UNIVERSITY OF CALIFORNIA, MERCED
FACULTY AS OF DECEMBER 14, 2005

School of Engineering

DAVID B. ASHLEY, *Executive Vice Chancellor/Provost, Professor and holder of the Shaffer-George Chair in Engineering*
B.S., M.S., Massachusetts Institution of Technology; M.S., Ph.D., Stanford
Development and implementation of risk analysis techniques appropriate for project management and construction-engineering decisions. Determination of factors leading to construction project success, predictive models of project performance, assessment of project change consequential effects, project scope modeling and definition, conceptual estimating, and innovative project financing approaches

ROGER C. BALES, *Professor*
B.S., Purdue University; M.S., University of California, Berkeley; M.S., Ph.D., California Institute of Technology
Hydrology, snow and ice, hydrochemistry, climate impacts on water resources, climate changes over polar ice sheets

ALBERTO E. CERPA, *Assistant Professor*
Engineer Degree, Buenos Aires Institute of Technology; M.S., M.S, University of Southern California; Ph.D., University of California, Los Angeles
Computer networking and distributed systems, wireless sensor networks, with emphasis in network self-configuration, topology control, wireless radio channel measurement and characterization, programming models, development of wireless testbeds, Internet protocols, operating systems issues

RAYMOND Y. CHIAO, *Professor*
B.A., Princeton University; Ph.D., Massachusetts Institute of Technology
Nonlinear and quantum optics, in particular: (1) Berry's phases in optics, (2) two-photon, Einstein-Podolsky-Rosen interference effects, such as the Franson interference, the quantum eraser, and the measurement of the single photon tunneling time, (3) experiments on faster-than-c optical phenomena, such as tachyonic wavepackets in inverted atomic media, and (4) experiments on the interacting Bose gas, i.e., 1D and 2D photon fluids inside nonlinear optical cavities, and their relationship to optical solutions, such as the sech, the tanh, and the vortex solitons

WEI-CHUN CHIN, *Assistant Professor*
B.S., M.S., National Tsing-Hua University, Taiwan; M.S.E., Ph.D., University of Washington, Seattle
Cellular signaling, cellular engineering, polymer gel assembly, biopolymer gels

MARTHA H. CONKLIN, *Professor*
B.A., Mount Holyoke College; M.S., Ph.D., California Institute of Technology
Biogeochemistry, metal cycling, surface water/shallow groundwater interactions, organic chemical distribution in soil and groundwater; chemical processes in snow, K-12 environmental education

GERARDO C. DIAZ, *Assistant Professor*
B.S., Universidad de Santiago de Chile; M.S., Ph.D., University of Notre Dame
Energy conversion systems, dynamic simulation and control of thermal systems, adaptive thermal networks, absorption chillers and heat pumps, vapor compression systems with alternate refrigerants, microchannel heat exchangers, artificial neural networks and genetic algorithm for optimization of thermal components

QINGHUA GUO, *Assistant Professor*
B.S., M.S., Peking University, China; Ph.D., University of California, Berkeley
Methodological aspects of geographical information science including geocomputation, remote sensing techniques, and spatial analysis; applied aspects of geographical information science including the application of geospatial techniques in solving large-scale ecological and geographical problems, with emphasis on the effects of invasive species, climate change, and human disturbance on terrestrial ecosystems

THOMAS C. HARMON, *Professor*
B.S., The John Hopkins University; M.S., Ph.D., Stanford University
Contaminant transport in aquatic systems, soil and groundwater remediation, development and use of environmental sensors

MARCELO KALLMANN, *Assistant Professor*
B.S., State University of Rio de Janeiro; M.S., Federal University of Rio de Janeiro; Ph.D., Swiss Federal Institute of Technology
Geometric modeling, computer graphics, computer animation, autonomous agents, robotics and artificial intelligence

VALERIE J. LEPPERT, *Associate Professor*
B.A., B.A., California State University, Sonoma; Ph.D., Northwestern University
Electron microscopy, nanomaterials for application in technology and the environment

KARA E. MCCLOSKEY, *Assistant Professor*
B.S., M.S., Ohio State University; Ph.D., Ohio State University and Cleveland Clinic Foundation
Engineering principles, such as analysis and design, as they apply to the advancements being made in stem cells and tissue engineering, focusing on deriving pure populations from stem cells in vitro, characterizing these cells and comparing their function with mature cells derived in vivo and then using these cells towards regenerative medicine applications including tissue engineering and cell theory approaches; particular interest resides in cardiovascular cell lineage, with plans to expand into other cell systems long-term

SHAWN D. NEWSAM, *Assistant Professor*
B.S., University of California, Berkeley; M.S., University of California, Davis; Ph.D., University of California, Santa Barbara
Image processing, computer vision, pattern recognition, machine learning, content-based information retrieval, digital libraries, data mining, knowledge discovery in spatio-temporal, multi-media, and scientific datasets

CHRISTOPHER VINEY, *Professor*
B.A., Ph.D., Cambridge University
Biomolecular materials (design of materials synthesis, assembly, processing and physical optimization strategies based on examples from Nature), physical science and engineering of polymers and liquid crystals (structure-property-processing relationships)

ROLAND WINSTON, *Professor*
B.S., M.S., Ph.D., University of Chicago
Solar power and renewable energy, elementary particle physics, non-imaging optics

JEFF WRIGHT, *Dean, School of Engineering and Professor*
B.A., B.S.E., M.S.E., University of Washington; Ph.D., The John Hopkins University
Water resources and environmental management; design and implementation of computer-based spatial decision support systems for civil infrastructure, transportation, water resources, and land resources engineering and management

School of Natural Sciences

KEITH E. ALLEY, *Vice Chancellor of Research/Dean of Graduate Studies and Professor*
B.S., D.D.S., M.S., Ph.D., University of Illinois
Developmental neuroscience focusing on cellular mechanisms that assure scaling of neuronal populations with the targets they innervate, neuromuscular maturation and plasticity

MIRIAM BARLOW, *Assistant Professor, School of Natural Sciences*
B.S., University of Utah; M.S., Ph.D., University of Rochester
Evolution of bacteria, predicting the evolution of antibiotic resistance, testing evolutionary theory

RAYMOND Y. CHIAO, *Professor*
B.A., Princeton University; Ph.D., Massachusetts Institute of Technology
Nonlinear and quantum optics, in particular: (1) Berry's phases in optics, (2) two-photon, Einstein-Podolsky-Rosen interference effects, such as the Franson interference, the quantum eraser, and the measurement of the single photon tunneling time, (3) experiments on faster-than-c optical phenomena, such as tachyonic wavepackets in inverted atomic media, and (4) experiments on the interacting Bose gas, i.e., 1D and 2D photon fluids inside nonlinear optical cavities, and their relationship to optical solutions, such as the sech, the tanh, and the vortex solitons

JINAH CHOI, *Assistant Professor, School of Natural Sciences*
B.S., University of California, Los Angeles; Ph.D., University of Southern California
Hepatitis C virus (HCV) and the mechanism of synthesis and functions of novel HCV proteins that are produced by programmed translation– al frameshifting, as well as how HCV replication might be regulated by endogenous and exogenous agents including ribavirin, cytokines, alcohol, and receive oxygen species

MICHAEL E. COLVIN, *Professor*
S.B., S.B., Massachusetts Institute of Technology; Ph.D., University of California, Berkeley
Computational and systems biology, biotechnology, computational chemistry

PHILIP B. DUFFY, *Associate Adjunct Professor*
A.B., Harvard University; M.S., Ph.D., Stanford University
Global climate change; climate modeling; detection of anthropogenic climate change; societal impacts of climate change

HENRY JAY FORMAN, *Professor*
B.A., Queens College of the City; Ph.D., Columbia University
Signal transduction, antioxidants and redox signaling, lung disease

JESSICA LEE GREEN, *Assistant Professor*
B.S., University of California, Los Angeles; M.S., Ph.D., University of California, Berkeley
Community ecology; scaling and spatial phenomena in ecology; theoretical ecology; conservation biology; microbial diversity

BOAZ ILAN, *Assistant Professor*
B.S.c., Ph.D., Tel Aviv University
Mathematics involved with real-world phenomena, with application to such areas as the control of intense laser beams and high-precision measurements of frequency and time, which employs modeling physical problems in terms of ordinary and partial differential equations and obtains detailed studies using functional analytic, asymptotic and perturbation analysis, and numerical computation

ANNE MYERS KELLEY, *Professor*
B.S., University of California, Riverside; Ph.D., University of California, Berkeley
Resonance Raman spectroscopy and microscopy, molecular photochemistry and photophysics, organic materials for nonlinear optics, modeling of spectroscopic data

DAVID F. KELLEY, *Professor*
B.S., Whitworth College; Ph.D., University of Washington, Spokane
Spectroscopy and dynamics of semiconductor nanoparticles, ultrafast spectroscopy of excited states and reactive intermediates, solvation effects on proton and electron transfer reactions, vibrational dynamics of gas phase molecules

ARNOLD D. KIM, *Assistant Professor*
B.S., Northwestern University; M.S., Ph.D., University of Washington
Wave propagation in random media, light propagation in tissues, wireless communications, scientific computing, asymptotic and perturbation methods

JENNIFER MANILAY, *Assistant Professor*
B.A., University of California, Berkeley; Ph.D., Harvard University
Mechanisms that control cell fate decisions in the immune system, the development of T lymphocytes, important components of immune defense against pathogens

MONICA MEDINA, *Assistant Professor*
B.S., Universidad de Los Andes, Bogota, Columbia; Ph.D., University of Miami
Phylogenetics and organelle genome evolution of marine invertebrate animals, genomics of coral-zooxanthellae symbioses in Caribbean reefs

MATTHEW MEYER, *Assistant Professor*
B.S., University of Kansas, M.S., University of Wisconsin, Ph.D., Texas A&M University
Temperature-dependent isotope effects used as a probe for enzyme dynamics in Soybean Lipoxygenase-1

KEVIN A. MITCHELL, *Assistant Professor*
B.S., Carnegie Mellon University; M.A., Ph.D., University of California, Berkeley
Nonlinear dynamics and classical/quantum chaos, with applications to atomic and molecular physics; semi-classical phase-space techniques; topological and geometric methods for low-dimensional systems; the geometric/Berry phase and gauge theory

ALEKSANDR NOY, *Associate Adjunct Professor*
B.A., Moscow State University, M.S., Ph.D., Harvard University
Nanosynthesis and single molecule imaging and measurements

PEGGY A. O'DAY, *Professor*
B.S., University of California, Davis; M.S., Cornell University; Ph.D., Stanford University
Aqueous, surface and environmental geochemistry; biogeochemistry and transport of inorganic contaminants in natural systems; geochemical applications of spectroscopy and microscopy; chemistry in hydrothermal systems

DAVID M. OJCIUS, *Professor*
B.A., Ph.D., University of California, Berkeley
Infection by intracellular pathogens, particularly Chlamydia trachomatis; interaction between infected cells and the immune system; mechanisms of cell death; innate immunity

RUDY MARTIN ORTIZ, *Assistant Professor*
B.A., M.Sc., Texas A & M University; Ph.D., University of California, Santa Cruz
Endocrine physiology; physiological adaptations in water and electrolyte homeostasis and fat metabolism during extreme conditions such as prolonged fasting and altered gravitational load

MARIA G. PALLAVICINI, *Dean, School of Natural Sciences and Professor*
B.S., University of California, Berkeley; Ph.D., University of Utah
Stem cell biology; genomic and proteomic abnormalities in cancer, particularly leukemia and breast cancer; relationships between genetic damage induced by chemical exposure and cancer development

MICHAEL A. SPRAGUE, *Assistant Professor*
B.S., University of Wisconsin, Madison; M.S., Ph.D., University of Colorado, Boulder
Development and use of mathematical models and numerical methods for studying time-dependent problems or practical importance; physical problems including fluid-structure interaction, rotating convection, geophysical fluid dynamics, turbulent flow, and structural dynamics; numerical methods including finite- and spectral-element methods, global spectral methods, and parallel computing

MAYYA TOKMAN, *Assistant Professor*
B.S., University of California, Los Angeles; Ph.D., California Institute of Technology
Numerical methods, scientific computing

SAMUEL J. TRAINA, *Director of Sierra Nevada Research Institute and Professor*
B.S., Ph.D., University of California, Berkeley
Surface, colloidal, and complexation chemistry in soils, sediments, and natural waters, remediation of contaminated soils and sediments

WILLEM J.M. VAN BREUGEL, *Adjunct Professor*
Ingeniur degree, Eindhoven University; Doctoraal degree, Ph.D., Leiden University
Distant massive galaxies, the effects of their central super-massive black holes on the galaxy-formation process, and the formation and evolution of the largest structures known in the Universe: clusters of galaxies

ANTHONY W.H. VAN BUUREN, *Associate Adjunct Professor*
B.Sc., Simon Fraser University, M.Sc., Ph.D., University of British Columbia
Synthesis and electronic structure of nanomaterials

ROLAND WINSTON, *Professor*
B.S., M.S., Ph.D., University of Chicago
Solar power and renewable energy, elementary particle physics, non-imaging optics

School of Social Sciences, Humanities and Arts

VIRGINIA ADÁN-LIFANTE, *Coordinator of Spanish Language Program and Lecturer*
Curso de Formación Pedagógica del Profesorado de Bachillerato y Formación Profesional, Licenciatura en Filología Hispánica, Universidad de Sevilla, Spain; Ph.D., University of California, Santa Barbara
Puerto Rican literature and Caribbean cultures, Spanish and Latin American women writers, the representation of domestic violence in the arts, and second language acquisition

MICHELLE M. CHOUINARD, *Assistant Professor*
B.A., University of California, Berkeley; M.A., Ph.D., Stanford University
Mechanisms of conceptual change in the context of conversational interaction, the role of children's questions in conceptual development, development of biological knowledge, language acquisition, the roles of positive and negative evidence in language acquisition, word learning and label extension in language acquisition

JAN GOGGANS, *Assistant Professor*
B.A., M.A., California State University, Sacramento; Ph.D., University of California, Davis
American literature, American nature writing and literature of the environment, California literature and culture, literature of the Central Valley, literature and culture of the Great Depression, literature and photography

KENJI HAKUTA, *Dean, School of Social Sciences, Humanities and Arts and Professor*
B.A., Ph.D., Harvard University
Psychology of bilingualism and second language learning, child development, psycholinguistics, education policy and equal educational access for minority students

EVAN HEIT, *Professor*
B.S.E., B.A., University of Pennsylvania; Ph.D., Stanford University
Categorization, inductive reasoning, recognition memory, computer simulation and mathematical modeling, intuitive statistical judgment

GREGG HERKEN, *Professor*
B.A., University of California, Santa Cruz; Ph.D., Princeton University
History, American diplomatic history, nuclear history and history of the Cold War

SHAWN E. KANTOR, *Professor*
B.A., University of Rochester; M.S., Ph.D., California Institute of Technology
Political economy, law and economics, U.S. economic history, economic development and public economics

SEAN MALLOY, *Assistant Professor*
B.A., University of California, Berkeley; M.A., Ph.D., Stanford University
The study of war and morality, American political history, utopian and extremist movements in the 1930s, the domestic sources of U.S. foreign policy, and the ways in which economics, religion, and culture shape Americans' interactions with the rest of the world

MANUEL M. MARTIN-RODRIGUEZ, *Professor*
Licenciatura, Universidad de Sevilla (Spain), M.A., University of Houston, Ph.D., University of California, Santa Barbara
Cross-disciplinary perspectives from cultural, ethnic and film studies, including identity formation, globalization and transnationalism, border studies, textual recovery, intra-cultural difference, the Hispanic context of Chicano/Chicana literature, popular culture and the mass media

TEENIE MATLOCK, *Assistant Professor*
B.A., M.A., California State University, Fresno; Ph.D., University of California, Santa Cruz
Cognitive science, psycholinguistics, spatial cognition, metaphor, semantics, gesture

RUTH MOSTERN, *Assistant Professor*
B.S., Georgetown University, M.A., Ph.D., University of California, Berkeley
World History, with a particular emphasis upon middle-period China and the history of the Song dynasty

ROBERT S. OCHSNER, *Director of Writing and Lecturer, UC Merced Writing Program*
B.A., Western Washington University; M.A., Ph.D., University of California, Los Angeles
Social and cultural issues of teaching "white" English, a research focus that joins ESL theory with social constructionist insights about the power relationships between teacher and student or among diverse students in groups

DUNYA RAMICOVA, *Professor*
B.F.A., Goodman School of Drama, M.F.A., Yale University School of Drama
Costume design and history of theater

BELINDA I. REYES, *Assistant Professor*
B.S., University of Illinois, Urbana-Champaign; Ph.D., University of California, Berkeley
Demography, immigration, immigration policy, immigrant adaptation, race and ethnicity, urban economics, and social and economic progress of race/ethnic minorities

CRISTIÁN H. RICCI, *Assistant Professor*
B.A., California State University, Los Angeles; M.A., Ph.D., University of California, Santa Barbara
Nineteenth and Twentieth Century Spanish literature; Nineteenth and Twentieth Century Spanish-American literature; Portuguese literature; Golden Age and Colonial literature

WILLIAM R. SHADISH, *Professor*
B.A., Santa Clara University; M.S., Ph.D., Purdue University
Clinical psychology, experimental and quasi-experimental design, meta-analysis, program evaluation, psychology of science

CAROL TOMLINSON-KEASEY, *Chancellor and Professor*
B.A., Pennsylvania State University; M.S., Iowa State University; Ph.D., University of California, Berkeley
Developmental psychology; development of cognitive potential

KATIE L. WINDER, *Assistant Professor*
B.A., Lewis and Clark College; Ph.D., John Hopkins University
Applied microeconomics, labor economics, economics of gender and discrimination, economics of welfare and poverty

J. ARTHUR WOODWARD, *Professor*
B.S., Wake Forest University; M.A., Ph.D., Texas Christian University
Experimental design, statistical genetics, applied statistics and psychometrics

JEFFREY YOSHIMI, *Assistant Professor*
B.A., University of California Berkeley; M.A., Ph.D., University of California, Irvine
Philosophy of mind, philosophy of cognitive science, phenomenology (especially Husserl) and neural networks