE THINKING
Awarded each year to the entering freshman who has written the most imaginative essays in the Application for Freshman Admission.

2004 Cedric Jeanty

CENTENNIAL PRIZE FOR THE BEST THESIS IN MECHANICAL ENGINEERING
Awarded each year to a candidate for the degree of Doctor of Philosophy in 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 engineering. The prize consists of a citation and a cash award of $1,000, and was established with gifts from alumni following the division’s centennial celebration in 2007.

2008 Eric Johnsen, Michael Timothy Wolf

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.

2008 Kunihiko Taira

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.

2007 Brandt Arthur Belson, Jing Shen
DEANS’ CUP AND CAMPUS LIFE AND MASTER’S AWARDS

Two awards, selected by the deans, the director of campus 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.

2007 Craig Samuel Montuori, Erin Mishelle White, Campus Life
George Herbert Hines, Dean’s Cup

2008 Nathan Donnellan, Leighland John Feinman, Peter Haderlein, Adrianne Rose Stroup, Eleanor Marie Waxman, Campus Life
Peter Shek Ho Hung, Russell-John Krom, Lauren Ashley Porter, Dean’s Cup

DEMETRIADES-TSAFKA-KOKKALIS PRIZE IN BIOTECHNOLOGY OR RELATED FIELDS

Awarded annually to a Ph.D. candidate for the best thesis, publication, or discovery in biotechnology or related fields at the Institute in the preceding 12 months. Winners are selected by the bioengineering faculty. This award is made possible by a gift from Anna Kokkalis Demetriades and Sterge T. Demetriades, Eng ’58.

2008 Sebastian Josef Maerkl

DEMETRIADES-TSAFKA-KOKKALIS PRIZE IN 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.

2008 Melissa Jane Archer
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.

2008  Rassul Karabalin

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

2008  Chi Ming Hubert Chen

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.

2007  René Michele Davis

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.

2008  Ali Mortazavi, Ueli Rutishauser

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

2008  Prashant Saraswat
HAREN LEE FISHER MEMORIAL AWARD IN JUNIOR PHYSICS
Awarded to a junior physics major who demonstrates the greatest promise of future contributions in physics.
2007 Michael Sean Grinolds

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.
2007 Yao-Tseng Wang

JACK E. FROEHLICH MEMORIAL AWARD
Awarded to a junior in the upper 5 percent of his or her class who shows outstanding promise for a creative professional career.
2007 William Randolph Clark

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.
2008 Mary Julia Dunlop, Anna Maria Salazar

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.
2007 Daniel Robert Feldman
2008 Vamsidhar Chavakula
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.
2007 Victoria Hunzu Pon

ALEXANDER P. AND ADELAIDE F. HIXON PRIZE FOR WRITING
Awarded annually in recognition of the best writing in freshman humanities courses.
2005 Qian Wang

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.
2007 June Ki Wicks
2008 Katherine Breeden

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 Alikber Gürel, Todor Dimitrov Tsankov

SCOTT RUSSELL JOHNSON GRADUATE DISSERTATION PRIZE IN MATHEMATICS
Awarded for the best graduate dissertation in mathematics.
2008 Todor Dimitrov Tsankov
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.
2008  Jed Chang-Chun Yang

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.
2008  Jean-Loup Bourguignon

D. S. KOTHARI PRIZE IN PHYSICS
Awarded to a graduating senior in physics who has produced an outstanding
research project during the year.
2008  Michael Sean Grinolds

MARGIE LAURITSEN LEIGHTON PRIZE
Awarded to one or two undergraduate women who are majoring in physics or
astrophysics, and who have demonstrated academic excellence.
2006  Sarah Ann Stokes

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.
2008  Marc Alexander Grossman, Cedric Jeanty
DOROTHY B. AND HARRISON C. LINGLE SCHOLARSHIP
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. This prize is renewable, contingent on academic performance.

2005    John Shen

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

2008    Teresa Diane Beeson, Amie Kathleen Boal

MARY A. EARL McKINNEY PRIZE IN LITERATURE
Awarded to undergraduate students for excellence in writing in three categories: poetry, prose fiction, and nonfiction essays.

2006    Zhiyun Guan
2008    Molly L. Davis, Csilla Nani Felsen

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.

2007    Csilla Nani Felsen, Todd Robert Gingrich, Richard Hayden Jones
2008    Michael Sean Grinolds, Victoria Hunzu Pon

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

2008    Kate Melissa Craig
PRESIDENT’S SCHOLARS
Awarded to selected freshmen to promote the breadth and diversity of the Caltech undergraduate student body. The scholarships are renewable, contingent on academic performance.
2005 Olivia Jean Alley, Natalie Alexandra Becerra, Elette Chantae Boyle, Raquel Angelina Martinez, Lauren Ashley Porter, Sarah Elizabeth Stidham, Matthew Kenneth Wierman

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.
2006 Karen Lee Wang

HERBERT J. RYSER MEMORIAL SCHOLARSHIPS
Awarded to undergraduate students for academic excellence, preferably in mathematics.
2007 Elette Chantae Boyle, Ilya Gekhtman, Jed Chang-Chun Yang

RICHARD P. SCHUSTER MEMORIAL PRIZE
Awarded to one or more juniors or seniors in chemistry or chemical engineering on the basis of financial need and academic promise.
2008 Todd Robert Gingrich, Ziqing (Winston) Zhao

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.
2006 Christian Franck
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.

2005 Timothy Gordon Curran, Joseph Clarence Donovan, George Herbert Hines
2006 Katherine Breeden, Gina Anne Gage, Kevin William Watts, Xi (Cecilia) Yu
2007 Nathan Chan, Molly L. Davis, Csilla Nani Felsen, Richard Hayden Jones

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.

2008 Erin Paul Flanagan

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.”

2008 Natalie Alexandra Becerra

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

2008 Borching Su

FREDRICK J. ZEIGLER MEMORIAL AWARD
Awarded to an outstanding sophomore or junior in pure or applied mathematics, for excellence in scholarship as demonstrated in class activities or in the preparation of an original paper or essay in any subject area.

2006 Ilya Gekhtman
In the oft practiced Baroque tradition of adapting
a different text to the same music . . . .

There’s Just One!
G.F. Handel*

Hallelujah!
In Pasadena, graduation, jubilation, the time has come.
Sounds of music, glorious cheering, exaltation, adulation,
the time is now!

Graduates on this day we salute you!
Sing praises, you’ve done it, it’s over, hallelujah!
For your accomplishments, we give honor.
Sing praises, you’ve done it, it’s over, hallelujah!

Praise on this day of great celebration!
You’ve done it, you’re through, no more take-homes, no problem sets,
halleylah!
No thesis, no flicking, no flaming, no more work, hallelujah!
No finals, no midterms, no more nights in the lab, hallelujah!

For there is life beyond quantum physics.
For there is life beyond the house alleys.
No research, no UASH, all-nighters are all gone,
No classes, no letters from the Dean!
Free weekends, real life begins!
With vision now go forth and seek a new horizon, and make your alma mater proud.
And she shall reign forever in science.

There’s just one!
- in theories of protons, electrons and chem bonds.
Caltech can stun!
- in science with rigor, in research with vigor.
There’s just one!
- in rockets, in astro, in seismo, in neurons.
Tech is the sun:
- with medals of science, with Nobel achievements.
There’s just one!
- for ever exalted remember the Rose Bowl!
And now you’re done, you have won, hail new alum.

And you shall spread Tech’s passion for science.

New alum, Tech needs you, remit a sum, contribute!
For Tech to reign in science forever.
There’s just one! A star of stars!
There’s just one! Renown on Mars!

And Tech shall reign forever in science.
You’ve won the day, we shout hooray!

We honor your passion, your achievement, your triumph, hallelujah!

*Music: September 1741, George Frideric Handel
Text: April 2004, K. Giapis and D. Caldwell
Hail CIT

(Caltech Alma Mater)

by Manton Barnes, B.S. ’21 E.E.

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.
SERVICES FOR
COMMENCEMENT
GUESTS

- **PUBLIC TELEPHONES** are available in Baxter Hall and Beckman Auditorium.
- **RESTROOMS** are available in Baxter Hall, Beckman Labs, Dabney Hall, and Beckman Auditorium.
- Information about the nearest location for **FIRST AID SERVICES** is available at the Information Center.
- **LOST AND FOUND** items may be reported and/claimed at the Information Center.
- Complimentary **COFFEE and PUNCH** (beginning at 8:30 a.m.)
- **CALTECH BOOKSTORE** sells souvenirs, film, and other items.
- **ATHENAEUM** luncheon tickets on sale 8–10 a.m.

SPECIAL SERVICES
FOR PERSONS WITH
DISABILITIES

- **ASSISTIVE LISTENING DEVICES** are available at the Information Center. A driver’s license or state-issued ID card is required.
- **LARGE-TYPE PROGRAMS** (abridged) are available at the Information Center.
- **AMERICAN SIGN LANGUAGE** (ASL) interpreters are stationed at the west front of the ceremony seating area.
- **PEOPLE WHO USE WHEELCHAIRS**, and their guests, will find a special section near the east front of the ceremony seating area.
- **RESTROOMS ACCESSIBLE TO PEOPLE WHO USE WHEELCHAIRS** are located on the first floor of Dabney Hall and of Baxter Hall.
- **AMPLIFIED TELEPHONE** is available in Beckman Auditorium.

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**Map Diagram**

- **Beckman Auditorium**
- **Baxter Hall**
- **Beckman Labs**
- **Dabney Hall**
- **Parsons-Gates**
- DEL MAR BLVD.
- MICHIGAN AVE.
- LURA ST.
- ACCESS
- drop off
- INFORMATION

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