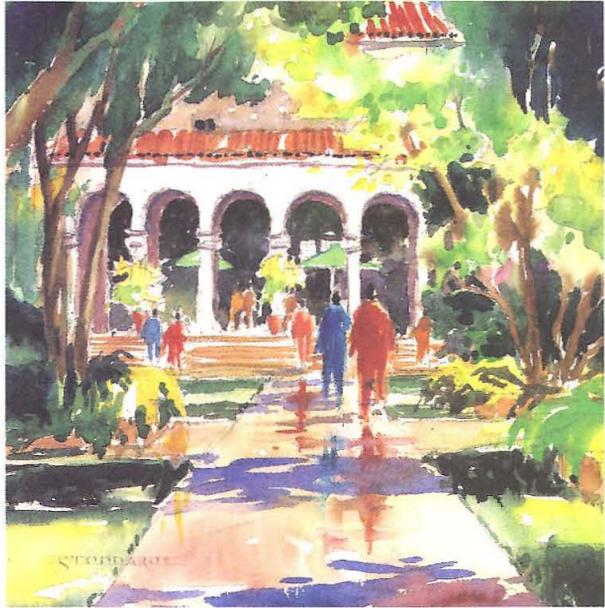


CALIFORNIA INSTITUTE *of* TECHNOLOGY



*One Hundred and Third
Annual Commencement*

June 13, 1997

Cover illustration of Caltech's Olive Walk
by Joseph Stoddard

This program is produced by the Public Relations Office.

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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 flulike 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 MacCreedy 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 *Serowe, 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* *Korbel, California* Electrical Engineering
James Henry Dooley IV *Federal Way, Washington* Engineering and Applied Science
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 Elijovich *Emerson, New Jersey* Mathematics
Nelson Richard Escobar *San Jose, California* Engineering and Applied Science
Jarah Markar Evslin* *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 Gavriiliu *Bucharest, Romania* Mathematics
Eleftherios 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 Khakham *Los Angeles, California* Applied Mathematics
Kenneth Andrew Kharma *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 *Schererville, 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

BACHELOR OF SCIENCE — *Continued*

Morrison Ray Lucas *Charhassen, 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
Damien Raphael Sullivan *Chicago, Illinois* Planetary Science
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-I 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.
- Srinivas Mandayam Aji (*Electrical Engineering*) B.Tech., Indian Institute of Technology, Madras 1995.
- 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.
- Andrew Curtis Berkun (*Electrical Engineering*) B.S., Rensselaer Polytechnic Institute 1989.
- Peter David Bogdanoff (*Materials Science*) B.S., Harvey Mudd College 1994.
- Sven Cecile Rene Bossuyt (*Applied Physics*) Kandidaat Burgerlijk Ingenieur, Vrije Universiteit Brussel 1992; Burgerlijk Materiaalkundig Ingenieur, 1995.
- Eric Noboru Burcsu (*Aeronautics*) B.S., North Carolina State University 1996.
- Tara Lee Butterfield (*Social Science*) B.A., University of California, Berkeley 1990.
- John Gerard Carri (*Physics*) B.Sc., St. Xavier College 1986; M.Sc., Indian Institute of Technology, Delhi 1989.
- 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.
- Xiao-chang Cheng (*Applied Physics*) B.Sc. (*Engineering Physics*), University of Alberta 1992; B.Sc. (*Honors Physics*), 1993.
- Kai-En Chiang (*Electrical Engineering*) B.S., National Taiwan University 1995.
- Sandra Ann Chin (*Biology*) B.S., University of Oregon 1995.
- Laurent Chognard (*Electrical Engineering*) Diplôme d'Ingenieur, École Nationale Supérieure d'Arts et Métiers 1996.
- 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.
- Jay Harris Dritz (*Chemistry*) A.B., Harvard College 1995.
- 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.
- Philip Malcolm Fine (*Environmental Engineering Science*) B.S., University of California, Berkeley 1993.

MASTER OF SCIENCE — *Continued*

- David Roger Foss (*Chemical Engineering*) B.S., Rensselaer Polytechnic Institute 1994.
- Lee Adam Friedman (*Chemistry*) B.A., The Johns Hopkins University 1994.
- Martha Anne Gallivan (*Mechanical Engineering*) B.S., University of Illinois at Urbana-Champaign 1996.
- Jack Steven Geilfuss (*Chemical Engineering*) B.S., Cornell University 1995.
- Aidyl Sofia Gonzalez-Serricchio (*Biology*) B.S., Rensselaer Polytechnic Institute 1993.
- Alvaro Sergio González Staffa (*Social Science*) B.A., University of Washington 1988; M.C.P., Massachusetts Institute of Technology 1991.
- Julia S. Goreva (*Geochemistry*) B.Sc., Moscow State University 1993.
- Robert John Griffin (*Chemical Engineering*) B.S., Tufts University 1993.
- Lila Miriam Guterman (*Chemistry*) B.A., Harvard College 1995.
- 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.
- Hirutaka Hara (*Electrical Engineering*) B.S., University of Tokyo 1987.
- Jeanne L. Hardebeck (*Geophysics*) A.B., Cornell University 1993.
- 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.
- Gretchen Anne Kalsow (*Social Science*) B.A., Luther College 1981; M.M., Northwestern University 1992.
- Hyejin Kang (*Biology*) B.A., Seoul National University 1992.
- 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.
- Zhiwen Liu (*Electrical Engineering*) B.S., Beijing University 1992; M.S., 1995.
- Julio Danin Lobo (*Chemical Engineering*) B.S., University of Massachusetts at Amherst 1995.
- Lin Ma (*Mechanical Engineering*) B.S., Beijing University 1996.
- Neelesh B. Mehta (*Electrical Engineering*) B.Tech., Indian Institute of Technology, Madras 1996.
- Murat Mese (*Electrical Engineering*) B.S., Bilkent University 1996.
- Abner Joshua Mintz (*Chemistry*) B.S. (*Chemistry*), B.S. (*Physics*), The Pennsylvania State University 1992.
- Jean-Francois Roland Molinari (*Aeronautics*) Ingenieur, Université de Technologie de Compiègne 1996.

MASTER OF SCIENCE — *Continued*

- Christophe Moser (*Electrical Engineering*) B.S., Swiss Institute of Technology 1993.
- Thomas Williams Murphy, Jr. (*Astronomy*) B.S., Georgia Institute of Technology 1993.
- Cory Matthew Nelson (*Chemistry*) B.A., Hamline University 1994.
- Mika Nyström (*Computer Science*) S.B., Massachusetts Institute of Technology 1994.
- Kyongkun Oh (*Physics*) B.A., Northwestern University 1993.
- Gregory Stewart Okin (*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.
- Clinton Sangkyu Park (*Applied Physics*) B.S., California Institute of Technology 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.
- Marcus David Daniel Riedel (*Electrical Engineering*) B.E., McGill University 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.
- Kirill Vadim Shcheglov (*Applied Physics*) B.S., California Institute of Technology 1992.
- Lori Ann Singer (*Chemistry*) S.B., Massachusetts Institute of Technology 1993.
- Gregory Joseph Steckman (*Electrical Engineering*) B.S., University of California, San Diego 1995.
- 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.
- Srinivasaraghavan T. (*Chemical Engineering*) B.Tech., Indian Institute of Technology, Madras 1994.
- Russell E. Todres (*Applied Mechanics*) B.S., University of Illinois at Urbana-Champaign 1993; M.S., 1994.
- Xiao Lin Tong (*Applied Physics*) B.S., Wuhan University of Technology 1984.
- Cecilia Wai-Kam Tse (*Chemical Engineering*) B.Sc., University of Calgary 1988; M.Sc., 1993.

MASTER OF SCIENCE — *Continued*

- 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.
John Strawn Ward (*Physics*) B.S., Principia College 1993.
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.
Chengxiang Yu (*Aeronautics*) B.E., Beijing University of Aeronautics and Astronautics 1994.
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 Zuhail (*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.
Javier González González (*Aeronautics*) B.A., B.S., Boston University 1994.
Galen Gerald Gornowicz (*Aeronautics*) B.S.E., The University of Michigan 1993.
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

- Hyeyjin Kang (*Cellular and Molecular Neurobiology*) B.A., Seoul National University 1992;
M.S., California Institute of Technology 1997.
Thesis: Modulation of Synaptic Function by Neurotrophic Factors in the Adult Hippocampus.
- Robert P. Lane, Jr. (*Molecular Biology and Biochemistry*) B.A., Colgate University 1986.
Thesis: Evolution of the Neural Immunoglobulin Supergene Family and Functional Studies of One of its Members.
- James William Lewis (*Integrative Neurobiology*) B.S., The Pennsylvania State University 1989.
Thesis: The Intraparietal Sulcus of the Macaque and Connected Cortical Regions: Anatomical Parcellation and Connections Throughout the Hemisphere.
- Frank Miskevich (*Molecular Biology and Biochemistry*) B.S., Eckerd College 1990.
Thesis: Expression, Characterization, and Ligand Studies Involving Domains of the Chick Cell Surface Protein Neogenin.
- Mark Paul Running (*Biology*) B.A., Pomona College 1990.
Thesis: Molecular Genetics of Floral Patterning in *Arabidopsis thaliana*.
- Nirao Mahesh Shah (*Biology*) M.B., B.S., Seth G. S. Medical College 1992; M.S., California Institute of Technology 1996.
Thesis: Mechanisms of Cell Fate Determination and Differentiation in the Mammalian Neural Crest.
- Martin Bernard Stemmler (*Computation and Neural Systems*) B.A., The Johns Hopkins University 1991.
Thesis: Information Maximization and Stochastic Resonance in Single Neurons.
- Giuseppe D. Tocchini-Valentini (*Biochemistry*) Laurea, Università di Roma 1988.
Thesis: *E. coli* tRNA Leucine Identity and Recognition Sets.
- Kellie Lynn Whittaker (*Developmental Biology and Molecular Biology and Biochemistry*) B.A., The Pennsylvania State University 1980; M.A., 1982.
Thesis: RNA Localization in *Drosophila* Oogenesis and Early Embryogenesis.
- Katherine Woo (*Developmental Biology and Cellular and Molecular Neurobiology*) B.A., Cornell University 1990; M.Eng., 1991.
Thesis: Pattern Formation in the Central Nervous System of the Zebrafish (*Danio rerio*).
- 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.

DOCTOR OF PHILOSOPHY — *Continued*

DIVISION OF CHEMISTRY AND CHEMICAL ENGINEERING

- Michelle R. Arkin (*Chemistry*) B.A., Bryn Mawr College 1990.
Thesis: Investigations of DNA-mediated Electron Transfer Reactions with Metallointercalators.
- Ashish Bansal (*Chemistry*) M.Sc., Indian Institute of Technology, Kanpur 1990.
Thesis: Surface Modification and Charge Transfer Studies at Silicon and Gallium Arsenide Interfaces.
- Yvette Valencia Baxter-Drayton (*Chemical Engineering*) S.B., Massachusetts Institute of Technology 1991; M.S., California Institute of Technology 1994.
Thesis: The Dynamics of Flocculated Dispersions.
- Frank Morales Bowman (*Chemical Engineering*) B.S., Brigham Young University 1991.
Thesis: Ozone and Secondary Organic Aerosol Formation from Organic Precursors.
- Paul Jonathan Carson (*Chemistry*) A.B., University of California, Berkeley 1987.
Thesis: I. Ultrasensitive Surface NMR Using Parahydrogen Spin Labeling.
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.
Thesis: Transformation of Alkylated Pseudoephedrine Amides to Highly Enantiomerically Enriched Carboxylic Acids and Ketones.
- William Beach Connick (*Chemistry*) B.A., Williams College 1988; B.A., Cambridge University 1990.
Thesis: Structure, Spectroscopy and Photochemistry of Platinum(II) Diimine Complexes.
- Kevin Christopher Crellin (*Chemistry*) B.S., University of Utah 1991.
Thesis: The Investigation of Gas-Phase Ion-Molecule Reactions with Fourier Transform Ion Cyclotron Resonance Mass Spectrometry.
- Paul Jeffrey Drayton (*Chemical Engineering and Materials Science*) B.E., University of Canterbury 1990; M.S., California Institute of Technology 1994.
Thesis: Experimental and Theoretical Studies of Aerosol Agglomerates.
- Justin Du Bois (*Chemistry*) B.S., University of California, Berkeley 1992.
Thesis: Part I. Enantioselective Synthesis of (+)-Zaragozic Acid C.
Part II. Nitridomanganese(V) Complexes: Design, Preparation, and Use as Novel Nitrogen Atom-Transfer Reagents.
- Neil Edward Fernandes (*Chemical Engineering*) B.E., University of Canterbury 1991; M.S., California Institute of Technology 1994.
Thesis: Diffusion in Mesoporous Glass: Simulations and Experiments.
- Marlys Hammond (*Chemistry*) B.A., Lake Forest College 1987; M.S., The University of Kansas 1990.
Thesis: Enantioselective Synthesis of Neocarzinostatin Chromophore Aglycone.

DOCTOR OF PHILOSOPHY — *Continued*

- Vassilios Hatzimanikatis (*Chemical Engineering*) Diploma, University of Patras 1991; M.S., California Institute of Technology 1994.
Thesis: Analysis and Design of Metabolic Reaction Networks.
- Timothy Allan Herzog (*Chemistry*) B.S., Gonzaga University 1990.
Thesis: Deuterium Isotope Effects as Evidence for α -Agostic Assistance in Ziegler-Natta Catalysts. Design, Synthesis, and Reactivity of a New Class of Highly Syndiospecific, Ziegler-Natta, Olefin Polymerization Catalysts.
- Timothy Wilmot Johann (*Chemistry*) B.A., Hamline University 1991.
Thesis: Sequence-specific Inhibition of DNA Polymerase by Phenanthrene Quinone Diimine Complexes of Rhodium(III).
- Christopher Neil Kenyon (*Chemistry*) A.B., Princeton University 1990.
Thesis: Time-Resolved and Steady-State Investigations of Carrier Dynamics at the Semiconductor/Liquid Interface.
- Janet M. Kesselman (*Chemistry*) B.A., University of California, San Diego 1991.
Thesis: Fundamental Photoelectrochemical Properties of TiO_2 /Water Interfaces: Relevance for Hazardous Waste Remediation.
- Shervin Khodabandeh (*Chemical Engineering and Chemistry*) B.S., University of California, Los Angeles 1993; M.S., California Institute of Technology 1995.
Thesis: Synthesis of Alkaline-Earth Zeolites.
- Andrew F. Kiely (*Chemistry*) S.B., Massachusetts Institute of Technology 1990.
Thesis: Pentamethylcyclopentadienyl Aminoborole Complexes of Hafnium.
- 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.
Thesis: The Molecular Recognition of DNA by Rhodium(III)-Zinc Finger Peptide Chimeras.
- Donald Low (*Chemistry*) A.B., University of California, Berkeley 1990.
Thesis: Spectroscopy and Chemistry of Microperoxidases.
- Ji-Ye Luo (*Chemistry and Biology*) B.Sc., University of Science and Technology of China 1989; M.A., Princeton University 1992.
Thesis: Stability and Dynamics Studies of Apo-azurin from *Pseudomonas aeruginosa*.
- Richard Beatty McClurg (*Chemical Engineering and Materials Science*) B.S., Northwestern University 1992.
Thesis: Homogeneous Nucleation Theory.
- Timothy M. McPhillips (*Chemistry*) B.S., California State University, Northridge 1991.
Thesis: X-Ray Crystallographic Studies of the R65Q Mutant of Yeast Phosphoglycerate Kinase.

DOCTOR OF PHILOSOPHY — *Continued*

- Sandro Mecozzi (*Chemistry*) Laurea, Università degli Studi di Roma 1988.
Thesis: Electrostatic Forces in Aqueous Media and the Nature of the Cation- π Interaction.
- Aseem Mehta (*Chemistry*) B.S. (*Chemistry*), B.S. (*Mathematics of Computation*), University of California, Los Angeles 1991.
Thesis: New Methods for the Study of Intramolecular and Solvent Dynamics.
- 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.
- Leonard John Mueller (*Chemistry*) B.S., The University of Rochester 1988; Certificate of Postgraduate Study, University of Cambridge 1989.
Thesis: Chemical Exchange in Nuclear Magnetic Resonance.
- Michael Mark Murray (*Chemistry*) B.Sc., University College Cork 1990.
Thesis: Synthesis and Characterization of High-Spin Organic Materials: Prototypes for the Polaronic Ferromagnet.
- 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 Monooxygenase from *Methylococcus capsulatus* (Bath) and Methane Activation from a Biological Perspective.
- Daniel W. Pack (*Chemical Engineering*) B.S., University of Illinois at Urbana-Champaign 1990.
Thesis: Protein Targeting to Metal-Chelating Lipid Monolayers: Toward New Materials Inspired by Nature.
- 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.
Thesis: Spectroscopic Studies of the Gas Phase Complexes Benzene-Ammonia, Sodium-Water, and Sodium-Ammonia.
- Jamie L. Schlessman (*Chemistry*) B.S., Albright College 1990.
Thesis: Crystal Structure of *Azotobacter vinelandii* Nitrogenase Iron Protein at 2.2 Å Resolution.
- Robert Alan Singer (*Chemistry*) B.A., Northwestern University 1992.
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.
Thesis: Mechanistic Studies of Alkane Activation by Platinum(II) Complexes.
- Michael H. B. Stowell (*Chemistry*) B.A., Reed College 1989.
Thesis: Ekmageion.
- Bao-Liang Tsai (*Chemistry*) B.S., National Taiwan University 1986.
Thesis: First Principles Studies of Semiconductor Epitaxial Growth.

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.

Thesis: Performance Monitoring and Fault Detection in Control Systems.

Eyde 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: Preparation of Zeolite ZSM-5 Membranes.

Bryant H. Yang (*Chemistry*) B.A., University of California, San Diego 1991.

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*),
B.S. (*Applied Mathematics*), Polytechnic University 1992; M.S., California Institute of
Technology 1993.

Thesis: Enthalpy Effects on Hypervelocity Boundary Layers.

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.,
California Institute of Technology 1994.

Thesis: Viscosity Measurements of Bulk Metallic Glass Forming Alloys.

Anatoly I. Baumstein (*Applied Mathematics*) Diploma, Moscow Aviation Institute 1991.

Thesis: Nonlinear Water Waves with Shear.

Carolyn Louise Beck (*Electrical Engineering*) B.S., California State Polytechnic University,
Pomona 1984; M.S., Carnegie Mellon University 1985.

Thesis: Model Reduction and Minimality for Uncertain Systems.

Robert Louis Behnken (*Mechanical Engineering*) B.S. (*Mechanical Engineering*), B.S.
(*Physics*), Washington University 1992; M.S., California Institute of Technology
1993.

Thesis: Nonlinear Control and Modeling of Rotating Stall in an Axial Flow
Compressor.

Kwabena Adu Boahen (*Computation and Neural Systems*) B.S.E., M.S.E., The Johns
Hopkins University 1989.

Thesis: Retinomorphc Vision Systems: Reverse Engineering the Vertebrate Retina.

Michael C. Burl (*Electrical Engineering*) B.S., California Institute of Technology 1987;
M.S., 1992.

Thesis: Recognition of Visual Object Classes.

DOCTOR OF PHILOSOPHY — *Continued*

- Dale L. Capewell (*Applied Physics*) B.S., Cornell University 1986; M.S., California Institute of Technology 1992.
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.
Thesis: Optimal Design of Building Structures Using Genetic Algorithms.
- Jung-Fu Cheng (*Electrical Engineering and Social Science*) B.S., National Taiwan University 1991; M.S., California Institute of Technology 1994.
Thesis: Iterative Decoding.
- Raffaello D'Andrea (*Electrical Engineering*) B.A.Sc., University of Toronto 1991; M.S., California Institute of Technology 1992.
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.
Thesis: Measurement of the Dynamic Bulk Compliance of Polymers.
- Christopher J. Diorio (*Electrical Engineering*) B.A., Occidental College 1983; M.S., California Institute of Technology 1984.
Thesis: Neurally Inspired Silicon Learning: From Synapse Transistors to Learning Arrays.
- Jean-Jacques P. Drolet (*Electrical Engineering*) B.Sc.A., Université Laval 1990; M.S., California Institute of Technology 1992.
Thesis: Optoelectronic Devices for Information Storage and Processing.
- Jing Feng (*Applied Physics*) B.S., Beijing University 1986; M.S., Nanjing University 1989.
Thesis: Frequency Chirp and Spectral Dynamics in Semiconductor Lasers.
- 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.
- David Francis Geraghty (*Applied Physics*) B.S., California Institute of Technology 1991; M.S., 1994.
Thesis: Investigation of Wavelength Conversion by Four-Wave Mixing in Semiconductor Optical Amplifiers.
- 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.
- Vidyabhusan Gupta (*Electrical Engineering*) B.S., University of California, Berkeley 1989; M.S., California Institute of Technology 1991.
Thesis: Analog VLSI for Active Drag Reduction.
- Michael P. Hannigan (*Environmental Engineering Science and Geology*) B.S., Southern Methodist University 1990; M.S., California Institute of Technology 1991.
Thesis: Mutagenic Particulate Matter in Air Pollutant Source Emissions and in Ambient Air.
- David John Haroldsen (*Applied Mathematics*) B.A., B.S., Utah State University 1992.
Thesis: The Numerical Calculation of Three-Dimensional Water Waves Using a Boundary Integral Method.

DOCTOR OF PHILOSOPHY — *Continued*

- Paul Edward Hasler (*Computation and Neural Systems*) B.S.E., M.S. (*Electrical Engineering*), Arizona State University 1991; M.S. (*Mathematics*), 1992.
Thesis: Foundations of Learning in Analog VLSI.
- Jon Nestor Hodowany (*Aeronautics*) B.S., University of California, San Diego 1992; M.S., California Institute of Technology 1993.
Thesis: On the Conversion of Plastic Work into Heat.
- Timothy Ken Horiuchi (*Computation and Neural Systems*) B.S., California Institute of Technology 1989; M.S., University of Southern California 1991.
Thesis: Analog VLSI-Based, Neuromorphic Sensorimotor Systems: Modeling the Primate Oculomotor System.
- Karen Rae Jonscher (*Applied Physics*) B.S., University of Colorado at Boulder 1989; M.S., California Institute of Technology 1991.
Thesis: Quadrupole Ion Trap Mass Spectrometry of Peptides.
- Michael James Kantner (*Electrical Engineering and Computer Science*) B.S., Rensselaer Polytechnic Institute 1992; M.S., California Institute of Technology 1993.
Thesis: Robust Simulation and Analysis of Nonlinear Systems.
- Rajesh Kedia (*Mechanical Engineering*) B.Tech., Indian Institute of Technology, Kharagpur 1991; M.S., California Institute of Technology 1992.
Thesis: An Investigation of Velocity and Temperature Fields in Taylor-Couette Flows.
- James Christopher Krok (*Aeronautics and Geology*) B.S., State University of New York at Buffalo 1990; M.S., Rensselaer Polytechnic Institute 1992.
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: Analysis of Single Phase Rectifier Circuits.
- Robert Bumju Lee (*Applied Physics*) B.S., California Institute of Technology 1992; M.S., 1994.
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.
- Xianghong Lin (*Applied Physics*) B.S., University of Science and Technology of China 1988; M.S., 1991; M.S., California Institute of Technology 1994.
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.
Thesis: Neuromorphic Models of Visual and Motion Processing in the Fly Visual System.

DOCTOR OF PHILOSOPHY — *Continued*

- Hongbing Lu (*Aeronautics*) B.S., University of Science and Technology of China 1986; M.S., Tsinghua University 1988.
Thesis: Nonlinear Thermo-mechanical Behavior of Polymers under Multiaxial Loading.
- William K. Marshall (*Applied Physics*) B.S., California Institute of Technology 1981; M.S., 1989; M.S., University of California, Berkeley 1982.
Thesis: Dynamics of Amplitude and Phase in Semiconductor Lasers and Effects of Propagation in Dispersive Optical Fibers.
- Daniel Maskit (*Computer Science and History*) B.A., Sarah Lawrence College 1988; M.S., California Institute of Technology 1994.
Thesis: Software Register Synchronization for Super-Scalar Processors with Partitioned Register Files.
- M. Susan Melnik (*Applied Physics*) B.S., Case Western Reserve University 1986; M.S., California Institute of Technology 1988.
Thesis: Diamond Surfaces: Interactions with Hydrogen and Halogens.
- Zhaoyue Meng (*Environmental Engineering Science*) B.S., Beijing University 1986; M.S., University of California, Los Angeles 1991.
Thesis: Thermodynamic and Dynamic Modeling of Atmospheric Aerosols.
- Raanan A. Miller (*Electrical Engineering*) B.S., Boston University 1991; M.S., California Institute of Technology 1992.
Thesis: Microfabricated Electromagnetic Flap Actuators and Their Applications.
- Bradley Arthur Minch (*Computation and Neural Systems*) B.S., Cornell University 1991.
Thesis: Analysis, Synthesis, and Implementation of Networks of Multiple-Input Translinear Elements.
- Alina Moussessian (*Electrical Engineering*) B.S., Iran University of Science and Technology 1988; M.S., California Institute of Technology 1992.
Thesis: Quasi-Optical Active Antennas.
- Laura Jeanne Nagel (*Materials Science*) B.S., Rice University 1991; M.S., California Institute of Technology 1994.
Thesis: Vibrational Entropy Differences in Materials.
- Venkata Varadha Rajan Natarajan (*Mechanical Engineering*) B.Tech., Indian Institute of Technology, Delhi 1991; M.S., California Institute of Technology 1992.
Thesis: Material and Thermal Transport in Vertical Granular Flows.
- Flavio Noca (*Aeronautics and Astronomy*) B.S., California Institute of Technology 1988; M.S., 1989.
Thesis: On the Evaluation of Time-Dependent Fluid-Dynamic Forces on Bluff Bodies.
- Aaron Ian Packman (*Environmental Engineering Science and Geology*) B.S., Washington University 1991; M.S., California Institute of Technology 1992.
Thesis: Exchange of Colloidal Kaolinite between Stream and Sand Bed in a Laboratory Flume.
- Michael Edward Palmer (*Computer Science*) B.S., Yale College 1991; M.S., California Institute of Technology 1994.
Thesis: Exploiting Parallel Memory Hierarchies for Ray Casting Volumes.

DOCTOR OF PHILOSOPHY — *Continued*

- Miltiadis Vassilios Papalexandris (*Aeronautics and Applied Mathematics*) Diploma, National Technical University of Athens 1991; M.S., California Institute of Technology 1993.
Thesis: Unsplit Numerical Schemes for Hyperbolic Systems of Conservation Laws with Source Terms.
- Susan Catherine Paulsen (*Environmental Engineering Science and German Language and Literature*) B.S., Stanford University 1991; M.S., California Institute of Technology 1993.
Thesis: A Study of the Mixing of Natural Flows Using ICP-MS and the Elemental Composition of Waters.
- Nicola Joy Peill (*Environmental Engineering Science*) B.E., Manhattan College 1987; M.S., California Institute of Technology 1993.
Thesis: Fiber-Optic Bundled Array Cable Reactors for Heterogeneous Photocatalysis and Waste Stream Remediation.
- Aurelius Prochazka (*Aeronautics and Economics*) B.S., Rensselaer Polytechnic Institute 1991; M.S., California Institute of Technology 1992.
Thesis: Stability and Structure of Stretched Vortices.
- Allen Pu (*Electrical Engineering*) B.E., The Cooper Union 1992; M.S., California Institute of Technology 1993.
Thesis: Holographic 3-D Disks and Optical Correlators Using Photopolymer Materials.
- Muruhan Rathinam (*Applied Mathematics*) B.E., University of New South Wales 1987.
Thesis: Differentially Flat Nonlinear Control Systems.
- Moir Ellen Regelson (*Applied Mathematics*) B.A., Barnard College 1990.
Thesis: Protein Structure/Function Classification Using Hidden Markov Models.
- Garrett Erin Reisman (*Mechanical Engineering*) B.S.E., B.S., University of Pennsylvania 1991; M.S., California Institute of Technology 1992.
Thesis: Dynamics, Acoustics and Control of Cloud Cavitation on Hydrofoils.
- Boaz Salik (*Electrical Engineering*) B.S., University of Arizona 1993; M.S., California Institute of Technology 1994.
Thesis: Spatio-temporal Beam Synthesis and Applications to Photolithography.
- 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.
- Kirill V. Shcheglov (*Applied Physics*) B.S., California Institute of Technology 1992; M.S., 1997.
Thesis: Synthesis, Optical, and Electronic Properties of Group IV Semiconductor Nanocrystals.
- Ronald Lyn Siefert (*Environmental Engineering Science and Geology*) B.Ch.E., University of Minnesota 1990; M.S., California Institute of Technology 1991.
Thesis: Speciation of Fe in Ambient Aerosol and Cloudwater.

DOCTOR OF PHILOSOPHY — *Continued*

- Joseph Michael Sivo (*Mechanical Engineering*) B.E., The Cooper Union 1987; M.S., California Institute of Technology 1988.
Thesis: Rotordynamic Forces Due to Annular Leakage Flows in Shrouded Centrifugal Pumps.
- Sudipto Sur (*Mechanical Engineering*) B.Tech., Indian Institute of Technology, Bombay 1991; M.S., California Institute of Technology 1992.
Thesis: Robotic Manipulation with Flexible Link Fingers.
- Sergio Ricardo Turteltaub (*Applied Mechanics*) B.S., Simón Bolívar University 1989; M.S., University of Houston 1992.
Thesis: Dynamics of Phase Transformations in Thermoelastic Solids.
- Michael William Vanik (*Applied Mechanics*) Sc.B., Brown University 1991; M.S., California Institute of Technology 1992.
Thesis: A Bayesian Probabilistic Approach to Structural Health Monitoring.
- Michiel Jacques Van Nieuwstadt (*Mechanical Engineering*) B.S., Universiteit Twente 1990; M.S., 1991.
Thesis: Trajectory Generation for Nonlinear Control Systems.
- LuoJia Wang (*Civil Engineering*) B.S., Dalian University of Technology 1991; M.S., Old Dominion University 1993.
Thesis: Active Interaction Control for Civil Structures.
- Amy E. Warncke (*Aeronautics and Environmental Engineering Science*) B.S., Michigan State University 1993; M.S., California Institute of Technology 1994.
Thesis: The Effects of Surfactants on Free-Surface Flows.
- Carl R. Wassgren, Jr. (*Mechanical Engineering*) B.S., University of Illinois at Urbana-Champaign 1990; M.S., California Institute of Technology 1992.
Thesis: Vibration of Granular Materials.
- Philip Watts (*Environmental Engineering Science*) B.E., McGill University 1991; M.E., 1992.
Thesis: Water Waves Generated by Underwater Landslides.
- Yuanjian Xu (*Applied Physics*) B.S., Chengdu Institute of Radio Engineering 1985; M.S., Shanghai Jiao Tong University 1987; M.S., California Institute of Technology 1992.
Thesis: Quantum Well Intersubband Transition Detection and Modulation.
- Chih M. Yang (*Materials Science*) B.S., M.S., California Institute of Technology 1990.
Thesis: Manipulation of Si and Ge Crystallization.
- Zhong Yu (*Electrical Engineering*) B.S., Nanjing Institute of Posts and Telecommunications 1983; M.S., University of Hawaii at Manoa 1992.
Thesis: Design Issues in Communications Networks: Reliability and Traffic Analysis.

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.

Thesis: A Thermodynamic Model of Adiabatic Melting of the Mantle.

Albert Frank Christian Haldemann (*Planetary Science and Geology*) Diplôme de Physicien, Université de Neuchâtel 1991; M.S., California Institute of Technology 1994.

Thesis: Interpreting Radar Scattering: Circular-polarization Perspectives from Three Terrestrial Planets.

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

Thesis: The Role of Water in the Magmatic and Tectonic Evolution of Metamorphic Core Complexes: A Stable Isotope Study of the Southern Omineca Crystalline Belt, British Columbia, Canada.

John William Holt (*Geology*) B.S., Rice University 1988; M.S., California Institute of Technology 1993.

Thesis: I. Detailed Records of Geomagnetic Field Behavior from Death Valley and Hawaii. II. An Age Constraint on Gulf of California Rifting from Santa Rosalía, Baja California.

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

Thesis: An Oxygen Isotopic Study of Soil Water and Pedogenic Clays in Hawaii.

Yibo Jiang (*Planetary Science and Applied Mathematics*) B.S., University of Science and Technology of China 1986; M.S., 1989; M.S., New Jersey Institute of Technology 1991.

Thesis: Decadal Evolution of Atmospheric Ozone and Remote Sensing of Tropospheric Ozone.

E. Robert Kursinski (*Planetary Science and Geophysics*) B.A., Haverford College 1978; M.S., University of Southern California 1991.

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

Elizabeth Ann Nagy (*Geology*) B.A., University of Colorado 1989; M.S., California Institute of Technology 1991.

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.

Thesis: High Resolution Modeling of Regional Phases.

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.

Thesis: Millimeter Interferometric Polarimetry of Magnetic Field Structure in Protostellar Condensations.

David Alan Beam (*Physics*) B.S., United States Naval Academy 1979; M.S., Stanford University 1980.

Thesis: Experimental Studies of the Anomalous Sign Reversal in the Vortex-State Hall Conductivity of $\text{YBa}_2\text{Cu}_3\text{O}_7$.

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.

Richard Alan Boyd (*Physics*) B.S., Emory University 1990; M.S., California Institute of Technology 1992.

Thesis: A Cryogenic Trap for Neutral Atoms.

Kent B. Bradford (*Physics*) B.S., Colorado School of Mines 1991; M.S., California Institute of Technology 1993.

Thesis: Aspects of Non-Abelian Many Body Physics.

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: Parallel Computing and the *IRAS* Galaxy Atlas.

John Kenneth Elwood (*Physics*) B.A., Cornell University 1991; M.S., California Institute of Technology 1993.

Thesis: Effective Field Theories in the Study of $K_L \rightarrow \pi^+\pi^-e^+e^-$ and Heavy Quark Fragmentation.

Daniel Eric Gottesman (*Physics*) A.B., Harvard College 1992.

Thesis: Stabilizer Codes and Quantum Error Correction.

DOCTOR OF PHILOSOPHY — *Continued*

- John Walter Hartman (*Physics*) B.S., The University of Texas at Austin 1991; M.S., California Institute of Technology 1993.
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.
Thesis: Novel Group IV Alloy Semiconductor Materials.
- Todd Russell Hunter (*Astronomy*) B.S., The Pennsylvania State University 1991; M.S., California Institute of Technology 1993.
Thesis: A Submillimeter Imaging Survey of Ultracompact HII Regions.
- Anton N. Kapustin (*Physics*) Diploma, Moscow State University 1993.
Thesis: Topics in Heavy Quark Physics.
- Daniel John Kennefick (*Physics and Science, Ethics, and Society*) B.Sc., University College Cork 1987; M.Sc., 1989; M.S., California Institute of Technology 1991.
Thesis: Radiation Reaction in Binary Systems in General Relativity.
- 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.
- Robert A. Knop, Jr. (*Physics*) B.S., Harvey Mudd College 1990; M.S., California Institute of Technology 1992.
Thesis: Spatially Resolved Infrared Spectroscopy of Seyfert Galaxies.
- Allan Wayne Labrador (*Physics*) B.S., Stanford University 1989.
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.
- Torrey Teatsorth Lyons (*Physics*) B.A., University of California, Berkeley 1989; M.S., California Institute of Technology 1992.
Thesis: An Optically Recombined Laser Interferometer for Gravitational Wave Detection.
- Bryon Alan Mueller (*Physics*) B.S., University of Minnesota 1989; M.S., California Institute of Technology 1991.
Thesis: Measurement of the Strange Quark Contribution to the Magnetic Moment of the Proton.
- Jaemo Park (*Physics*) B.Sc., Seoul National University 1988; M.Sc., 1990.
Thesis: Aspects of String Dualities—Orientifolds, F-theory and Super D-branes & the M5-brane.
- 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.
Thesis: I. Reactively Sputtered Ti-Si-N Thin Films for Diffusion Barrier Applications.
II. Oxidation, Diffusion and Crystallization of an Amorphous $Zr_{50}Al_{15}Ni_{25}$ Alloy.
- Quentin A. Turchette (*Physics*) S.B., Massachusetts Institute of Technology 1991; M.S., California Institute of Technology 1993.
Thesis: Quantum Optics with Single Atoms and Single Photons.
- Christopher W. Walter (*Physics*) B.A., University of California, Santa Cruz 1989; M.S., California Institute of Technology 1991.
Thesis: A Search for Lightly Ionizing Particles with the MACRO Detector.
- Phil A. Willems (*Physics*) B.S., University of Wisconsin-Madison 1988.
Thesis: Studies of Magneto-Optically and Magnetostatically Trapped Cesium in a Cryogenic Vacuum Apparatus.
- Haiyun Zhang (*Physics*) B.S., Beijing University 1991; M.S., California Institute of Technology 1992.
Thesis: Structure-Function Studies of the Muscle Nicotinic Acetylcholine Receptor by Site-Directed Mutagenesis in the Pore Region.
- 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.

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 Miller

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 Uy, 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

PRIZES AND AWARDS—*Continued*

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 Eovlin*

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

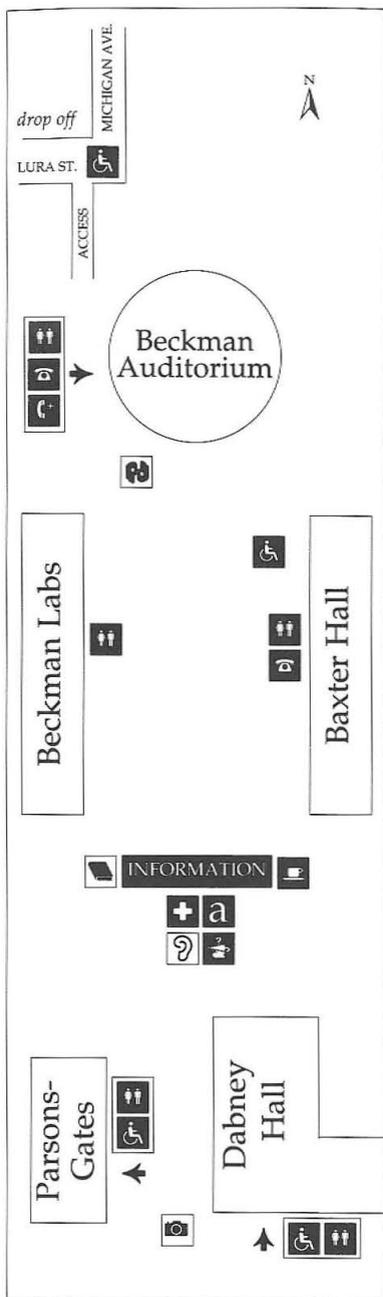
Awarded to a senior who has shown unusual interest in and talent for economics.

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.