Cover: Caltech's commencement ceremony,
by Joseph Stoddard. © 2001, California Institute of Technology

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CALIFORNIA INSTITUTE OF TECHNOLOGY

One Hundred and Seventh Annual Commencement

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

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

Throop might have remained just a good local school had it not been for the arrival in Pasadena of George Ellery Hale. A faculty member at the University of Chicago and a noted astronomer, Hale settled here in 1903. From that time until his death in 1938, he made significant contributions to Pasadena and Southern California: he established the Mount Wilson Observatory, raised funds for Palomar Observatory and its 200-inch telescope, participated in the creation of the Huntington Library and Art Gallery, helped design the Civic
Center in downtown Pasadena, and—perhaps his single greatest achievement—set the course for the development of Throop into the California Institute of Technology, a school he envisioned as a scientific institution of the highest rank.

In 1913, Hale convinced Arthur Amos Noyes, professor of chemistry and former president of the Massachusetts Institute of Technology, to join him in Pasadena. With the arrival in 1917 of Robert Andrews Millikan, professor of physics at the University of Chicago, Hale had assembled the founders of the new institution. The world center of scientific and engineering research and education he had imagined soon took shape under a new name, the California Institute of Technology, administered by Millikan and enriched with the scientific talents of Noyes and his faculty colleagues.

Caltech today has a 124-acre campus and operates seven 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 four Nobel laureates and four Crafoord laureates; and more than 200 research faculty members. Today, Caltech will award 204 students the B.S. degree; 120 students the M.S. degree; 1 scholar the degree of Engineer; and 159 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.

Please note:
Video footage of commencement may be viewed on the Caltech Web site at http://pr.caltech.edu/commencement/01/index.html. Broadcast is scheduled to begin after 3:00 p.m. and will be available throughout the year.
FORTY-SEVEN YEARS AGO, as a 25-year-old student, Gordon Moore stood among 69 other PhD candidates who were waiting to receive diplomas at Caltech’s graduation ceremony. When he addresses the candidates at this year’s commencement ceremony, he stands sans pareil at the summit of an extraordinary career.

A few years after graduating from Caltech, Moore cofounded Fairchild Semiconductor Corporation in Mountain View. He managed the corporation’s engineering department and later directed Fairchild’s research and development when the company produced the first commercial integrated circuit. Then, in 1968, he and a few of his colleagues at Fairchild decided to start a company focusing on large-scale integrated products. They typed a one-page business plan, received $2.5 million in venture capital in two days, and named the company Intel, short for “integrated electronics.”

Their first commercial product, the 3101 Schottky bipolar 64-bit static random access memory chip, was moderately successful, but when they designed a general-purpose logic chip that could be programmed to take instructions, they had hit their stride. This chip changed history by making programmable intelligence so cheap it could be embedded into household appliances and so powerful that people could have computers of their own. Within a decade, the microprocessor was hailed as one of the top inventions in the history of American technology, ranking with the invention of the light bulb, the telephone, and the airplane. (In 1974, Moore remarked of the chip’s impact,
"I'd like to think that we're the real revolutionaries in the world. Things are being revolutionized a lot more by electronics technology than by some political things going on.")

Moore was chief executive officer at Intel from 1975 to 1987, and is now chairman emeritus. He is widely known for "Moore's law," which he formulated in 1965. The law states that the number of transistors the industry would be able to place on a computer chip would double every year. Ten years later, he updated his prediction to once every two years. While originally intended as a rule of thumb, it has become the guiding principle for the industry, which continues to deliver ever more powerful semiconductor chips at proportionate decreases in cost.

Moore has been a Caltech trustee for 18 years, and served as chairman of the board from January 1994 to 2000. His generosity to the Institute has included the establishment of programs for visiting scholars, for fellowships, and for undergraduate scholarships; the funding of a professorship in engineering; and funding for the Gordon and Betty Moore Laboratory of Engineering.

Moore is a director of Varian Associates, Gilead Sciences Inc., and Transamerica Corporation. He is a member of the National Academy of Engineering, and a fellow of the Institute of Electrical and Electronics Engineers. In 1990, he received the National Medal of Technology from then-president George Bush.
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 super magisterial role—first of all in the higher faculties of theology, law, and medicine. It will come as no surprise that the lawyers had a particular and early yen for this special distinction.

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

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

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

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

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

*David C. Elliot*

*Professor of History, Emeritus*
ACADEMIC PROCESSION

Chief Marshal
Gary A. Lorden, Ph.D.

Marshals
Diana L. Barkan, Ph.D.
Barbara C. Green, Ph.D.
D. Roderick Kiewiet, Ph.D.
Christoph Koch, Ph.D.
Rudolph A. Marcus, Ph.D.
Jean-Paul Revel, Ph.D.

Faculty Officers
Kim C. Border, Ph.D.
Paul H. Patterson, 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
Faculty Officers
The Faculty
The Chairs of the Divisions
The Deans
The Provost
The Trustees
The Commencement Speaker
The President
The Chairman of the Board of Trustees
**Program**

**Organ Prelude**

Leslie J. Deutsch, Ph.D.

**Processional**

The Caltech Convocations Brass and Percussion Ensemble

*William Bing, M.M., Conductor*

**Presiding**

Benjamin M. Rosen

*Chairman of the Board of Trustees
California Institute of Technology*

**Commencement Speaker**

Gordon E. Moore, Ph.D.

*Chairman Emeritus, Intel Corporation;
Chairman of the Board of Trustees,
Emeritus
California Institute of Technology*

**Choral Selection**

The Caltech Glee Clubs

*Donald G. Caldwell, D.M.A.,
Conductor*

"Hallelujah," from *Messiah*

George Frideric Handel

**Conferring of Degrees**

David Baltimore, 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

Christopher E. Brennen, Ph.D.

*Vice President for Student Affairs*

For the Degree of Engineer

D. Roderick Kiewiet, Ph.D.

*Dean of Graduate Studies*

For the Degree of Doctor of Philosophy

Dr. Kiewiet

Biology

Elliot M. Meyerowitz, Ph.D.

*Division Chair*
Chemistry and Chemical Engineering  David A. Tirrell, Ph.D.  
*Division Chair*

Engineering and Applied Science  Richard M. Murray, Ph.D.  
*Division Chair*

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

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

Physics, Mathematics and Astronomy  Thomas A. Tombrello, Ph.D.  
*Division Chair*

**ANNOUNCEMENT OF AWARDS AND CONCLUDING REMARKS**

**ALMA MATER**

"Caltech Alma Mater"  
By Manton Barnes, BS '21 EE  
*(The audience may join in; lyrics are found on page 46.)*

**RECESSIONAL**

*Organ Postlude*

You are invited to attend a reception on the Athenaeum West Lawn following the program.
CANDIDATES FOR DEGREES

Bachelor Of Science

Orkun Akin* Istanbul, Turkey  Biology
Meredith Ann Alden Cincinnati, Ohio  Independent Studies Program
Ron Alterovitz* Rocky River, Ohio  Engineering and Applied Science
Abraham Kwabena Anumah Accra, Ghana  Electrical Engineering
David Christopher Antonio Dallas, Texas  Engineering and Applied Science
Mark Christian Arnesen* Bloomington, Minnesota  Physics
Jorge Eduardo Avelar Los Angeles, California  Chemistry
Boris Semyonovich Axelrod Eagan, Minnesota  Engineering and Applied Science
Kevin Robinson Babcock Sun Prairie, Wisconsin  Engineering and Applied Science
Onureena Banerjee* Palo Alto, California  Engineering and Applied Science
Christoph James Baranec Melbourne, Australia  Astronomy
Mark Orrin Barrett Vernon Hills, Illinois  Engineering and Applied Science (Mechanical Engineering)
Jeffrey Evan Barrick* Lubbock, Texas  Chemistry
Alexandra Baugher Idaho Falls, Idaho  Engineering and Applied Science
Philip Wesley Bell Atlanta, Georgia  Chemical Engineering
Samantha Robin Bench Whitefish, Montana  Engineering and Applied Science
Matthew Ryan Bergeron* Eagle Rock, California  Electrical Engineering
Stephen Michael Bird* Portage, Michigan  Engineering and Applied Science
Adam Peter Blake Riverside, Illinois  Physics
Florian Bohn* Flensburg, Germany  Electrical Engineering
Amanda Lynn Booth Anchorage, Alaska  Geochemistry
Jeremy Todd Boulton Eugene, Oregon  Engineering and Applied Science
Laura Anne Brogoh Vermilion, Ohio  Engineering and Applied Science
Alan Harold Brothers Dayton, Ohio  Engineering and Applied Science
Scott Samuel Woodruf Bruce Gilbert, South Carolina  Engineering and Applied Science
Carrie Lynn Bunce Pittsfield, Massachusetts  Engineering and Applied Science
Timothy Joseph Buschman North Potomac, Maryland  Biology
Augusto Daniel Callejas Miami, Florida  Engineering and Applied Science
Jason Custodio Cardema San Jose, California  Electrical Engineering
Scott Huai-Lei Carnahan* Niskayuna, New York  Mathematics
Deanna Marie Carrick Fort Mill, South Carolina  Biology
James A. Catherwood* Atlanta, Georgia  Chemical Engineering
Christopher Chung-Tien Chang Palo Alto, California  Mathematics

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

Jim Yu-Chen Chang  Yorba Linda, California  Engineering and Applied Science (Mechanical Engineering)
Joseph Yu-Shuan Chang*  Houston, Texas  Electrical Engineering
Kevin Zi-Jun Chao*  Alhambra, California  Biology
Regina Kar Wuen Cheung  Freehold, New Jersey  Engineering and Applied Science (Mechanical Engineering)
Elizabeth Chen Chiang*  Beachwood, Ohio  Engineering and Applied Science
Jit Kee Chin*  Selangor, Malaysia  Physics and Literature
Daniel Hung-Yeh Chou  Tustin, California  Mathematics
Herman Chow*  Singapore, Singapore  Mathematics
Vivian Fung-Mei Chow*  Alhambra, California  Biology
Faria Rana Chowdhury  Boca Raton, Florida  Electrical Engineering
Jason Han Chua  Laguna Hills, California  Biology
Steve Chung  Memphis, Tennessee  Engineering and Applied Science
Helen Chong Claudio  Richmond, California  Engineering and Applied Science
Kristin Diane Commer  Shawnee, Kansas  Astronomy
Joseph V.L. Cook  Bloomington, Illinois  Literature
James Edward Cooley  Baltimore, Maryland  Physics
Lisa Cowan  Brownsville, Texas  Chemical Engineering
Elizabeth Rose Cutler*  Palatine, Illinois  Engineering and Applied Science
Daniel Patrick Daly  Springfield, Virginia  Applied Physics
Thomas Anthony Daula  Glen Rock, New Jersey  Applied and Computational Mathematics
Matthew Zachary Davis*  Greenbelt, Maryland  Engineering and Applied Science
Yann Roger De Graeve*  Palm Desert, California  Mathematics
Charles Meno Theodore DeBoer*  Omaha, Nebraska  Engineering and Applied Science (Mechanical Engineering)
Kristian-Carlo Capacillo DelaCruz  Poway, California  Engineering and Applied Science
Michael Edward DeSalvo  Marrero, Louisiana  Engineering and Applied Science (Mechanical Engineering)
Erik Andrew Dill  Fenton, Michigan  Chemistry
Benjamin Scott Driggs  Oakton, Virginia  Engineering and Applied Science
Amy Catherine Duello  Stone Mountain, Georgia  Engineering and Applied Science (Mechanical Engineering)
Bryan Keith Eastin*  Collinsville, Oklahoma  Physics
Robert Paul Enright  El Cajon, California  Electrical Engineering
David C. Fang*  Export, Pennsylvania  Electrical Engineering
Vladimir Dmitri Fedorov*  Richmond, Virginia  Engineering and Applied Science
Nathan Edward Flowers-Jacobs  Arcadia, California  Physics
Dennis Ji-Bin Fong  North Potomac, Maryland  Physics
Jennifer Alicia Fong  San Leandro, California  Chemical Engineering
Bachelor of Science continued

Peter James Freese* Omak, Washington Engineering and Applied Science (Mechanical Engineering) and Economics
Robin Sean Friedman* Thousand Oaks, California Chemistry
David Jason Gagne Shapleigh, Maine Engineering and Applied Science
Martin Elias Gaitan Miami, Florida Engineering and Applied Science (Aeronautics)
Lu Gan North Wales, Pennsylvania Physics
Jane Garrity* Okemos, Michigan Biology
Peter Michael Gerdes* Glenview, Illinois Mathematics
Dipasri Ghosh Cherry Hill, New Jersey Chemistry
Vladimir Gluzman San Francisco, California Mathematics
Heather Dawn Graven Littleton, Colorado Chemical Engineering
Anthony Ray Griffin* Baxter, Minnesota Engineering and Applied Science
Benjamin John Gudlewski Mason, Ohio Physics
Antal Gyori* Zalau, Romania Electrical Engineering
Andrew Clark Hafer La Mesa, California Independent Studies Program
Anne Catherine Hanna Libertyville, Illinois Physics
Derrick Paul Hasterok Hoover, Alabama Geophysics
Aren Nathaniel Heinze Houston, Texas Astronomy
Matthew James Highbie Acampo, California Engineering and Applied Science (Mechanical Engineering)
Travis James Hime* Houston, Texas Physics
Christopher Michael Hirata* Deerfield, Illinois Physics
Tuomas Robert Holmberg Bay Park, New York Applied Physics
Vit Hradecky* Prague, Czech Republic Physics
Hsiang (Sean) Huang* Temple City, California Electrical Engineering
Jay M. Hubisz Peabody, Massachusetts Physics
Pei-Hua Hung Edison, New Jersey Engineering and Applied Science (Mechanical Engineering)
Katherine Eve Isaacs Baltimore, Maryland Physics
Jenny Marie Francis Ives Cole Camp, Missouri Geology
Stona Reider Jackson George West, Texas Chemistry
Eagle Sunrise Jones Ashland, Oregon Engineering and Applied Science
Joy Melissa Justice Woodbridge, Virginia Engineering and Applied Science
Harry Jye Kao Olympia, Washington Engineering and Applied Science
Anne Elizabeth Kelly Anchorage, Alaska Physics
Ilije Jennifer Kim* Los Angeles, California Biology and Literature
Kurt Arthur Klein Huntington Beach, California Geology
Andrew Hampton Koehl Huntsville, Texas Electrical Engineering
Bachelor of Science continued

Dev Edward Kumar* Dallas, Texas  Engineering and Applied Science
Mohana Rama Kumar  Federal Way, Washington  Geophysics
Jon Jeffrey Ladd  Richmond, Virginia  Chemical Engineering
Ghee Hwee Lai* Singapore, Singapore  Applied Physics
Adam Lawton* Paramus, New Jersey  Chemistry
Jonathan Ryan Kyoung Ho Leong Waipahu, Hawaii  Physics
Janice Joyce Li* Hillsborough, California  Electrical Engineering
Jie De Jacky Liang* Los Angeles, California  Electrical Engineering and Economics
Adam Christopher Licht* El Paso, Texas  Physics
Megan Kathleen Linnehan Sebastopol, California  Engineering and Applied Science
Ruokun Liu Tucson, Arizona  Engineering and Applied Science
Nita Losoponkul East Hills, New York  Engineering and Applied Science
Francis Alexander MacDonald Moscow, Idaho  Geology
Howen Mak* Alhambra, California  Engineering and Applied Science (Mechanical Engineering)
Elitza Nikolaeva Maneva* Sofia, Bulgaria  Engineering and Applied Science
Ewa Matejska  New York City, New York  Engineering and Applied Science
Bradley Kenneth McCoy Lewistown, Montana  Physics
Alice Alexandra Medvedev Framingham, Massachusetts  Mathematics
Geoffrey Wilson Meissner* Chapel Hill, North Carolina  Biology
Jason T. Meltzer* Dix Hills, New York  Engineering and Applied Science
Arjun Menon* Trichur, India  Astronomy
Irina Miklovsky Los Angeles, California  Chemistry
Seth Louis Miller Lubbock, Texas  Mathematics
Benson K. Muite* Nairobi, Kenya  Engineering and Applied Science (Mechanical Engineering) and Economics
Alexander Hopkins Muller* Poland Spring, Maine  Engineering and Applied Science (Aeronautics)
Daniel John Murphy Cortlandt Manor, New York  Physics and Economics
Patrick Narcissian Upland, California  Electrical Engineering
Puneet Prashant Newaskar* New Delhi, India  Electrical Engineering
Nhien Hao Nguyen* Irvine, California  Biology
Peter Thang Nguyen Ottawa, Ontario, Canada  Chemical Engineering
Paul Michael Novak Riverwoods, Illinois  Engineering and Applied Science (Mechanical Engineering)
Roger C. O'Brien* Moraga, California  Physics
Kathryn Midori Oseen-Senda Edmonton, Alberta, Canada  Applied Physics
Hitaine Vipin Patel Gahanna, Ohio  Economics
Jonathan Broder Penoyar* South Bend, Washington  Physics
Amy Robynne Peterson Shoreview, Minnesota  Engineering and Applied Science


Bachelor of Science continued

Sean Ariel Pintchovski* Austin, Texas Biology
Brian Daniel Platt* Bethesda, Maryland Engineering and Applied Science (Mechanical Engineering)
Peter Paul Plavchan* LaGrangeville, New York Physics
Michael Jennings Pruett* New Orleans, Louisiana Engineering and Applied Science
Matthew Owen Reese San Diego, California Physics
Christian L. Reichardt* San Francisco, California Physics
Aspen Dawn Richter Williams, California Chemistry
Lori Robison Houston, Texas Engineering and Applied Science
Raphael Y. Rubin Rochester, New York Engineering and Applied Science
Dominika Rytwininska* Warsaw, Poland Chemical Engineering
Trisha Arlene Sando Thousand Oaks, California Biology
Ashwani Pillutla Sastry* Englewood Cliffs, New Jersey Mathematics
Michael Mose Schein* Fayetteville, Arkansas Mathematics
Steven Edward Schell* Colorado Springs, Colorado Engineering and Applied Science
   (Mechanical Engineering)
Adam Liddle Scott Sarasota, Florida Physics
Denis A. Shcherbakov* Moscow, Russia Chemical Engineering
Susan Mei-Chen Sher* Burlingame, California Engineering and Applied Science
Eric Alan Sherer Valparaiso, Indiana Chemical Engineering
Albert Young-Ming Shih* Palos Verdes Estates, California Physics and Mathematics
Carrie Shilyansky* San Marino, California Biology
Yasufumi Shiraishi* Ithaca, New York Engineering and Applied Science
Vanessa Ann Sih San Jose, California Applied Physics
Ryan Matthew Simkovsky* Poway, California Biology
Micah Steven Stuart Sittig Brea, California Applied Physics
Ronald K. Siu* San Marino, California Biology
Justin David Smith* Waco, Texas Engineering and Applied Science
Kayla Elaine Smith Santa Cruz, California Biology
Linda Soo Taipei, Taiwan Applied and Computational Mathematics and Engineering and Applied Science
Brian Adam Stalder Colfax, California Astronomy
Nathan David Stein Calgary, Alberta, Canada Applied Physics
Shannon Fisher Stewman* Gibsonia, Pennsylvania Chemistry
Naru Sundar Toronto, Ontario, Canada Electrical and Computer Engineering
Serge Sverdlov* Vacaville, California Engineering and Applied Science and Economics
Bachelor of Science continued

Barney Oran Switzer Nashville, Tennessee Engineering and Applied Science
Yuki David Takahashi* Shizouka-Ken, Japan Physics
Eric Robert Tardiff Macomb, Michigan Physics
Christian Louis Thomas Simi Valley, California Physics
Kathryn Grace Todd* Ukiah, California Physics and Literature
Ernest Kien-Keung Tong* Fort Collins, Colorado Engineering and Applied Science
Viet Quoc Tran Beaverton, Oregon Electrical Engineering
Andrew Tyler Tretten* Verdi, Nevada Engineering and Applied Science (Mechanical Engineering)
Dela Tsikata Accra, Ghana Engineering and Applied Science
Jason Donald Turner Allamuchy, New Jersey Engineering and Applied Science
Melinda Lee Turner* Webarn, Massachusetts Independent Studies Program
Eric Preston Tuttle* Edmonds, Washington Applied Physics
Lisa Van Hoozer Kansas City, Missouri Chemistry
Elizabeth Ruth Verschel* Brooklyn, New York Physics
Chia-Jean Wang* Lake Forest, California Electrical Engineering
Lawrence C. Wang Madison, Wisconsin Engineering and Applied Science
Sarah Marie Wantoch Overland Park, Kansas Chemical Engineering
Brian Watkins* Austin, Texas Mathematics
Nancy Chi Wei Santa Clara, California Biology
Stephen Michael Wexler* West Hartford, Connecticut Engineering and Applied Science
Paula Beck Whitten Carrollton, Georgia Biology
Rik Williams* Silverton, Oregon Astronomy
Nicholas Andrew Wisniewski* Detroit, Michigan Physics
Agnieszka Ewa Wojciechowska Indianapolis, Indiana Economics
Jessica Ja-Li Wu* Tuscaloosa, Alabama Chemical Engineering
Eric Chenjian Xu* Shanghai, China Engineering and Applied Science
Celeste Evelyn Yang Santa Barbara, California Physics
Jackie Sai Yue Yeung* Arcadia, California Engineering and Applied Science (Mechanical Engineering) and Economics
Yin Yue* San Francisco, California Applied Physics
Rouissilava Stefanova Zaharieva Sofia, Bulgaria Engineering and Applied Science
Eugene Zarakhovsky Los Angeles, California Engineering and Applied Science
Summer Ruonan Zhang* Woodside, New York Chemistry
Master of Science

Huirong Ai (Geology) B.S., Peking University 1996; M.S., 1999.
Steven Wayne Alves (Civil Engineering) B.S., Harvey Mudd College 2000.
David Nicholas Barsic (Electrical Engineering) B.S.E.E., University of Iowa 1997.
Nizar Nooruddin Batada (Control and Dynamical Systems) B.S., Carleton University 1998.
Sanjay Kumar Bhatia (Chemical Engineering) B.S., Rensselaer Polytechnic Institute 1998.
Justin Scott Boland (Electrical Engineering) B.S., University of Texas at Dallas 2000.
Stacey Walker Boland (Mechanical Engineering) B.S., University of Texas at Dallas 2000.
Dane Andrew Boysen (Materials Science) B.S., University of Washington 1997.
Edward Allan Branchaud (Mechanical Engineering) B.S., Boston University 2000.
Evan Ross Brockwell (Aeronautics) B.S., Georgia Institute of Technology 1999.
Joseph Jing-Fong Chen (Electrical Engineering) B.S.E.E., University of Virginia 1999.
Chu-Mei Chern (Geochemistry) B.Sc., National Cheng Kung University 1999.
Calum Ronald Inneas Chisholm (Materials Science) B.S., Yale College 1995.
Ming-Chit Franky Choi (Aeronautics) B.S., University of California, San Diego 2000.
Serena Hsin-Yi Chung (Chemical Engineering) B.S., University of Illinois at Urbana-Champaign 1998.
Daniel Ray Clendenning (Social Science) B.S., Purdue University 1997; M.S., 1999.
Boris Dimitrov (Computer Science)
Aaron Charles Eichelberger (Physics) B.S. (Astronomy), B.S. (Physics), University of Maryland, College Park 1997.
Vladimir Dmitri Fedorov (Computer Science) B.S., California Institute of Technology 2001.
Master of Science continued

Marcel Gavriliu (Computer Science) B.S., California Institute of Technology 1997.
Haoquan Ge (Mechanical Engineering) B.S., Rutgers University 2000.
Radu Georgescu (Biochemistry and Molecular Biophysics) B.A., Occidental College 1999.
Tran Sin Gieng (Computer Science) B.S., University of California, Davis 1997.
Siew Wee Alvina Goh (Electrical Engineering) B.S.E. (Computer Science), B.S.E. (Electrical Engineering), The University of Michigan 2000.
Robert Golanski (Social Science) B.S., Warsaw School of Economics 1997; M.S., 1998; M.Ph., University of Cambridge 1999.
Lawrence Cary Gunn III (Electrical Engineering) B.S., United States Air Force Academy 1995.
Hossein Hashemi (Electrical Engineering) B.S., Sharif University of Technology 1997; M.S., 1999.
Qing He (Electrical Engineering) B.E., Tsinghua University 2000.
Jeremy David Heidel (Chemical Engineering) S.B. (Biology), S.B. (Chemical Engineering), Massachusetts Institute of Technology 1999.
Gilberto Hernandez, Jr. (Biology) B.A., University of California, Los Angeles 1996.
Stephen Richard Hostler (Mechanical Engineering) B.S.E., Case Western Reserve University 2000.
Meredith Laura Howard (Chemistry) B.A., Amherst College 1996.
Mon-Quen Huang (Electrical Engineering) B.S.E.E., Cornell University 1999.
Mandar Mukund Inamdar (Civil Engineering) B.Tech., Indian Institute of Technology, Bombay 2000.
Krzysztof Bogdan Kasprzyk (Social Science) B.Sc., Warsaw School of Economics 1997; M.Sc., 1998.
Ben Klemens (Social Science) B.A., The University of Chicago 1996.
Megan Alameda Knight (Environmental Engineering Science) B.S. (Chemistry), B.S. (Geography and Environmental Systems), University of Maryland 2000.
Robert D. Kolasinski (Mechanical Engineering) B.S., Rutgers University 2000.
William Michal Leblanc (Social Science) S.B., Massachusetts Institute of Technology 1999.
Khim Wee Lee (Mechanical Engineering) B.Sc., B.A., University of California, Berkeley 2000.
Jiao Lin (Materials Science) B.S., Peking University 1996; M.S., Chinese Academy of Science 1999.
Jamie Wenzel Lindfors (Environmental Engineering Science) B.S., University of Minnesota 1999.
Nathan Jacob Litke (Computer Science) B.A., University of Waterloo 1998.
Yi-Ping Liu (Environmental Engineering Science) B.S., California Institute of Technology 2000.
Jun Lu (Electrical Engineering) B.S., Tsinghua University 1992; M.S., 1995; M.S. (Mechanical Engineering), California Institute of Technology 2000.
Natalia Lukina (Biology) B.S., Moscow Institute of Physics and Technology 1999; M.S., 2000.
Shengnian Luo (Geophysics) B.S., University of Science and Technology of China 1994.
Todd Philip Meyrath (Electrical Engineering) B.S. (Applied Mathematics), B.S. (Physics), Georgia Institute of Technology 1998; M.S., University of Texas at Austin 2000.
Robert Carlos Moeller (Mechanical Engineering) B.S., University of Southern California 1999.
Matthew Alexander Morgan (Electrical Engineering) B.S., University of Virginia 1999.
John Frank Murphy (Chemical Engineering) B.S., Cornell University 1999.
Matthew Mokihana Muto (Civil Engineering) B.S., Harvey Mudd College 2000.
Elisabeth Sophia Nadin (Geology) B.S., University of Rhode Island 1998.
Purnima Naganathan (Electrical Engineering) B.E., PSG College of Technology 2000.
Terrell Demetris Neal (Electrical Engineering) B.S.E.E., Georgia Institute of Technology 2000; B.S. (Mathematics), Morehouse College 2000.
Sheldon Yoshio Okada (Chemistry) B.A., University of California, Berkeley 1997.
George Tardenat Paloczi (Applied Physics) B.S., University of California, Santa Barbara 1999.
Eric A. Pape (Chemical Engineering) B.S., University of Missouri–Rolla 1999.
Elizabeth Maggie Penn (Social Science) B.A., University of California, Berkeley 1999.
Patricia Persaud (Geophysics) B.Sc., University of Houston 1998.
Master of Science continued

Daniel James Richardson  (Social Science)  B.S., Virginia Polytechnic Institute and State University 1995.
Kathleen Marie Richter (Biology)  B.S., University of Wisconsin-Madison 1998.
Olga Schneider (Aeronautics)  Vordiplom, University of Technology 1996; Diplom, 2000.
Charlotte Annegret Schulten (Geophysics)  B.S., The University of Chicago 1999.
Wenjin Shao  (Physics)  B.S., University of Science and Technology of China 1999.
Wei Shen  (Chemical Engineering)  B.S., East China University of Science and Technology 1992; M.S., 1995.
Andrew James Spakowitz  (Chemical Engineering)  B.S., University of Wisconsin-Madison 1999.
Eng Keong Tan  (Mechanical Engineering)  B.S., Cornell University 2000.
Jeremy Christopher Thorpe  (Electrical Engineering)  B.S., University of California, Riverside 2000.
Andre Tkacenko  (Electrical Engineering)  B.S., California Institute of Technology 1999.
Philip C. Tsao  (Electrical Engineering)  B.S.E.E., Georgia Institute of Technology 1999.
Dave Anton Van Gogh  (Mechanical Engineering)  B.S., University of California, Berkeley 1990.
Guodong Wang  (Physics)  B.S., University of Science and Technology of China 1999.
Shaoyu Wang  (Mathematics)  B.S., Beijing University 1995.
Christopher John White  (Electrical Engineering)  B.S., University of Illinois at Urbana-Champaign 1999.
Stephen Matthew Wood  (Chemical Engineering)  B.S., Rice University 1999.
Jian Wu  (Materials Science)  B.S., Tsinghua University 1999.
Guoyun Xia  (Environmental Engineering Science)  B.S., Nanjing University 1996; M.S., Chinese Academy of Science 1999.
Zhimei Yan  (Geophysics)  B.S., Peking University 1996; M.S., 1999.
Choon Hwai Yap  (Civil Engineering)  B.S., Cornell University 2000.
Yizhen Zhang  (Mechanical Engineering)  B.S., Tsinghua University 2000.
Hong Zhuang  (Environmental Engineering Science)  B.S., Beijing Polytechnic University 1991; MPhil., Hong Kong University of Science and Technology 1998.
Engineer

Wei-Jen Su (Aeronautics) B.S., Polytechnic University 1998.
Doctor of Philosophy

DIVISION OF BIOLOGY

Keith B. Brown  (Biology) B.S., Grambling State University 1992.

Chieh Chang  (Biology) B.S., Chung Shan Medical and Dental College 1990; M.S.,
Thesis: Signal Transduction, Regulation, and Developmental Logic of EGFR
Signaling in C. elegans.

Yong Chi  (Biology) B.A., University of California, Berkeley 1993.
Thesis: Negative Regulation of Transcription Factors by Srb10 Cyclin-Dependent
Kinase.

Thesis: Expression of Eph-family Receptor Tyrosine Kinases and Ephrins in the
Tadpole of the Frog Xenopus Laevis, and Possible Roles in the Development of
Retinotectal Topography.

David Matthew Herman  (Biochemistry and Molecular Biophysics) B.S., University of
California, San Diego 1993.
Thesis: Stereochemically Modified Polyamides for Recognition in Minor Groove of
DNA.

Yukiyasu Kamitani  (Computation and Neural Systems) B.A., The University of Tokyo
Thesis: Psychobiophysics of Transcranial Magnetic Stimulation.

Yang Liu  (Biology) B.S., Peking University 1990.
Thesis: Molecular Mechanism of Sulfated Carbohydrate Recognition: Structural and

Svetlana A. Lyapina  (Biology) B.S., Moscow State University 1994.
Thesis: Characterization of the Human SCF Ubiquitin Ligases - Structure, Function,
and Regulation.

Warham Lance Martin  (Biochemistry and Molecular Biophysics) B.A., DePaul University
1989; M.S., California State University, Los Angeles 1995.
Thesis: Protein-Protein Recognition: The Neonatal Fc Receptor and
Immunoglobulin G.

Wenyin Shou  (Biology) B.A., Pomona College 1993; M.S., California Institute of
Technology 1998.
Thesis: Diverse Mechanisms of Regulating the Mitotic Cell Cycle.

Michael Christopher Vanier  (Computation and Neural Systems) B.Sc., McGill University
1986; M.Sc., 1990.

When more than one field of study is listed, the first is the major, and the second and others are minors.
DIVISION OF CHEMISTRY AND CHEMICAL ENGINEERING

Christopher Graham Brandow (Chemistry) B.S., The University of Tennessee at Chattanooga 1994.

   Thesis: Cleavage of DNA by Polyamide-Secco-CBI Conjugates.

Sing Hwa Chong (Chemistry) B.S., University of Kansas 1992.

Derek A. Debe (Chemistry) B.S., University of Minnesota 1995.
   Thesis: Shaving Levinthal with Occam's Razor: Understanding the Rate Limiting Step in Protein Folding.

Xiangdong Fang (Chemistry) B.S., University of Science and Technology of China 1988.
   Thesis: Developmentally Regulated Transcription Factors in Drosophila Melanogaster.

Yi Qin Gao (Chemistry) B.S., Sichuan University 1993; M.S., University of Science and Technology of China 1996.

Shao-Ching Hung (Chemistry) B.S., National Tsing Hua University 1993; M.S., 1995.

Suzie J. Hwang (Chemical Engineering and Biology) B.S., Stanford University 1996; M.S., California Institute of Technology 1998.
   Thesis: Rational Design of a New Class of Cyclodextrin-Containing Polymers for Gene Delivery.

Hytotche Ilhee (Chemistry) B.S., Korea Advanced Institute of Science and Technology 1994.

James G. Kempf (Chemistry) B.S., State University of New York at Fredonia 1993.
   Thesis: Probing Quantum Confinement at the Atomic Scale with Optically Detected Nuclear Magnetic Resonance.

Elizabeth Stratford Krider (Chemistry) B.S., Brigham Young University 1994.

Jeremy Soo Pin Kua (Chemistry) B.A., Reed College 1996.
   Thesis: Computational Studies of Heterogeneous and Homogeneous Catalysis by Late Transition Metals.
Re Lai (Chemistry and Chemical Engineering) B.S., University of Science and Technology of China 1992; M.S., 1995.
Julio Danin Lobo (Chemistry) B.S., University of Massachusetts at Amherst 1995; M.S., California Institute of Technology 1997.
Lin Luo (Chemical Engineering) B.S., University of Science and Technology of China 1993; M.S., The University of Chicago 1994.
Michael C. Machczynski (Chemistry) B.S., Michigan State University 1995.
Heather Dawn Maynard (Chemistry) B.S., University of North Carolina at Chapel Hill 1992; M.S., University of California, Santa Barbara 1995.
Michael R. Mish (Chemistry) B.S., The University of Arizona 1996.
Duncan Odom (Chemistry) B.A., New College of the University of South Florida 1993.
Michele Louisa Ostraat (Chemical Engineering) B.S., Trinity University 1996; M.S., California Institute of Technology
Piboon Pantu (Chemical Engineering) B.S., Kasetsart University 1996; M.S., California Institute of Technology 1998.
Thesis: Methane Conversion to Synthesis Gas over Platinum Supported on Rare Earth Oxides.
Alison Pratt (Chemical Engineering) A.B., Dartmouth College 1992; B.S., Northeastern University 1995; M.S., California Institute of Technology 1997.
Thesis: Cell-Responsive Synthetic Biomaterials Formed in situ.
Vsevolod V. Rostovtsev (Chemistry) B.S., Russian Academy of Sciences Higher Chemical College 1995; M.S., 1996; M.S., University of Nebraska-Lincoln 1996.
  Thesis: Investigations of Charge-Carrier Dynamics at Semiconductor/Liquid Interfaces.
Melanie Sarah Sanford (Chemistry) B.S., Yale College 1996.
Jeremy Tyson Starr (Chemistry) B.S., Santa Clara University 1996.
  Thesis: Studies Directed Toward the Synthesis of Palau'amine and Axinellamines A-D.
Steven Henry Szczepankiewicz (Chemistry) B.S., Canisius College 1995.
  Thesis: Surface Chemistry of TiO$_2$ Photocatalysts.
Faik Akif Tezcan (Chemistry) B.A., Macalester College 1995.
Craig S. Tomooka (Chemistry) B.S., University of California, Irvine 1996.
  Thesis: Nitrogen Atom-Transfer Incorporating Metal Complexes as Reagents or Catalysts.
Natalie Dawn Winblade (Chemical Engineering and Biology) B.S., University of Washington 1995; M.S., California Institute of Technology 1997.
  Thesis: Blocking Adhesion to Cell and Tissue Surfaces via Steric Stabilization with Graft Copolymers Containing Poly(Ethylene Glycol) and Phenylboronic Acid.
Jeffrey Charles Yoder (Chemistry) B.S., Texas A&M University 1995.
Todd Ross Younkin (Chemistry) B.S., University of Florida 1996.
Hong Zhong (Chemistry) S.B., Massachusetts Institute of Technology 1996.
Weijun Zhou (Chemical Engineering) B.S., University of Science and Technology of China 1993; M.S., California Institute of Technology 1998.
  Thesis: Dynamics and Shear Alignment Behavior of a Model Thermotropic Liquid Crystalline Polymer.
Deanna Lynn Zubris (Chemistry) B.S., University of Rochester 1995.
DIVISION OF ENGINEERING AND APPLIED SCIENCES


Siu Kui Au (Civil Engineering) B.E., Hong Kong University of Science and Technology 1995; M.S., 1997.

Thesis: All-Optical Logic Circuits Based on the Polarization Properties of Non-Degenerate Four-Wave Mixing.

Thesis: Attentional Control of Complex Systems.


Thesis: Investigation of Large Strain Actuation in Barium Titanate.

Ming Cai (Electrical Engineering) B.S., Tsinghua University 1995; M.S., California Institute of Technology 1998.


Thesis: Disinfection by Pulsed Power Discharges.
Doctor of Philosophy continued


David Rea Cocker III (Environmental Engineering Science and Chemical Engineering) B.S. (Chemistry), B.S. (Environmental Engineering), University of California, Riverside 1996; M.S., California Institute of Technology 1998.

Demirkan Coker (Aeronautics and Geophysics) B.S., Middle East Technical University 1986; M.S., Wright State University 1990; M.S., University of Dayton 1993.

Thesis: Photochemical Transformations in Ice: Implications for the Fate of Chemical Species.


Mark Edward Duttwieiler (Mechanical Engineering) B.S., Rice University 1995; M.S., California Institute of Technology 1996.


Chenggong Charles Fan (Electrical Engineering) B.E., The Cooper Union 1995; M.S., California Institute of Technology 1996.

Thesis: Geochemistry of Uranium at Mineral-Water Interfaces: Rates of Sorption-Desorption and Dissolution-Precipitation Reactions.

Stephen Clarke Glade (Materials Science) B.S., Georgia Institute of Technology 1994; M.S., California Institute of Technology 1998.

Charles Inmyong Grosjean (Electrical Engineering) B.S., California Institute of Technology 1994; M.S., California Institute of Technology 1995.  
Thesis: Silicone MEMS for Fluidics.


Freddy Hansen (Applied Physics) M.Sc., Chalmers University of Technology 1993; M.S., California Institute of Technology 1996.  
Thesis: Laboratory Simulations of Solar Prominences.

Adrian Hightower (Materials Science) B.S., California Institute of Technology 1995; M.S., 1998.  


Wen Hsuan Hsieh (Electrical Engineering and Biology) B.S., California Institute of Technology 1994; M.S., California Institute of Technology 1995.  
Thesis: MEMS Thin Film Teflon Electret Condenser Microphones.

Yun Hsu (Mechanical Engineering) B.S., University of Arizona 1996; M.S., California Institute of Technology 1997.  


Ying Huang (Aeronautics and Computer Science) B.E., Tsinghua University 1995; M.S., California Institute of Technology 1996.  

Lara Hughes (Environmental Engineering Science) B.S., Washington University 1994; M.S., California Institute of Technology 1996.  
Doctor of Philosophy continued

Thesis: Modeling and Simulation of Combustion Chamber and Propellant Dynamics and Issues in Active Control of Combustion Instabilities.

Ali Jadbabaei (Control and Dynamical Systems) B.S., Sharif University of Technology 1995; M.S., University of New Mexico 1997.

Hui Jin (Electrical Engineering) B.S., California Institute of Technology 1998.
Thesis: Analysis and Design of Turbo-Like Codes.

Choongnyun Paul Kim (Materials Science) B.S., University of South Florida 1994.
Thesis: Ductile Phase Reinforced Bulk Metallic Glass Composites Formed by Chemical Partitioning.

Thesis: Analog Computation and Learning in VLSI.

Roger Gérard Matthias Paul Koumans (Electrical Engineering) B.S., Eindhoven University of Technology 1994; M.S., 1994; M.S., California Institute of Technology 1996.

Paul Samuel Krueger (Aeronautics and Dynamics and Controls) B.S., University of California, Berkeley 1997; M.S., California Institute of Technology 1998.
Thesis: The Significance of Vortex Ring Formation and Nozzle Exit Over-Pressure to Pulsatile Jet Propulsion.


Thesis: Holographic Resolution and Its Application in Memory and Imaging.


Doctor of Philosophy continued

Lin Ma (Mechanical Engineering) B.S., Beijing University 1996; M.S., California Institute of Technology 1997.

Michael Edward Manley (Materials Science) B.S.M.E., University of Massachusetts, Lowell 1994; M.S., California Institute of Technology 1998.


Murat Meşe (Electrical Engineering) B.S., Bilkent University 1996; M.S., California Institute of Technology 1997.
Thesis: Image Halftoning and Inverse Reconstruction Problems with Considerations to Image Watermarking.


Christophe Moser (Electrical Engineering and Economics) B.S., Swiss Institute of Technology 1993; M.S., California Institute of Technology 1997.


Mika Nyström (Computer Science) S.B., Massachusetts Institute of Technology 1994; M.S., California Institute of Technology 1997.

Thesis: The Passage Toward Stall of Nonslender Delta Wings at Low Reynolds Number.

Doctor of Philosophy continued

Tatiana B. Piatina (Environmental Engineering Science and Chemistry) B.S., Mendeleev Moscow University of Chemical Technology 1989.
Thesis: Studies of Metal-Organic Interactions with Model Synthetic and Natural Ligands Applicable to Natural Waters.

Dan Raymond Provenzano (Applied Physics) B.S., University of California, Santa Barbara 1994; M.S., California Institute of Technology 1996.

Winston Pun (Mechanical Engineering) B.A.Sc., University of Toronto 1994; M.S., California Institute of Technology 1995.
Thesis: Measurements of Thermo-Acoustic Coupling.


Thesis: Cloud Condensation Nuclei in the Amazon Basin: Their Role in a Tropical Rainforest.

Thesis: Bacterial Oxidation of Arsenite at Hot Creek: Characterization of Biofilm Communities and Isolation of Novel Bacteria Associated with Aquatic Macrophytes.

Thesis: Subsonic and Intersonic Crack Growth along Weak Planes and Bimaterial Interfaces.

Thesis: Time-Dependent Compressibility of Poly(Methyl Methacrylate) (PMMA): An Experimental and Molecular Dynamics Investigation.

Doctor of Philosophy continued


Ashok Burton Tripathi (Mechanical Engineering and Materials Science) B.S., Cornell University 1993; M.S., California Institute of Technology 1994. Thesis: In situ Diagnostics for Metalorganic Chemical Vapor Deposition of YBCO.


DIVISION OF GEOLOGICAL AND PLANETARY SCIENCES


Leo Eisner (Geophysics) Magister, Charles University 1994.
Thesis: A Reciprocity Method for Multiple Source Simulations.

Julia S. Goreva (Geochemistry) B.S., Moscow State University 1993; M.S., California Institute of Technology 1997.

Jeanne L. Hardebeck (Geophysics) A.B., Cornell University 1993; M.S., California Institute of Technology 1997.

Yuan-Tai Lee (Planetary Science and Astronomy) B.S., National Taiwan University 1986; M.S., 1989.


Sidao Ni (Geophysics and Computer Science) B.S., University of Science and Technology of China 1993; M.S., 1996; M.S., California Institute of Technology 1998.

Gregory S. Okin (Geochemistry) B.A., Middlebury College 1995; M.S., California Institute of Technology 1997.


DIVISION OF HUMANITIES AND SOCIAL SCIENCES

Christopher Madden Anderson (Social Science) Sc.B., Brown University 1996.
Tara Lee Butterfield (Social Science) B.A., University of California, Berkeley 1990;
M.S., California Institute of Technology 1997.
Thesis: Awakening a Sleeping Giant: The Riddle of Latino Political Participation.
Leslie Rachel Fine (Social Science) B.A., Wesleyan University 1994; M.S., California
Institute of Technology 1998.
Thesis: Cooperative and Market-Based Solutions to Pollution Abatement Problems.
Angela A. Hung (Social Science) B.A., Rice University 1995; M.A., University of
Virginia 1997; M.S., California Institute of Technology 1998.
John Wiggs Patty (Social Science) B.A., University of North Carolina at Chapel Hill 1996.
Thesis: Voting Games with Incomplete Information.
Reginald Eric Roberts (Social Science) A.A., El Camino College 1990; B.A., California
Polytechnic State University, San Luis Obispo 1993; M.S., Carnegie Mellon
University 1995; M.S., California Institute of Technology 1997.
Thesis: Protecting the Public Welfare and Morals: Political Institutions, Federalism,
and Prohibition, 1834–1934.

DIVISION OF PHYSICS, MATHEMATICS AND ASTRONOMY

Robert Andrew Beach Jr. (Physics) B.S., California Polytechnic State University,
San Luis Obispo 1995.
Thesis: A Measurement of the Angular Power Spectrum of the Cosmic Microwave
Background with a Long Duration Balloon-Borne Receiver.
Thesis: The Northern Sky Optical Cluster Survey: Galaxy Clusters from Five
Thousand Square Degrees of DPOSS.
Alexa Welsh Harter (Physics) Sc.B., Brown University 1991; M.S., California Institute
of Technology 1996.
Near $\lambda$.
Thesis: High Time Resolution Observations of Radio Pulsars: The First Detection of
Coherent Emission.
John Steffen Jensen (Physics) B.S., California Polytechnic State University, San Luis Obispo 1995.
Thesis: Perturbations of One-Dimensional Schrödinger Operators Preserving the Absolutely Continuous Spectrum.
Jason L. Maron (Physics) B.S. (Mathematics), B.S. (Physics), University of Wisconsin-Madison 1993; M.S., California Institute of Technology 1996.
Thesis: Magnetohydrodynamic Turbulence.
James E. Mason (Physics) B.S., Metropolitan State College 1994.
Thesis: SU(3) Chiral Symmetry in Non-Relativistic Field Theory.
Thesis: Branes, Brane Actions and Applications to Field Theory.
Alexander Shvorob (Physics) B.S., Moscow Institute of Physics and Technology 1994.
Thesis: A Study of W Boson Properties with Four-Jet W⁺W⁻ Events at LEP.
Yong Xu (Physics) B.S., Tsinghua University 1995.
**Prizes and Awards**

Prizes and awards are listed only for those students receiving degrees in 2001, and include prizes and awards received by them in previous years.

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

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.

2001  Mark Orrin Barrett, Iljie Jennifer Kim

**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.

2001  Jit Kee Chin
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 need or any other nonacademic criteria.

1999
- Travis James Hime
- Michael Mose Schein

2000
- Orkun Akin
- Mark Christian Arnesen
- Jeffrey Evan Barrick
- Jit Kee Chin
- Peter James Freese
- Christopher Michael Hirata
- Eagle Sunrise Jones
- Dominika Rytwinska
- Ashwani Pillutla Sastry
- Michael Mose Schein
- Steven Edward Schell
- Eric Preston Tuttle
- Brian Watkins
- Jessica Ja-Li Wuu
- Summer Ruonan Zhang

2001
- Orkun Akin
- Ron Alterovitz
- Jeffrey Evan Barrick
- Jit Kee Chin
- Vladimir Dmitri Fedorov
- Peter James Freese
- Christopher Michael Hirata
- Vit Hradecky
- Jie-De Jacky Liang
- Christian Louis Reichardt
- Michael Mose Schein
- Steven Edward Schell
- Carrie Shilyansky
- Brian Watkins
- Jessica Ja-Li Wuu
- Summer Ruonan Zhang
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.

1996    Christopher Adam Eckett  
2000    Murtuza Lokhandwalla

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

2001    Christopher Adam Eckett, Pradeep R. Guduru

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

1999    Scott Huai-Lei Carnahan  
2000    Peter Michael Gerdes

RICHARD G. BREWER PRIZE IN PHYSICS
Awarded to the freshman with the most interesting solutions to the Physics 11 "hurdles," in recognition of demonstrated intellectual promise and creativity at the very beginning of his or her Caltech education.

1998    Travis James Hime

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

1995    Christopher Adam Eckett  
1998    Paul Samuel Krueger  
2001    Nicolas Frederic Ponchaut
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.

2001  Gang Hu, Mayya Tokman

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.

2001  Mark Edward Duttweiler, Paul Samuel Krueger

DONALD S. CLARK MEMORIAL AWARDS
May be 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.

2000  Alexander Hopkins Muller, Melinda Lee Turner

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

2001  Eric Noboru Burcsu

DEANS’ CUP AND DIRECTOR OF RESIDENCE LIFE AND MASTER’S AWARD
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.

2000  Amy Catherine Duello, Residence Life and Master’s Award
2001  Heather Dawn Graven, Dean’s Cup
      Alexander Hopkins Muller, Dean’s Cup
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.

1998  Suzie J. Hwang

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

2000  Brendan P. Crill, Suzie J. Hwang

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

2001  Melinda Lee Turner

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.

2001  Wenying Shou

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

2001  Christopher Michael Hirata

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

2000  Christopher Michael Hirata
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.

2000 Peter James Freese

JACK E. FROEHlichC 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.

2000 Christopher Michael Hirata

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

2001 Keith B. Brown
Daniel E. Giammer

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.

2000 Jeffrey Evan Barrick
2001 Benson K. Muite

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.

2001 Bryan Keith Eastin
SCOTT RUSSELL JOHNSON UNDERGRADUATE MATHEMATICS PRIZE
Awarded to the best graduating mathematics major. Special consideration is given for independent research done as a senior thesis or SURF project.

2001 Scott Hua-Lei Carnahan, Michael Mose Schein

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

2001 Kathryn Grace Todd

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.

1997 Jeffrey Evan Barrick

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

2001 Derek A. Debe, Yi Qin Gao, Jeremy Soo Pin Kua, Melanie S. Sanford, Fatik Akif Tekcan

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

1998 Erik Andrew Dill, Kathryn Grace Todd
1999 Jane Garrity
2000 Jit Kee Chin
MERIT AND PRESIDENT'S SCHOLARS
Awarded to selected freshmen whose record of personal and academic accomplishment is judged outstanding among incoming freshmen.

1997
Jorge Eduardo Avelar
Jeffrey Evan Barrick
Jane Garrity
Christopher Michael Hirata
Eagle Sunrise Jones
Dev Edward Kumar
Christian L. Reichardt
Ashwani Pillutla Sastry

1997
Michael Mose Schein
Steven Edward Schell
Carrie Shilyansky
Serge Sverdlov
Kathryn Grace Todd
Sarah Marie Wantoch
Eugene Zarakhovsky

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.

2001
Laura Anne Brogoch, Elizabeth Chen Chiang, Daniel Patrick Daly,
Eric Preston Tuttle

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

2001
Brian Platt

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

2000
Christopher Michael Hirata, Michael Mose Schein
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.

2001 Jessica Ja-Li Wu

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.

1998 Pradeep R. Guduru
2000 Jean-François Roland Molinari
2001 Demirkan Coker

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

1998 Jay M. Hubisz
Iljje Jennifer Kim
1999 Boris Semyanovich Axelrod
Christoph James Baranec
Samantha Robin Bench
Jit Kee Chin
Jonathan Broder Penoyar
Rik Williams
Summer Ruonan Zhang
2000 Peter James Freese
Vit Hradecky
Pei-Hua Hung
Stona Reider Jackson

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

2001 Christian L. Reichardt
JOHN STAGER STEMPLE MEMORIAL PRIZE IN PHYSICS
Awarded to a graduate student in physics for outstanding progress in research as demonstrated by an excellent performance on the oral Ph.D. candidacy examination.

1998  Fredrick August Jenet

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

2000  Andrew Clark Hafer

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

2001  Anne Elizabeth Kelly

MORGAN WARD PRIZE
Awarded for the best problems and solutions in mathematics submitted by a freshman or sophomore.

1999  Ashwani Pillutla Sastry
Caltech 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.
  - **ATHENAEL11H11ncheon** 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.