One Hundred and Third Annual Commencement

June 13, 1997
Cover illustration of Caltech's Olive Walk
by Joseph Stoddard

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CALIFORNIA INSTITUTE OF TECHNOLOGY

One Hundred and Third
Annual
Commencement

FRIDAY MORNING AT TEN O’CLOCK
JUNE THIRTEENTH, NINETEEN NINETY-SEVEN
About Caltech

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 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.

Caltech today has a 124-acre campus, operates six 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 2,000 students, more than half of whom are in graduate studies; about 280 professorial faculty members, including two Nobel laureates and two Crafoord laureates; and more than 200 research faculty members. Today, Caltech will award 201 students the B.S. degree; 104 students the M.S. degree; 6 scholars the Engineer’s degree; and 173 doctoral candidates the Ph.D. degree, for a total of 484 graduates—quite a leap from the one man and one woman who constituted the first collegiate graduating class of Throop Polytechnic Institute. Today also marks Thomas E. Everhart’s last commencement; he steps down as President of Caltech this fall after presiding over 10 graduation ceremonies.
About the Speaker

The Institute is honored to have renowned virologist David Ho as the speaker at its 103rd commencement. Born in Taiwan, Ho immigrated to Los Angeles with his family at the age of 12. After spending his freshman year pursuing his passion for physics and mathematics at the Massachusetts Institute of Technology, he transferred to Caltech, where he received his B.S. in biology in 1974. A strong interest in medical research led him to Harvard Medical School, where he received his M.D. in 1978. In 1981 he served as chief medical resident at Cedars-Sinai Medical Center in Los Angeles, where he began seeing patients with mysterious flu-like symptoms that would later be identified as early signs of AIDS.

In 1982, Ho went to Massachusetts General Hospital in Boston to conduct research on AIDS. He later served as a junior faculty member at UCLA, and in 1990, when he was 37 years old, he was chosen to direct the Aaron Diamond AIDS Research Center (an affiliate of Rockefeller University) in New York.

Ho’s research career has yielded many significant and remarkable discoveries about how the AIDS virus works. He believed from the start, as did only a small group of researchers, that AIDS was probably an infectious disease. He was the fourth person to isolate the AIDS virus, and he became an expert in detecting HIV (human immunodeficiency virus) in body tissues. He was the first person to show that HIV grows in long-lived immune cells called macrophages. His breakthrough work in virology, which revealed how the body fights the AIDS virus in the earliest stages of infection, has fundamentally changed how scientists think about the AIDS virus and how doctors treat AIDS infections.

At an international AIDS conference last July, Ho reported that a “cocktail” of protease inhibitors given to patients in the earliest stages of AIDS infection was able to control replication of the virus. He is hopeful that the AIDS virus may someday be eradicated. For his contributions to research on the AIDS virus, Ho was named Time magazine’s Man of the Year for 1996.

Caltech Alumni Association Celebrates 100 Years

In honor of the centennial of the Caltech Alumni Association, all Caltech alumni have been invited to march in today’s commencement procession. Leading them will be a group of alumni, two from each decade, who were selected to highlight and celebrate the extraordinary and diverse achievements of Caltech graduates. Representing the 1900s is Mark Grinnell (for Joseph Grinnell); 1910s, Tom Capra (for Frank Capra) and Earl Mendenhall, Jr. (for Earl Mendenhall, Sr.); 1920s, Arnold Beckman and Linda Pauling Kamb (for Linus Pauling); 1930s, William Pickering and Charles Townes; 1940s, Paul MacCready and Eugene Shoemaker; 1950s, Harrison Schmitt; 1960s, Joseph Rhodes; 1970s, David Ho (today’s speaker) and Erik Sirri; 1980s, William Gross; and 1990s, Lounette Dyer and Ari Kaplan. Unable to attend are Franklin Jewett (deceased) (1900s), Moshe Arens (1950s), York Liao (1960s), and Arati Prabhaker (1980s).
The Commencement Ceremony

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 supermagisterial 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*

*Professor of History, Emeritus*
Academic Procession

Chief Marshal
J. Morgan Kousser, Ph.D.

Marshals
Arden L. Albee, Ph.D.
Christopher E. Brennen, D.Phil.
Gary Lorden, Ph.D.
Jean-Paul Revel, Ph.D.
David Wales, Ph.D.
Ward Whaling, Ph.D.
Alison Winter, Ph.D.

Faculty Officers
Daniel J. Kevles, Ph.D.
Ward Whaling, 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 ENGINEER
CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
ALUMNI
FACULTY OFFICERS
THE FACULTY
THE CHAIRS OF THE DIVISIONS
THE DEANS
THE PROVOST
THE TRUSTEES
THE COMMENCEMENT CHAPLAIN
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 Bing, M.M., Conductor

PRESIDING ............................... Gordon E. Moore, Ph.D.
                                          Chair of the Board of Trustees
                                          California Institute of Technology

INVOCATION ............................... Father Brian Wilson
                                          Director, Caltech Newman Center

“SCIENCE AS A CANDLE OF HOPE” .................... David D. Ho, M.D.
                                          Caltech, B.S. ’74
                                          Director, Aaron Diamond AIDS Research Center
                                          Rockefeller University

CHORAL SELECTION .......................... The Caltech Glee Clubs
                                          Donald G. Caldwell, D.M.A., Conductor

  “Hallelujah” from Messiah
  George Frederick Handel
  (The audience will please rise during the singing of the “Hallelujah” chorus.)

CONFERRING OF DEGREES ..................... Thomas E. Everhart, Ph.D.
                                          President
                                          California Institute of Technology
PRESENTATION OF CANDIDATES FOR DEGREES

For the Degree of Bachelor of Science ........ Jean-Paul Revel, Ph.D.
Dean of Students

For the Degree of Master of Science ........ Gary A. Lorden, Ph.D.
Vice President for Student Affairs

For the Degree of Engineer ................. Arden L. Albee, Ph.D.
Dean of Graduate Studies

For the Degree of Doctor of Philosophy .......... Dr. Albee

Biology .................................. Ray D. Owen, Ph.D.
Professor of Biology, Emeritus

Chemistry and Chemical Engineering .... Peter B. Dervan, Ph.D.
Division Chair

Engineering and Applied Science ........ John H. Seinfeld, Ph.D.
Division Chair

Geological and Planetary Sciences .... Edward M. Stolper, Ph.D.
Division Chair

Humanities and Social Sciences ........ John O. Ledyard, Ph.D.
Division Chair

Physics, Mathematics and Astronomy .... Charles W. Peck, Ph.D.
Division Chair

ANNOUNCEMENT OF AWARDS AND CONCLUDING REMARKS ........ President Everhart

ALMA MATER ..................... The Caltech Glee Clubs,
The Caltech Convocations Brass and Percussion Ensemble, and Organ
(The audience may join in; lyrics are found on page 40.)

BENEDICTION ..................... Father Wilson

RECESSIONAL ...................... The Caltech Convocations Brass and Percussion Ensemble

ORGAN POSTLUDE ..................... Dr. Deutsch
Candidates for Degrees

BACHELOR OF SCIENCE

Lada Ariana Adamic* Boulder, Colorado  Physics and Engineering and Applied Science
Jonathan Erik Aldrich* Vancouver, Washington  Engineering and Applied Science
Aristotelis Asimakopoulos* Temecula, California  Applied Mathematics and Engineering and Applied Science
Daniel Isao Azuma* Sunnyvale, California  Engineering and Applied Science
Dave Morris Bacon* Yreka, California  Physics and Literature
Micah Jacob Barclay Davison, Michigan  Electrical Engineering
David Michael Barth* Sacramento, California  Engineering and Applied Science
Geoffrey Stephen David Beach Kalamazoo, Michigan  Physics
Cyrus Herat Behroozi* Cedar Falls, Iowa  Physics
Steven Paul Bennett* Las Cruces, New Mexico  Biology and Chemistry
Brian Lee Bircumshaw* San Diego, California  Engineering and Applied Science (Mechanical Engineering)
Seth Blumberg* Santa Barbara, California  Engineering and Applied Science
Catherine Boone Anchorage, Alaska  Physics
Laura Emmons Brady Needham, Massachusetts  Geology
Mike J. Cai* Sayville, New York  Physics
Christopher Michael Cary Glencoe, Missouri  Engineering and Applied Science
Raymond S. Chan San Gabriel, California  Physics
Christopher J. Chang* Palo Alto, California  Chemistry
Tony Sheng-te Chang Arcadia, California  Engineering and Applied Science
Prista Charuworn Santa Monica, California  Biology
Steven Michael Chase* Mason, New Hampshire  Applied Physics
Ann Whei Chen* Claremont, California  Biology and History
Emily Ye-Chieh Chen* South Pasadena, California  History
Larry Jenn-Yu Chen* Cerritos, California  Chemical Engineering
Shirley Shuying Chen* Arlington Heights, Illinois  Chemistry
Kai Wai E. Chiu* Hong Kong, Hong Kong  Electrical Engineering
Lon W. Christensen* Klamath Falls, Oregon  Engineering and Applied Science
Jenny Shihching Chu* Glendora, California  Biology
Eugene Chun* Los Angeles, California  Engineering and Applied Science
Calin Alexandru Ciocarlie* Bucharest, Romania  Physics

Students whose names are followed by an asterisk are being graduated with honor in accordance with a vote of the faculty.
BACHELOR OF SCIENCE — Continued

Travis Colby Collier  Irving, Texas  Engineering and Applied Science
Jennifer Louise Copas  Winchester, Massachusetts  Biology
Marc A. Coram*  Santa Clarita, California  Mathematics and Engineering and Applied Science
Urban Utendwe Dabutha  Gaborone, Botswana  Engineering and Applied Science
Neal K. Dalal*  Clifton, New Jersey  Physics
Morgan Daniel Davis  Spokane, Washington  Electrical Engineering
Vandana Rohitkumar Desai*  Mount Prospect, Illinois  Astronomy
Ramya Niroshana Dissanayake  Colombo, Sri Lanka  Engineering and Applied Science
Chinh Huy Doan*  Korbal, California  Electrical Engineering
William Warfield Dougherty  Longwood, Florida  Electrical Engineering
Amanda Lorraine Eckermann  Denver, Colorado  Chemistry
Daniel Adam Eckstein*  Smithtown, New York  Biology
Heidi Lynn Eldenburg  Denver, Colorado  Economics
Matias Eliyovich  Emerson, New Jersey  Mathematics
Nelson Richard Escobar  San Jose, California  Engineering and Applied Science
Jarah Markar Evaslin*  West Hartford, Connecticut  Physics and Mathematics
Gary Lindsay Fay II  Spring Hill, Florida  Engineering and Applied Science (Aeronautics)
Michael Albert Fox  Pasadena, California  Engineering and Applied Science
Tad Jeffrey Fujioka  Juneau, Alaska  Engineering and Applied Science
Marcel Gavriliu  Bucharest, Romania  Mathematics
Eletherios Gkioulekas  Thessaloniki, Greece  Applied Mathematics
Yusuf Cem Gomel  Izmit, Turkey  Electrical Engineering
Matthew Tyson Grant  Encinitas, California  Engineering and Applied Science
Timothy Owen Gunter*  Clayton, Missouri  Physics
Francisco Guzmán  Odessa, Texas  Physics
Eugene Ha*  Toronto, Canada  Mathematics
Melissa Lee Hampton  Nashville, Tennessee  Chemical Engineering
Gregory Ryan Harper  Rochester, New York  Astronomy
Jason Haycox Heiss  Eugene, Oregon  Biology
Paul Michael Henderick*  San Lorenzo, California  Engineering and Applied Science (Mechanical Engineering)
Cailin Camille Henderson*  Arcata, California  Biology
Amy Elizabeth Herr*  Palm Bay, Florida  Engineering and Applied Science
Jennifer Elizabeth Holland  Valencia, California  Engineering and Applied Science
James Allen Honaker  Severn, Maryland  Social Science
Jason Hong*  Belle Mead, New Jersey  Chemistry
BACHELOR OF SCIENCE — Continued

Bradey David Honsinger Wenatchee, Washington  Engineering and Applied Science
Andrew Sumika Huntington Pleasant Hill, Oregon  Chemistry
Alain Michel Inugai Duncanville, Texas  Engineering and Applied Science
Brian Samuel Jenkins Malvern, Arkansas  Chemistry
Lin Zhuo Jia* San Gabriel, California  Biology
Kenny Kun Jiang* Shanghai, China  Engineering and Applied Science
Elizabeth Deneiges Johnson Albany, New York  Engineering and Applied Science
Neil Christopher Jones Tucson, Arizona  Chemistry
Sham Machandranath Kakade* Pomona, California  Physics
Nanayakkarawasam Wellala Godage M. M. Kanchana Panadura, Sri Lanka  Engineering and Applied Science
Anuraag R. Kansal Hollidaysburg, Pennsylvania  Chemical Engineering
Tejaswi Kasturi State College, Pennsylvania  Engineering and Applied Science
Leonid Khakhham Los Angeles, California  Applied Mathematics
Kenneth Andrew Khanna Woodbury, Connecticut  Chemical Engineering
Hee Kim* Downey, California  Economics
Clay Hajime Kishiyama Orange, California  Engineering and Applied Science
David Makoto Kondo Danvers, Massachusetts  Engineering and Applied Science
Donald Young Kwak Shererville, Indiana  Engineering and Applied Science
Wai Pang Kwan* Flushing, New York  Engineering and Applied Science and Chemistry
Seth Laroe Lacy Farmington, Arkansas  Physics and Engineering and Applied Science (Aeronautics)
Seth Michael Laforge Eureka, California  Engineering and Applied Science
Benjamin Fredrick Lane* Stockholm, Sweden  Astronomy
John Carol Langford* Lebanon, Oregon  Physics and Engineering and Applied Science
Jack Michael Langsdorf* Watertown, Connecticut  Electrical Engineering and Applied Mathematics
Gretchen Marie Larson* Richmond, Virginia  Chemistry
Ted Alfred Laurence* Thousand Oaks, California  Physics
Sarah Elizabeth Laxton Unionville, Canada  Engineering and Applied Science
Huy Ba Le Sugar Land, Texas  Engineering and Applied Science
Alfred Wei-Yang Lee Irvine, California  Engineering and Applied Science
Nathan Van Lee* El Monte, California  Engineering and Applied Science
Mina M. Leung Chicago, Illinois  Engineering and Applied Science
James Lin* Cupertino, California  Engineering and Applied Science
Robert Han-Chung Lin* Flushing, New York  Electrical Engineering
Dmitri Linde* Stanford, California  Engineering and Applied Science and Applied Mathematics
Frank Hiroshi Ling* Long Beach, California  Chemical Engineering
Fong Liu Taipei, Taiwan  Engineering and Applied Science
Morrison Ray Lucas  Chanhassen, Minnesota  Engineering and Applied Science  
Robert Scott Lyons  Toledo, Washington  Astronomy  
Carlos Maldonado  El Paso, Texas  Chemical Engineering  
Muhammad Atif Malik  Lahore, Pakistan  Chemical Engineering  
Noah Malmstadt*  Greendale, Wisconsin  Chemical Engineering  
Joseph Peter John Manca  Sunnyvale, California  Engineering and Applied Science  
Obadiah Johnathan Manley  Grass Valley, California  Engineering and Applied Science  
Aaron Herman Matz*  Phoenix, Arizona  Electrical Engineering  
Sebastian Maurice Maurer*  Los Altos, California  Physics  
Ellis Fan-Chuin Meng*  Orange, California  Engineering and Applied Science  
Jeffrey Christopher Miller*  Las Cruces, New Mexico  Biology  
Tessa René Miller*  Edmond, Oklahoma  Biology  
Michael Joshua Moats  Woodlands, Texas  Engineering and Applied Science  
Carter Movinckel Moursund  San Antonio, Texas  Electrical Engineering  
Christos Moustakas*  Carlsbad, California  Astronomy  
John Hugh Mulcahy  Conway, Pennsylvania  Engineering and Applied Science  
Laura Matiana Muñoz*  Las Vegas, Nevada  Engineering and Applied Science  
Mark Lee Neidengard*  Los Osos, California  Engineering and Applied Science  
Pauline Crystal Ng*  Alameda, California  Biology  
Thomas Andrew Niday*  Moorpark, California  Physics and Applied Mathematics  
Matthew Mark Noble  Fort Lauderdale, Florida  Engineering and Applied Science  
Scott Charles Noble  East Lansing, Michigan  Physics  
Jennifer Nobuko Ohgi  Westminster, California  Engineering and Applied Science  
Oon-Gil Paik  Seoul, Korea  Engineering and Applied Science  
Jae In Park  Falls Church, Virginia  Physics  
Aaron James Passey  Bothell, Washington  Engineering and Applied Science  
Lena Petrović*  Oxford, Mississippi  Engineering and Applied Science and Applied Mathematics  
Alexei Polichtchouk*  Moscow, Russia  Physics  
Igor Polishchuk*  Brooklyn, New York  Physics  
Arlene Paz Pons  Scotch Plains, New Jersey  Chemical Engineering  
Yekaterina Talmazan Porter*  St. Petersburg, Russia  Engineering and Applied Science and Economics  
Emil Constantin Praun*  Bucharest, Romania  Engineering and Applied Science  
Jeff Wei Qin*  San Diego, California  Electrical Engineering and Economics  
James Joseph Quallen  Tampa, Florida  Chemistry  
Priyamvada Rai*  New Delhi, India  Biology  
Kumar S. Raman*  Sayre, Pennsylvania  Physics  
Albert Ramirez  Houston, Texas  Chemistry
BACHELOR OF SCIENCE — Continued

Vivek Ray Flushing, New York Engineering and Applied Science
Radhika Chinthamani Reddy Port Matilda, Pennsylvania Biology
David Ricci Relyea* Waterford, Connecticut Physics
Emily Christine Rempel Mukwonago, Wisconsin Engineering and Applied Science
Matthew Ray Richardson* Vancouver, Washington Engineering and Applied Science
Anil Roopnarine Preysal Village, Trinidad and Tobago Engineering and Applied Science
Dov Stuart Rosenberg Canton, Ohio Engineering and Applied Science and Economics
Aaron Arthur Rosin Fresno, California Biology
Kevin A. Roust* Sioux Falls, North Dakota Economics
Paul Anthony Rubio El Paso, Texas Engineering and Applied Science
Saurabh Saha* Skokie, Illinois Biology
Anna Maria Salazar* Albuquerque, New Mexico Biology and Literature
Marco Antonio Santos Hato Rey, Puerto Rico Physics
Corinna Esmeralda Schultz Harlingen, Texas Engineering and Applied Science
Ross Andrew Segelken* Apple Valley, Minnesota Electrical Engineering
Gina Lillian Serraiocco* La Cañada, California Biology
Sheila Mohini Shah* Oakton, Virginia Physics
Adele Elaine Shakal Greenwood, Indiana Geochemistry
Penelope Lyndal Sherman New Canaan, Connecticut Engineering and Applied Science
Kanna Shimizu* Tokyo, Japan Electrical Engineering
Sanjiv Man Shrestha Kathmandu, Nepal Engineering and Applied Science
Benjamin Arthur Siron* Bloomington, Illinois Applied Physics
William Hugh Smit Rancho Palos Verdes, California Mathematics
Srdjan Dejan Sobajic San Jose, California Engineering and Applied Science
Edwin Soedarmadji* Bandung, Indonesia Electrical Engineering and Applied Physics
Alessandro Luigi Spadini Wyoming, Ohio Chemical Engineering
Patrick Michael Spradlin* Lewistown, Montana Physics
Michael Donald Stage* Cicero, New York Physics
Mark Richard Stewart* Wethersfield, Connecticut Chemical Engineering
Ronald Honeycutt Stowell Englewood, Colorado Physics and Applied Mathematics
Ki-Young Suh* Calabasas, California Biology
Toufic Mubadda Suidan* Atlanta, Georgia Mathematics
Janet Yi Sun* Lanham, Maryland Engineering and Applied Science and Literature
Narasimharao Surampudi Glendora, California Engineering and Applied Science and Biology
Philip Matthew Sutton* San Gabriel, California Engineering and Applied Science
BACHELOR OF SCIENCE — Continued

Karl David Thulin* East Sandwich, Massachusetts Social Science
Michael Monroe Tice Elkhart, Indiana Engineering and Applied Science
Samson Joshua Timoner* Woodbridge, Connecticut Applied Physics
Joseph Charles Trela San Jose, California Planetary Science
Jason Michael Trevor Monmouth, Illinois Applied Mathematics
Evren Can Tümer Riverside, California Physics
Elwyn Timothy Uy* Bellingham, Washington Applied Physics
Keely Llewellyn Walker Spring Valley, California Biology
Jamie Dale Walls* Wahpeton, North Dakota Chemistry
Michael Chung-l Wang Albany, California Physics
Rachel Christine Weathers* Las Vegas, Nevada Engineering and Applied Science
(Mechanical Engineering) and Science, Ethics, and Society
Robert Frederick Webbink* Champaign, Illinois Engineering and Applied Science
Jane Chia-Pen Wei* Poway, California Biology
Barbara Ann Weir Cicero, New York Biology
Luke Weisman* San Francisco, California Engineering and Applied Science
Michele Sweeney Wiegand Woodstock, New York Biology
Jason Stephen Wiener* Anchorage, Alaska Physics
Aloysius Arthur Wild III* Chicago, Illinois Physics
Brian Douglas Winters Portland, Oregon Engineering and Applied Science
Keith Han Wong San Jose, California Electrical Engineering
Tony Lap-Wai Wong Hong Kong, Hong Kong Engineering and Applied Science
(Mechanical Engineering)
Yi Le Xu* Santa Ana, California Engineering and Applied Science
Winston Chuen-Shih Yang Davenport, Iowa Mathematics
Gilbert Yoh* Palos Verdes Peninsula, California Electrical Engineering
Simon Yura Yu Sunnyvale, California Engineering and Applied Science
David Dillon Zito New Rochelle, New York Engineering and Applied Science
MASTER OF SCIENCE

Wayez Rakey Ahmad (Chemical Engineering) B.A.Sc., University of Toronto 1992; M.A.Sc., 1993.
Sony John Akkarakaran (Electrical Engineering) B.Tech., Indian Institute of Technology, Bombay 1996.
Asad Ullah Aman (Chemical Engineering) B.S.E., The University of Iowa 1995.
David Deloyd Anderson (Applied Mechanics) B.S., Utah State University 1996.
Peter David Bogdanoff (Materials Science) B.S., Harvey Mudd College 1994.
Tara Lee Butterfield (Social Science) B.A., University of California, Berkeley 1990.
Christopher J. Chang (Chemistry) B.S., California Institute of Technology 1997.
Rebecca Lynn Charlton (Geology) B.S., Washington State University 1994.
Claudine Minnie Chen (Applied Physics) B.S., University of North Carolina at Chapel Hill 1995.
Kai-En Chiang (Electrical Engineering) B.S., National Taiwan University 1995.
Sandra Ann Chin (Biology) B.S., University of Oregon 1995.
Bryan Shwo-Kang Chow (Computer Science) B.S., University of California, Berkeley 1993; M.S., Stanford University 1994.
Deborah Elaine Dauger (Geophysics) B.S., Harvey Mudd College 1995.
Nitin Ashok Deshpande (Aeronautics) B.Tech., Indian Institute of Technology, Bombay 1996.
Blythe Chadwick Dickman (Electrical Engineering) B.S., California State Polytechnic University, Pomona 1996.
Diego G. Dugatkin (Electrical Engineering) Ingeniero Electrónico, Universidad de Buenos Aires 1994.
Joshua Daniel Eisenberg (Biology) B.Sc., State University of New York at Stony Brook 1995.
Jeffrey Donald Eldredge (Mechanical Engineering) B.S., Cornell University 1996.
MASTER OF SCIENCE — Continued

David Roger Foss (Chemical Engineering) B.S., Rensselaer Polytechnic Institute 1994.
Martha Anne Gallivan (Mechanical Engineering) B.S., University of Illinois at Urbana-Champaign 1996.
Jack Steven Gilfuss (Chemical Engineering) B.S., Cornell University 1995.
Aidyl Sofia Gonzalez-Serricchio (Biology) B.S., Rensselaer Polytechnic Institute 1993.
Julia S. Goreva (Geochemistry) B.Sc, Moscow State University 1993.
Robert John Griffin (Chemical Engineering) B.S., Tufts University 1993.
Andrew Joseph Guzman (Civil Engineering) B.S., University of Arizona 1995.
Sven Halstenberg (Chemical Engineering) B.S., Stanford University 1995.
Katherine Anne Hannon (Biology) B.S., University of Illinois at Urbana-Champaign 1994.
Hirotaka Hara (Electrical Engineering) B.S., University of Tokyo 1987.
Jane Ellen Heinemann (Geophysics) B.S., University of California, Santa Barbara 1995.
Brent Allen Horn (Chemistry) B.S., Brigham Young University 1995.
Yun Hsu (Mechanical Engineering) B.S., University of Arizona 1996.
Shaocong Jiang (Chemical Engineering) B.S., Fudan University 1988; M.S., Dalian Institute of Chemical Physics 1991.
Christopher W. Jones (Chemical Engineering) B.S., The University of Michigan 1995.
Heidi Renate King (Social Science) B.A., University of California, Irvine 1995.
Anthony Mark Kwasnica (Social Science) B.A., University of Arizona 1994.
Jamie Brian Lindsay (Chemical Engineering) B.S., The University of Texas at Austin 1995.
David Charles George Liney (Chemistry) University of St. Andrews.
Julio Danin Lobo (Chemical Engineering) B.S., University of Massachusetts at Amherst 1995.
Lin Ma (Mechanical Engineering) B.S., Beijing University 1996.
Murat Mese (Electrical Engineering) B.S., Bilkent University 1996.
Jean-Francois Roland Molinari (Aeronautics) Ingenieur, Université de Technologie de Compiègne 1996.
Christophe Moser (Electrical Engineering) B.S., Swiss Institute of Technology 1993.
Thomas Williams Murphy, Jr. (Astronomy) B.S., Georgia Institute of Technology 1993.
Mika Nyström (Computer Science) S.B., Massachusetts Institute of Technology 1994.
Gregory Stewart Oskin (Geology) B.A., Middlebury College 1995.
Thomas William Olick (Electrical Engineering) B.S., University of Notre Dame 1996.
George Xiaoxi Ouyang (Electrical Engineering) B.Eng., Memorial University of Newfoundland 1995.
Lesley Anne Perg (Geology) B.S., University of Arizona 1995.
Alberto Pesavento (Electrical Engineering) Laurea, Università degli Studi di Padova 1995.
Preston Manly Pfarner (Computer Science) B.S., California Institute of Technology 1993.
Alison Beth Pratt (Chemical Engineering) A.B., Dartmouth College 1992; B.S., Northeastern University 1995.
Alastair Thomas Preston (Civil Engineering) B.E., Canterbury University 1995.
Wendong Qu (Engineering Science) B.S., Ocean University of Qingdao 1992; M.S., 1995.
Adam F. Rifkin (Computer Science) B.S., College of William and Mary 1990; M.S., 1992.
Reginald Eric Roberts (Social Science) A.A., El Camino College 1990; B.A., California State Polytechnic University, San Luis Obispo 1993; M.S., Carnegie Mellon University 1995.
Saud Sami (Chemical Engineering) B.S., The University of Rochester 1995.
Julie Beth Scott (Social Science) B.S., The University of Alabama 1995.
Peter Robert Seidel (Electrical Engineering) B.S.E., Princeton University 1994;
M.S. (Chemical Engineering), California Institute of Technology 1996.
Lori Ann Singer (Chemistry) S.B., Massachusetts Institute of Technology 1993.
Arthur George Street (Physics) B.S., University of Sydney 1994.
Hiroshi Suganuma (Electrical Engineering) B.S., University of Tokyo 1990.
Po-An Sung (Electrical Engineering) B.S., National Tsing-Hua University 1993; M.S., 1995.
Cecilia Wai-Kam Tse (Chemical Engineering) B.Sc., University of Calgary 1988; M.Sc., 1993.
Jelena Vuckovic (Electrical Engineering) B.Sc., Faculty of Electronics NIS 1993.
Kenneth Antrim Walsh (Electrical Engineering) B.S., California Institute of Technology 1996.
Song Wang (Physics) B.S., Beijing University 1994.
Xu Wang (Electrical Engineering) B.S., Zhejiang University 1990; M.S., Tsinghua University 1993; M.S., Syracuse University 1995.
Natalie Dawn Winblade (Chemical Engineering) B.S., University of Washington 1995.
Meina Xu (Electrical Engineering) B.S., University of Hawaii at Manoa 1995.
Qing Yang (Mathematics) B.S., University of Science and Technology of China 1992.
Yun Ye (Materials Science) B.E., Tsinghua University 1995.
Hiroshi Yoshino (Chemical Engineering) B.S., Osaka University 1983; M.S., 1985.
Georgios Zamanakos (Physics) B.S., University of Athens 1994.
Weidong Zhu (Civil Engineering) B.S., Tsinghua University 1991; M.S., State University of New York at Buffalo 1995.
Lavi Rizki Zuhal (Aeronautics) B.Sc., University of Maryland 1996.

ENGINEER

Limdara Ong Chea (Aeronautics) B.S., École Centrale Paris 1994; M.S., California Institute of Technology 1995.
Ryan Murrill Ezekiel Mackey (Aeronautics) B.S., University of California, Santa Cruz 1993.
Martin Christopher Ross (Mechanical Engineering) B.S., University of Massachusetts 1986; M.S., Rensselaer Polytechnic Institute 1993.
Charles Anthony Vanelli (Mechanical Engineering) B.S.E.E., The University of Texas at Austin 1993; M.S., California Institute of Technology 1996.
DOCTOR OF PHILOSOPHY
DIVISION OF BIOLOGY


Kyuson Yun (Biology) B.S., California Institute of Technology 1989. Thesis: Murine Twist is a bHLH Regulator that Inhibits Myogenesis by Multiple Molecular Mechanisms.

When more than one field of study is listed, in the Division of Biology it indicates a dual major; in other divisions the first is the major and the second and others are minors.

Ashish Bansal (Chemistry) M.Sc., Indian Institute of Technology, Kanpur 1990.
Thesis: Surface Modification and Charge Transfer Studies at Silicon and Gallium Arsenide Interfaces.

Thesis: The Dynamics of Flocculated Dispersions.

Frank Morales Bowman (Chemical Engineering) B.S., Brigham Young University 1991.

Paul Jonathan Carson (Chemistry) A.B., University of California, Berkeley 1987.
II. High-Resolution Optical NMR of Semiconductor Heterostructures Using Larmor Beat Detection.

Silvia Cavagnero (Chemistry) Laurea, Università degli Studi di Roma 1988; M.S., University of Arizona 1990.
Thesis: Towards Understanding Hyperthermostability of Rubredoxin from Pyrococcus furiosus.

Hou Chen (Chemistry) S.B., Massachusetts Institute of Technology 1991.


Kevin Christopher Crellin (Chemistry) B.S., University of Utah 1991.

Paul Jeffrey Drayton (Chemical Engineering and Materials Science) B.E., University of Canterbury 1990; M.S., California Institute of Technology 1994.

Part II. Nitridomanganese(V) Complexes: Design, Preparation, and Use as Novel Nitrogen Atom-Transfer Reagents.


Marlys Hammond (Chemistry) B.A., Lake Forest College 1987; M.S., The University of Kansas 1990.
DOCTOR OF PHILOSOPHY — Continued

Vassilios Hatzimanikatis (Chemical Engineering) Diploma, University of Patras 1991; M.S., California Institute of Technology 1994.

Timothy Allan Herzog (Chemistry) B.S., Gonzaga University 1990.

Timothy Wilmot Johann (Chemistry) B.A., Hamline University 1991.
Thesis: Sequence-specific Inhibition of DNA Polymerase by Phenanthrene Quinone Dimine Complexes of Rhodium(III).

Christopher Neil Kenyon (Chemistry) A.B., Princeton University 1990.


Shervin Khodabandeh (Chemical Engineering and Chemistry) B.S., University of California, Los Angeles 1993; M.S., California Institute of Technology 1995.

Andrew F. Kiely (Chemistry) S.B., Massachusetts Institute of Technology 1990.

Mayuresh V. Kothare (Chemical Engineering and Control and Dynamical Systems) B.Tech., Indian Institute of Technology, Bombay 1991; M.S., California Institute of Technology 1995.
Thesis: Control of Systems Subject to Constraints.

Robert Tan Li (Chemistry) S.B., Massachusetts Institute of Technology 1992.
Thesis: Development of Late Transition Metal Catalysts for the Transformation of Olefins.

Susanne Chosein Lin (Chemistry) B.A., Oberlin College 1990.

Donald Low (Chemistry) A.B., University of California, Berkeley 1990.

Thesis: Stability and Dynamics Studies of Apo-azurin from Pseudomonas aeruginosa.

Richard Beatty McClurg (Chemical Engineering and Materials Science) B.S., Northwestern University 1992.

Timothy M. McPhillips (Chemistry) B.S., California State University, Northridge 1991.
Sandra Meozzi (Chemistry) Laurea, Università degli Studi di Roma 1988.


Gary Alan Mines (Chemistry) B.A., Oberlin College 1990.
Thesis: Cytochrome c: Folding Triggered by Electron Transfer. Rates of Heme Oxidation and Reduction at High Driving Forces.

Thesis: Chemical Exchange in Nuclear Magnetic Resonance.

Michael Mark Murray (Chemistry) BSc, University College Cork 1990.

John Frederick Nagel (Chemical Engineering and Chemistry) B.S., Stanford University 1991; M.S., California Institute of Technology 1993.
Thesis: I. The Use of Spherosiloxanes as Molecular Building Blocks for Materials and Thin Films. II. A New Method of Using SC-Cut Quartz Oscillators for Chemical Sensing.

Hiep-Hoa T. Nguyen (Chemistry) B.S. (Chemistry), B.S. (Chemical Engineering), Georgia Institute of Technology 1990.
Thesis: The Bioinorganic Chemistry of the Particulate Methane Monoxygenase from Methylcoccus capsulatus (Bath) and Methane Activation from a Biological Perspective.

Daniel W. Pack (Chemical Engineering) B.S., University of Illinois at Urbana-Champaign 1990.

Rahul Pathak (Chemistry) B.S., Yale College 1991.
Thesis: The Saccharomyces cerevisiae Oligosaccharyl Transferase.

David Allen Rodham (Chemistry) B.S., Brigham Young University 1987; M.S., 1989.

Jamie I. Schlessman (Chemistry) B.S., Albright College 1990.
Thesis: Crystal Structure of Azotobacter vinelandii Nitrogenase Iron Protein at 2.2 Å Resolution.

Thesis: Design of Novel Titanium(IV) Schiff Base Complexes for Catalytic, Enantioselective Aldol Additions to Aldehydes.

Shannon Scot Stahl (Chemistry) B.S., University of Illinois at Urbana-Champaign 1992.

Michael H. B. Stowell (Chemistry) B.A., Reed College 1989.
Thesis: Ekmageion.

Bao-Liang Tsai (Chemistry) B.S., National Taiwan University 1986.
DOCTOR OF PHILOSOPHY — Continued

Matthew Lamont Tyler (Chemical Engineering and Control and Dynamical Systems)
B.S., California Institute of Technology 1991; M.S., Massachusetts Institute of Technology 1992.

Edye Udell (Chemical Engineering and Environmental Engineering Science) S.B.,
Massachusetts Institute of Technology 1989.
Thesis: Modeling Methane Utilization by Methanotrophs in Groundwater:
Applications for Groundwater Bioremediation.

Yushan Yan (Chemical Engineering and Chemistry) B.S., University of Science and Technology of China 1988; M.S., Dalian Institute of Chemical Physics 1990; M.S.,
California Institute of Technology 1995.

Thesis: Use of Pseudoephedrine as a Practical Chiral Auxiliary for Asymmetric
Synthesis.

DIVISION OF ENGINEERING AND APPLIED SCIENCE

Philippe H. Adam (Aeronautics and Planetary Science) B.S. (Aerospace Engineering),

Christopher Assad (Electrical Engineering) B.S., California Institute of Technology 1987;
M.S., 1989.
Thesis: Electric Field Maps and Boundary Element Simulations of Electrolocation in Weakly Electric Fish.

Eric Lee Bakke (Applied Physics) B.S., University of Wisconsin–Madison 1986; M.S.,

Thesis: Nonlinear Water Waves with Shear.

Carolyn Louise Beck (Electrical Engineering) B.S., California State Polytechnic University,


Michael C. Burl (Electrical Engineering) B.S., California Institute of Technology 1987;
DOCTOR OF PHILOSOPHY — Continued

Thesis: Planar Laser Induced Fluorescence Imaging and Monte Carlo Simulations of Pulsed Laser Ablation.

Eduardo Chan (Civil Engineering) B.S., University of Hawaii at Manoa 1991; M.S., 1993.

Jung-Fu Cheng (Electrical Engineering and Social Science) B.S., National Taiwan University 1991; M.S., California Institute of Technology 1994.
Thesis: Iterative Decoding.

Thesis: Generalizations of H-Infinity Optimization/Control of Rotating Stall.

Tony H. Deng (Mechanical Engineering and Materials Science) B.S., Beijing University 1984; M.S., Academia Sinica 1987.

Christopher J. Diorio (Electrical Engineering) B.A., Occidental College 1983; M.S., California Institute of Technology 1984.


Wenshui Gan (Civil Engineering) B.Eng., Hunan University 1982; M.S., Dalian Institute of Technology 1985.
Thesis: Earthquake Response of Steel Braces and Braced Steel Frames.


Andrew Douglas Gibson (Civil Engineering) B.E., University of Canterbury 1983; M.S., California Institute of Technology 1987.
Thesis: Physical Scale Modeling of Geotechnical Structures at One-G.

Thesis: Analog VLSI for Active Drag Reduction.

Thesis: Mutagenic Particulate Matter in Air Pollutant Source Emissions and in Ambient Air.

DOCTOR OF PHILOSOPHY — Continued

Thesis: Foundations of Learning in Analog VLSI.


Timothy Ken Horiuchi (Computation and Neural Systems) B.S., California Institute of Technology 1989; M.S., University of Southern California 1991.


Thesis: Robust Simulation and Analysis of Nonlinear Systems.


Thesis: Jet Initiation of Deflagration and Detonation.

James Frederick Lazar (Electrical Engineering) B.S., University of California, Los Angeles 1984; M.S., California State University, Long Beach 1989.

Thesis: All-Optical Wavelength Conversion by Four-Wave Mixing in a Semiconductor Optical Amplifier.

Wei Lin (Electrical Engineering) B.S., Tsinghua University 1991; M.S., California Institute of Technology 1994.
Thesis: The Trellis Complexity of Block and Convolutional Codes.

Thesis: Bulk Glass Formation and Crystallization of Zr-Ti Based Alloys.

Yuan-Pei Lin (Electrical Engineering) B.S., National Chiao-Tung University 1992; M.S., California Institute of Technology 1993.
Thesis: One- and Two-Dimensional Cosine Modulated Filter Banks.

Shih-Chii Liu (Computation and Neural Systems) S.B., Massachusetts Institute of Technology 1983; M.S., University of California, Los Angeles 1988.
DOCTOR OF PHILOSOPHY — Continued


DOCTOR OF PHILOSOPHY — Continued


Susan Catherine Paulsen (Environmental Engineering Science and German Language and Literature) B.S., Stanford University 1991; M.S., California Institute of Technology 1993.


Thesis: Stability and Structure of Stretched Vortices.


Boaz Salik (Electrical Engineering) B.S., University of Arizona 1993; M.S., California Institute of Technology 1994.

Rahul Sarpeshkar (Computation and Neural Systems) S.B. (Electrical Engineering), S.B. (Physics), Massachusetts Institute of Technology 1990.
Thesis: Efficient Precise Computation with Noisy Components: Extrapolating from an Electronic Cochlea to the Brain.


Thesis: Speciation of Fe in Ambient Aerosol and Cloudwater.
DOCTOR OF PHILOSOPHY — Continued

Thesis: Rotodynamic Forces Due to Annular Leakage Flows in Shrouded Centrifugal Pumps.

Thesis: Robotic Manipulation with Flexible Link Fingers.


Luojia Wang (Civil Engineering) B.S., Dalian University of Technology 1991; M.S., Old Dominion University 1993.
Thesis: Active Interaction Control for Civil Structures.


Carl R. Wassgren, Jr. (Mechanical Engineering) B.S., University of Illinois at Urbana-Champaign 1990; M.S., California Institute of Technology 1992.


Chih M. Yang (Materials Science) B.S., M.S., California Institute of Technology 1990.
Thesis: Manipulation of Si and Ge Crystallization.

DOCTOR OF PHILOSOPHY — Continued

DIVISION OF GEOLOGICAL AND PLANETARY SCIENCES

Paul David Asimow (Geology) A.B., Harvard College 1991; M.S., California Institute of Technology 1993.


Gregory James Holk (Geology) B.S., Arizona State University 1989; M.S., California Institute of Technology 1991.

Jean Chia Chin Hsieh (Geology) B.Sc., Carleton University 1991; M.S., California Institute of Technology 1993.


Thesis: The GPS Radio Occultation Concept: Theoretical Performance and Initial Results.

Thesis: Extensional Deformation and Volcanism Within the Northern Puertecitos Volcanic Province, Sierra Santa Isabel, Baja California, Mexico.

Xi Song (Geophysics and Computer Science) B.S., University of Science and Technology of China 1992; M.S., California Institute of Technology 1995.

Richmond Andrew Wolf (Geology and Geochemistry) A.B., Princeton University 1992; M.S., California Institute of Technology 1994.
Thesis: The Development of the (U-Th)/He Thermochronometer.

David Judson Wood (Geology) B.S.E., Princeton University 1986; M.S., California Institute of Technology 1991.
Thesis: Geology of the Eastern Tehachapi Mountains and Late Cretaceous–Early Cenozoic Tectonics of the Southern Sierra Nevada Region, Kern County, California.
DOCTOR OF PHILOSOPHY — Continued

DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

Gretchen Anne Kalsow (Social Science) B.A., Luther College 1981; M.M., Northwestern University 1992; M.S., California Institute of Technology 1997.
Thesis: A Microeconomic Analysis of Consumer Response to Direct Marketing and Mail Order.
Mikhail Myagkov (Social Science) Diploma, Moscow Institute of Physics and Technology 1991.
Thesis: Three Essays on Russia's Transition to Democracy.

DIVISION OF PHYSICS, MATHEMATICS AND ASTRONOMY

Rachel Lynn Akeson (Astronomy) B.S., University of Iowa 1991.
David Alan Beam (Physics) B.S., United States Naval Academy 1979; M.S., Stanford University 1980.
Mei Bin (Physics) B.S., Tsinghua University 1987; M.S., California Institute of Technology 1992.
Thesis: Low-noise THz Niobium SIS Mixers.
Ilia A. Binder (Mathematics) B.S., M.S., St. Petersburg State University 1992.
Thesis: Rotation Spectrum of Planar Domains.
Peter M. Bryant (Astronomy) B.A., University of Chicago 1990.
Thesis: High-Resolution Observations of the Molecular Gas in Luminous Infrared Galaxies.
Yu Cao (Physical Computation and Complex Systems) B.S., University of Science and Technology of China 1989; M.S., California Institute of Technology 1991.
Thesis: Effective Field Theories in the Study of $K_L \rightarrow \pi^+\pi^-\pi^0$ and Heavy Quark Fragmentation.
Thesis: Stabilizer Codes and Quantum Error Correction.
DOCTOR OF PHILOSOPHY — Continued

Thesis: Simulation of Surface and Material Damage During Fast Ion Penetration.
Gang He (Physics) B.S., Beijing University 1991; M.S., California Institute of Technology 1993.
Anton N. Kapustin (Physics) Diploma, Moscow State University 1993.
Thesis: Topics in Heavy Quark Physics.
Alexander Kiselev (Mathematics) Diploma, St. Petersburg State University 1993.
Thesis: Absolutely Continuous Spectrum of One-Dimensional Schrödinger Operators and Jacobi Matrices with Slowly Decreasing Potentials.
Thesis: Measurement of the Galactic Cosmic Ray Antiproton Flux from 0.25 GeV to 3.11 GeV with the Isotope Matter Antimatter Experiment (IMAX).
Qianli Liu (Physics) B.S., Beijing University 1988.
Thesis: Femtosecond Real-Time Dynamics of Solvation: Molecular Reactions in Clusters and Supercritical Fluids.
Bryon Alan Mueller (Physics) B.S., University of Minnesota 1989; M.S., California Institute of Technology 1991.
Anoop Prasad (Physics) B.Sc., St. Xavier College 1991; M.S., California Institute of Technology 1993.
Thesis: Layering Transitions, Disordered Flat Phases, Reconstruction and Roughening.
Fintan Danh Ryan (Physics) S.B., Massachusetts Institute of Technology 1992; M.S., California Institute of Technology 1996.  
Thesis: Searching for Black Holes and Other Massive, Compact Bodies Using the Gravitational Waves from Binary Inspirals.

Kate Scholberg (Physics) B.Sc., McGill University 1989; M.S., California Institute of Technology 1991.  
Thesis: A Search for Neutrinos from Gravitational Collapse with the MACRO Experiment.

Xin Sun (Physics) B.S., Beijing University 1991; M.S., California Institute of Technology 1993.  
II. Oxidation, Diffusion and Crystallization of an Amorphous Zr60Al15Ni25 Alloy.

Quentin A. Turchette (Physics) S.B., Massachusetts Institute of Technology 1991; M.S., California Institute of Technology 1993.  

Phil A. Willems (Physics) B.S., University of Wisconsin–Madison 1988.  


Wei Zheng (Physics) B.S., University of Science and Technology of China 1985; M.S., Yale University 1989.  
Thesis: Novel Aspects in the Microphase Separation of Block Copolymers.
Prizes and Awards

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.

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.

1997 Dave Morris Bacon
Priyamvada Rai

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.

1997 Gretchen Marie Larson

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.

1993 Tony H. Deng

WILLIAM F. BALLHAUS PRIZE

Awarded to aeronautics students for outstanding doctoral dissertations.

1997 John Nestor Hodowany
Miltiadis Vassilios Papalexandris

ERIC TEMPLE BELL UNDERGRADUATE MATHEMATICS RESEARCH PRIZE

Awarded to one or more juniors or seniors for outstanding original research in mathematics.

1996 Winston Chuen-Shih Yang
1997 Marc A. Coram

Prizes and awards are listed only for those students awarded degrees in 1997, and include prizes and awards received by them in previous years.
PRIZES AND AWARDS — Continued

ROLF D. BUHLER MEMORIAL AWARD IN AERONAUTICS

Awarded to an aeronautics student for outstanding academic achievement in the Master's program.
1992 Michael William Vanik
1997 Nitin Ashok Deshpande

ROSALIND W. ALCOTT MERIT SCHOLARSHIP, CALTECH PRIZE SCHOLARSHIP, 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 financial need or any other nonacademic criteria.

1995
Raymond S. Chan
Sebastian Maurice Maurer
Benjamin Arthur Siron

1996
Jonathan Erik Aldrich
Dave Morris Bacon
Raymond S. Chan
Calin Alexandru Ciocarlie
Marc A. Coram
Benjamin Fredrick Lane
Sebastian Maurice Maurer
Igor Polishchuk
Samson Joshua Timoner
Elwyn Timothy Uy
Aloysius Arthur Wild III

1997
Jonathan Erik Aldrich
Dave Morris Bacon
Cyrus Herat Behroozi
Brian Lee Bircumshaw
Christopher J. Chang
Steven Michael Chase
Lon W. Christensen
Calin Alexandru Ciocarlie
Daniel Adam Eckstein
Jason Hong
Lin Zhuo Jia
Benjamin Fredrick Lane
Ted Alfred Laurence
Dmitri Linde
Aaron Herman Matz
Sebastian Maurice Maurer
Jeffrey Christopher Müller
Igor Polishchuk
Emil Constantin Praun
Matthew Ray Richardson
Saurabh Saha
Ross Andrew Segelken
Gina Lillian Serraiocco
Michael Donald Stage
Toufic Mubadda Suidan
Samson Joshua Timoner
Elwyn Timothy Uy
Robert Frederick Webbink
Aloysius Arthur Wild III
PRIZES AND AWARDS — Continued

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

1996 Alexander Kiselev

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.

1997 Garrett Erin Reisman

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.

1994 Penelope Lyndal Sherman
1996 Brian Lee Bircumshaw
    Ellis Fan-Chuin Meng

DEANS’ CUP AND RESIDENCE LIFE AND MASTER’S AWARDS
Two awards, selected by the Deans, the Director of Residence 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.

1997 Elwyn Timothy Uly, Deans’ Cup
    Steven Paul Bennett, Residence Life and Master’s Award
    Michael Joshua Moats, Residence Life and Master’s Award

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

1996 Daniel W. Pack
    Garrett Erin Reisman

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.

1994 John Frederick Nagel
1995 Richard Beatty McClurg
1996 Wayez Rakey Ahmad
PRIZES AND AWARDS — Continued

LAWRENCE L. AND AUDREY W. FERGUSON PRIZE
Awarded to the graduating Ph.D. candidate in biology who has produced the outstanding Ph.D. thesis for the past year.
1997 Hyejin Kang

RICHARD P. FEYNMAN PRIZE IN THEORETICAL PHYSICS
Awarded to a senior on the basis of excellence in theoretical physics.
1997 Sebastian Maurice Maurer

HAREN LEE FISHER MEMORIAL AWARD IN JUNIOR PHYSICS
Awarded to a junior physics major who demonstrates the greatest promise of future contributions in physics.
1996 Sebastian Maurice Maurer

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.
1996 Aaron Herman Matz

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.
1996 Sebastian Maurice Maurer

GRADUATE DEAN'S 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.
1997 Nicola Joy Peill

GEORGE W. 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.
1996 Dave Morris Bacon
PRIZES AND AWARDS — Continued

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.

1996 Gina Lillian Serraiocco
1997 Saurabh Saha

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.

1997 Amy Elizabeth Herr

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.

1993 Melissa Lee Hampton

ARTUR MAGER PRIZE IN ENGINEERING
Awarded to a senior in engineering who has shown excellence in scholarship and the promise of an outstanding professional career.

1997 Aristotelis Asimakopoulos

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

1996 Robert Alan Singer
1997 Justin Du Bois
   Marlys Hammond
   Shannon Scot Stahl

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

1997 David Michael Barth
   Robert Han-Chung Lin
MILLIKAN SCHOLARSHIP
Awarded to selected freshmen whose record of personal and academic accomplishment is judged outstanding among the remarkable group of incoming freshmen.

1992
Sanjiv Man Shrestha

1993
Daniel Isao Azuma
Melissa Lee Hampton
Sham Machandranath Kakade
Robert Han-Chung Lin
Dmitri Linde
Laura Matiana Muñoz
Michael Donald Stage
Michele Sweeney Wiegand

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.

1997 David Ricci Relyea

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

1996 Hee Kim

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

1996 Jarah Markar Evislin

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.

1996 Christopher J. Chang
PRIZES AND AWARDS — Continued

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.

1996 Jon Nestor Hodowany

DON SHEPARD AWARD

Awarded to undergraduate 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 profit from these activities rather than on the basis of their scholastic standing.

1994
Ellis Fan-Chuin Meng
Jane Chia-Pen Wei

1995
Kanna Shimizu

1996
Melissa Lee Hampton
Paul Michael Henderick
Sham Machandranath Kakade
Fong Liu
Ellis Fan-Chuin Meng

SIGMA XI AWARD

Awarded to a senior selected for an outstanding piece of original scientific research.

1997 Jeffrey Christopher Miller

ALAN R. SWEEZY PRIZE IN ECONOMICS

Awarded to a senior who has shown unusual interest in and talent for economics.

1997 Hee Kim
CIT ALMA MATER
by Manton Barnes (BS '21 EE)

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, Parsons-Gates Hall of Administration, and Beckman Auditorium.
- FIRST AID SERVICES are available at the Information Center.
- LOST AND FOUND items may be reported and/or claimed at the Information Center.
- Complimentary COFFEE and PUNCH (beginning at 8:30 a.m.).
- Informal cap and gown photographs 8:30 a.m.–9:30 a.m.
- CALTECH BOOKSTORE sells souvenirs, film, and other items. ATHENAEUM luncheon tickets on sale 8 a.m.–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 in the Parsons-Gates Hall of Administration.
- AMPLIFIED TELEPHONE is available in Beckman Auditorium.