UCSB University of California, Santa Barbara
CHEMICAL ENGINEERING

ChE News

www.chemengr.ucsb.edu

SPRING 2009

Inside ...

ChE & NucE Alumni Reunion April 24-25, 2009

Dear ChE and NucE Alumni,

Spring is here which means -- our Alumni Executive Committee is planning the 2009 alumni get together. It is a great opportunity to reconnect with classmates and faculty, and to learn of exciting new developments in our Department. This year's event is scheduled for **April 24th and 25th**, in conjunction with the UCSB All Gaucho Reunion. So in addition to special Department events, you can participate in a host of complementary events sponsored by UCSB and the College of Engineering.

The main ChE/NucE-related activities (**all free**) for the weekend are:

Friday, April 24, 3-5 PM
ChE & NucE Alumni Reception
Mosher Alumni House

Meet with faculty and classmates, see posters, and learn about recent developments. The reception features a dynamic panel of alumni who will tell their "war stories" in a variety of industries: "Startups, Fire Sales, Mark-to-Market and Wine Making: True Stories of UCSB ChE's and NucE's in the Workplace".

5-7 PM
College of Engineering Reception
Engineering Science Building

Interactive exhibits, great food, and Santa Barbara County wines

Saturday, April 25, 10-11 AM
Informal ChE Get Together
Engineering II Courtyard

1-2 PM
Wine Presentation & Tasting *(location TBA)*
Presented by John Poulos (ChE, '83)

3 PM – Sunset
Family Picnic at Goleta Beach

5:30 PM
UCSB Alumni Awards Banquet
UCEN, Corwin Pavilion

The honorees include Duncan Mellichamp for the Honorary Alumni Award (he's going to be a Gaucho!) and Suzanne Mellichamp with a Special Recognition Award from the Alumni Association.

Pre-registration and payment are required.
www.ucsbalum.com/All_Gaucho_Reunion/alumni/awards.html

allGAUCHOreunion

For more information:
www.ucsbalum.com/All_Gaucho_Reunion
cheadmin@chemengr.ucsb.edu

Chair's Letter

Dear Alumni and Friends,

We have witnessed many changes in California during the last twelve months, one of them was the transition from Gary Leal to me as the Chair of Chemical Engineering at UCSB. This completed Gary's second term, and thirteenth year as Chair; from 1989-1998 and from 2004-2008. Nobody else has had such a huge impact on the development and elevation of the department in recent years as Gary, and his record of accomplishment speaks for itself. Let me, therefore, take this opportunity to thank Gary for his outstanding leadership of our department and to wish him well in his continuing roles of scholar, teacher, and editor of *Physics of Fluids*.

I intend to carry on the traditions established by Gary of hiring the most outstanding faculty, and encouraging research and teaching of the highest quality. The future of chemical engineering is in prediction, not correlation, and this is where I see one of the department's greatest strengths. Correlations were an important development relative to an earlier era, and remain an important aspect of the engineer's repertoire. Over the last fifty years, our profession has perfected methods for correlating experimental data for reaction rates, activity coefficients, crystal growth rates, nucleation rates, etc., which provide the foundation for both product and process design. However, only rarely has the profession managed to predict these rates. Predictions assist in making experiments more directed and faster, and they can be especially helpful for product and process invention and design. Predictions are based on a deep understanding of mechanism, experimental facts, and the fundamental underlying physical and biological properties of the system. To be successful requires close collaboration between science and engineering, between experiments and theory, between theory and simulation, etc. And this plays to our strengths. Santa Barbara is renowned the world over for its unique atmosphere of collaborative research at the forefront of science and engineering. The fruit of this research informs our teaching and provides both undergraduates and graduates an evolving curriculum at the vanguard of chemical engineering. We want to produce knowledge that changes the way people think.

Research such as I have just described is difficult, brave, and cannot be rolled out like laying carpet. Such ambitious research cannot be scheduled, and milestones can be a moving target. All of which is completely out of step with current funding models, which are schedule-driven and mission-oriented; or in many cases, training-oriented. Without a Gant Chart there is little chance of getting your proposal funded! Which raises the unanswerable question, "when are you going to schedule your next invention?" Our nation is no longer geared to funding long-term, brave thinking research. Students are the main losers since their funding is tied almost exclusively to short-term research grants.

I have concluded that to prepare for the future of high-impact research and teaching, the top departments of chemical engineering will need to attract significant endowment funds to support students engaged in cutting-edge research. Only this way will our students and faculty be able to work on the most pressing problems in energy, catalysis, pharmaceuticals, fluid turbulence, homeland security, etc. Our department needs to support a minimum of 15 such scholarships for doctoral students, and a similar number for undergraduates in perpetuity. We already attract the very best students at both levels and we owe it to them, to the state and the nation, to provide them with an education equal to their ability.

These are challenging times to be seeking endowment funds, but they are for a high purpose and our case rests on a foundation of success that few departments can match. This will be the overarching project for my time as Chair and I will keep you informed about our progress in future newsletters.

Please send me your thoughts and comments on what I have said.

Thank you and best wishes,
Mike Doherty, Chair

Honors and Awards

Todd Squires was named a 2008 Beckman Young Investigator, which offers three years of research funding with considerable freedom. He will develop a portable microfluidic system that exploits nonlinear, electrically-driven flows.

Susannah Scott was elected as a Fellow of the AAAS based on her pioneering research on applications and quantitative characterizations of catalysts for olefin polymerization and metathesis.

Baron Peters was awarded an ACS/PRF "Doctoral New Investigator" grant for work on the mechanism of CH3ReO3 activation for olefin metathesis on amorphous silica-alumina".

Michael Doherty was the recipient of two named lectureships, the 2008 Centennial Lecture at Imperial College in London, and the 2008 Abbott Lecture at Rensselaer Polytechnic Institute. In addition, he was recognized by the AIChE as one the "One Hundred Chemical Engineers of the Modern Era".

Joe Zasadzinski was named as a Fellow of the American Physical Society in the Division of Biological Physics for creating well-controlled lipid structures for biomedical applications and developing new microscopies for their characterization.

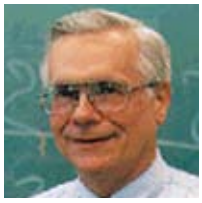
Glenn Fredrickson delivered two named lectures during the past year, the 2008 Richard S. H. Mah Lectures at Northwestern University, and a 2009 Texas Distinguished Faculty Lecturer in Chemical Engineering at the University of Texas at Austin.

Jacob Israelachvili was recognized by the AICHE as one of the "One Hundred Chemical Engineers of the Modern Era". He was also awarded the 2009 ACS National Award in Colloid and Surface Chemistry.

Michael Gordon was awarded an ACS-PRF Doctoral New Investigator grant for research on near-field vibrational spectroscopy and imaging of chemical species on individual nanoparticles during catalytic (de) hydrogenation.

Samir Mitragotri received the Controlled Release Society's Young Investigator award for his contributions to the science, technology, and innovation of delivery of bioactives. He was also selected as an invited speaker at the U.S.Frontiers of Engineering Symposium sponsored by the NAE.

Dale Seborg was elected to the Process Automation Hall of Fame sponsored by Control Magazine. The award was presented at the 2008 World Batch Forum conference in Philadelphia.



Ed Kramer has been elected a Fellow of the Materials Research Society for his distinguished research accomplishments and outstanding contributions to the advancement of materials research, world-wide. The maximum number of new Fellow appointments each year is limited to 0.2% of the current MRS membership.

Frank Doyle was made a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), for "contributions to nonlinear process control and analysis for biological systems".

Faculty Research

FRANK DOYLE's research interests are in systems biology, network science, modeling and analysis of circadian rhythms, drug delivery for diabetes, model-based control, and control of particulate processes. His biomedical control work includes ongoing clinical trials at the local Sansum Diabetes Research Institute, where his group is developing the algorithms for an artificial (closed-loop) pancreas for patients with type 1 diabetes. He brings a control & dynamics perspective to the field of systems biology, where mathematical modeling and robustness analysis tools are being applied to circadian rhythms, coral marine biology, type 2 diabetes and Alzheimer's disease.

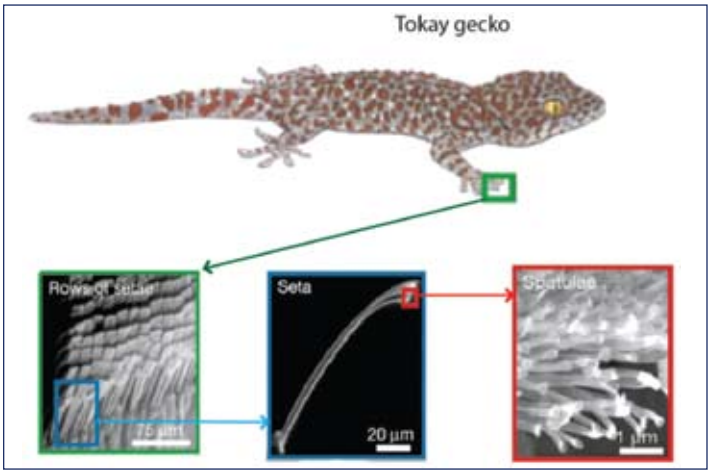
Frank is the Associate Director of the Institute for Collaborative Biotechnologies, a uniquely interdisciplinary, powerful alliance of Academia, Industry and the Army. Originally awarded a 5 year/$50M Army contract in 2003, the ICB was recently renewed for another 5 years with an $84M budget. Its mission is to accelerate Army Transformation through biotechnology. Led by UCSB, in collaboration with MIT, Caltech, the Army and industry partners, the ICB transforms biological inspiration into technological innovation. Inspired by the study of the amazing processes, structures and features found in nature and biology, ICB research teams develop revolutionary technological innovations in many areas that include" bio-inspired materials and lightweight portable energy; and biomolecular sensors.

Frank is originally from Delaware, and moved his California-native wife, Diana, and three kids to Santa Barbara in 2002, where they take advantage of outdoor activities including hiking, soccer, and sailing.

For more information, see his web site:
www.chemengr.ucsb.edu/people/faculty_d.php?id=18

JACOB ISRAELACHVILI's research interests are in the general area of intermolecular, intersurface and interparticle forces in biological, complex fluid and materials systems. He uses various experimental techniques to directly measure the forces Israelachvili's research interests are in the general area of intermolecular, intersurface and interparticle forces in biological, complex fluid and materials systems. He uses various experimental techniques to directly measure the forces between surfaces in liquids and vapors at the molecular level. He also studies non-equilibrium interactions, which are particularly relevant to biological systems (areas known as bioadhesion, biomechanics and biodynamics). The aim of Israelachvili's studies is to gain insights into the fundamental interactions in complex colloidal, interfacial and biological systems that also have technological applications.

For example, he is currently studying the way geckos move rapidly on walls and ceilings, where each step leads to strong adhesion, followed by equally rapid detachment, on almost any surface, smooth or rough – all within 20 ms. To rapidly adhere is not that particularly remarkable, but to detach with equal rapidity is. Moreover, geckos can do this on vertical walls, where there must also be strong friction forces to prevent them from sliding. The rapid high adhesion (attachment) and equally rapid detachment have been found to be due to the way the gecko moves its whole body, its legs, feet and toes, down to the fine structures of the toe pads which in turn contain arrays of thousands of micron-sized



stalks (seta) terminated by millions of finger-like pads (spatulae) having nano-scale dimensions (see figure). During this complex articulated and well-coordinated motion the gecko continually converts strong friction forces to strong adhesion forces, and vice versa.

For more information, see his web site:
www.chemengr.ucsb.edu/people/faculty_d.php?id=13

External Advisory Board

The UCSB Department of Chemical Engineering greatly benefits from the expertise and advice of its External Advisory Board. The EAB first convened in February 2004, and annually thereafter, to work with the Department to achieve our goal of being consistently ranked among the top five chemical engineering programs in the United States. The Board provides a crucial role in advising the Department on strategic relationships with industry, curriculum at both the undergraduate and graduate level, directions of future faculty hires, our reputation in academic and professional chemical engineering circles, and other strategic topics.

The Board convenes its annual meeting in the Spring Quarter at UCSB, and works closely with the faculty, the administration, the undergraduate students, the graduate students and the staff to review the Department's activities and strategic plan, and to provide valuable feedback.

The Board members include distinguished academics from peer institutions, as well as senior-level corporative executives from the industries of direct relevance to our chemical engineering students (see table). Over the course of its history, this distinguished Board has included Presidents and CTOs from industry, as well as Deans and Provosts from academia. The Department is particularly pleased to recognize the UCSB alumni on the Board: Darryl McCall (BS '78, Chemical Engineering), Ron Kiskis (BS '70, Chemistry), and Deborah Leckband (PDF '83, Chemical Engineering).

External Advisory Board Members, 2009

Academic

Dr. Frank S. Bates, Distinguished McKnight University Professor and Head of Chemical Engineering and Materials Science, University of Minnesota

Dr. Sangtae Kim, Donald W. Feddersen, Distinguished Professor, Schools of Engineering, Purdue University

Dr. Deborah E. Leckband, Reid T. Milner Professor, Chemical & Biomolecular Engineering, University of Illinois Urbana-Champagne

Dr. William Russel, Arthur W. Marks '19 Professor, Dean of the Graduate School, Chemical Engineering, Princeton University

Dr. George Stephanopoulos, Professor, Chemical Engineering Department, Massachusetts Institute of Technology

Industry

Mr. Darryl McCall (Chair), Executive VP Operations, Coty, Inc.

Mr. Robert Abrams, President, CV Holdings, LLC

Dr. Montgomery Alger, Vice President and CTO, Air Products and Chemicals, Inc.

Dr. Thomas M. Connelly, Senior Vice President and Chief Science & Technology Officer, DuPont Experimental Station

Dr. Ronald C. Kiskis, President, Global Oronite Chevron Corporation

Dr. Charles T. Kresge, Global R&D Director for the Chemical Sciences Capability Corporate Research & Development, Dow Chemical Company

Dr. Thomas J. Stanley,PhD, GE Plastics / GM Technology

AIChE Student Chapter Update

Dear Alumni, Friends, and Family,

In the past, our AIChE student chapter has strived to supplement our undergraduate education by providing members with information and experiences related to industry, offering career workshops, and hosting social events. This year we developed a five-year plan that seeks to not only improve our programs in these three areas, but to also broaden our chapter activities to include community service, active fundraising, a dedicated mentor program, and information about graduate school, as well as to provide students a voice within the department. To specifically target these areas, we created eight new officer positions including Internal V.P., External V.P., Historian, and five committee chair positions: Community Service, Fundraising, Public Relations, Mentor, and Professional Development.

Our success so far has been impressive. With few exceptions, we have been able to put on or actively attend one event each week, leading to a membership base of more than 120 students. We have held info sessions for Amgen, Chevron, Clorox, OSIsoft, Proctor and Gamble, Raytheon, and Fluor. We have co-sponsored several résumé and interview workshops with the Society of Women Engineers (SWE). Five of our members also flew to Philadelphia to attend the AIChE Annual Meeting and to represent our chapter in the national ChemE Car competition. For social events, we have hosted numerous BBQs and movie nights, as well as a monthly AIChE Happy Hour at Giovanni's Pizza. For community service, we have participated in Habitat for Humanity volunteer days, collected money for Proctor and Gamble's Pure Water Campaign aimed at providing clean water to people living in developing countries, and created a Relay for Life team.

To encourage communication between the department and students, two AIChE officers now are members of the Undergraduate Affairs Committee (UGAC).

And we're not done yet … Future activities include: tours of Proctor and Gamble, Frito Lay, Clorox, Chevron, Dupont Displays, Amgen, and the Firestone Brewery; a series of financial planning workshops designed to teach students about investing, and a wine tasting with UCSB ChE '83 graduate, John Poulos from the Sunstone Winery, volunteering at Science and Technology Day at which 1000 middle school and high school students come to UCSB, and attending beach clean-ups around Santa Barbara.

Of course, our chapter would not be so successful without technical and financial support from companies, the department, and active alumni. If you are interested in helping our chapter continue to grow, please visit our website for information: www.engineering.ucsb.edu/~ceweb/org/aiche/.

Sincerely,
Laurel Wixson
AIChE Student Chapter President

AIChE Student Chapter Officers (2008-09)

President: Laurel Wixson (senior)
External Vice President: Jackie Nguyen (junior)
Internal Vice President: Florencia Rusli (senior)
Treasurer: Shaun Orr (senior)
Secretary: Kylie Wolf (senior)
Historian: Samantha Figueroa (freshman)
Fundraising Chair: Andrew Nguyen (sophomore)
Social Chair: Diego Carrasco (senior)
Mentor Chair: Kate Fountaine (junior)
ChemE Car Chair: Andrew Gasperini (junior)
Professional Development Chair: Nancy Annunziato (junior)
Public Relations Chair: Neil Tandon (senior)
Community Service Chair: Fernanda Wolf (sophomore)
Senior Representatives: Steven Nancarrow, Ari Nachison
Junior Representatives: Andrew Gasperini, Matthew Shaner
Sophomore Representatives: Samuel Shaner, Amelia Bagheri
Freshmen Representatives: Laurel Hopkins, Martin Bryant
Faculty Advisor: Baron Peters

Graduate News

Congratulations to our Eighteen 2007-08 PhD Graduates

George Athens
Advisor: Brad Chmelka
Dissertation: Controlling Acidity and Hydrophilicity in Mesoporous Materials by Surface Functionalization: Applications to Ion-Conducting Membranes and Acid Catalysis

Dana Rachael Breed
Advisor: David Pine
Dissertation: Engineered Colloids: Patchy Particles with Reversible, Directional Interactions

Karen Dane
Advisor: Patrick Daugherty
Dissertation: Isolation of Specific Tumor Targeting Peptides from Fluorescent Bacterial Display Libraries

Cori Ann Demmelmaier
Advisor: Susannah Scott
Dissertation: Activation of Heterogeneous Catalysts for the Production of Polyethylene

Mustafa Dokucu
Advisor: Frank Doyle
Dissertation: Reduced Order Methodologies for the Control of Particle Size Distribution in Emulsion Polymerization

Jon Charles Gunther
Advisor: Dale Seborg
Dissertation: Process Monitoring in Fed-Batch Bioprocesses

Sejal Sampat Hall
Advisor: Samir Mitragotri
Dissertation: Screening Combinatorial Peptide Libraries in Complex Mixtures for Applications in Therapeutic Delivery and Molecular Diagnostics

David Harley Klein
Advisor: Gary Leal
Dissertation: Dynamics of a Model for Nematic Liquid Crystalline Polymers in Planar Shear Flow

Won Bo Lee
Advisor: Glenn Fredrickson
Dissertation: Self-Consistent Field Theory for Inhomogenous Polymers with Reversible Bonding

Mehmet Mercangoz
Advisor: Frank Doyle
Dissertation: Plantwide Control and Optimization of a Pulp Mill Process

Anthony William Moses
Advisor: Susannah Scott
Dissertation: Effects of Precursor/Support Interactions in Heterogeneous Olefin Metathesis Catalysts

Sumit Paliwal
Advisor: Samir Mitragotri
Dissertation: Studying Biophysical Interactions of Ultrasound to Design Novel Therapies for Skin

Jeffrey James Rice II
Advisor: Patrick Daugherty
Dissertation: Development and Optimization of Bacterial Display Methodologies for Peptide Library Screening

Jacob Paul Sizemore
Advisor: Michael Doherty
Dissertation: Morphology Change of Molecular Organic Crystals via Molecular Imposters

Ryan Matthew Van Zanten
Advisor: Joseph Zasadzinski
Dissertation: Characterization of the Phase Behavior and Elastic Properties of Surfactant Bilayers

Kathryn Ann Whitehead
Advisor: Samir Mitragotri
Dissertation: Safe and Effective Methods for Improving the Oral Delivery of Macromolecules

Xia You
Advisor: Patrick Daugherty
Dissertation: Screening Protein-Ligand Interactions Intracellularly Using FRET Hybrids

Hongbo Zeng
Advisors: Gary Leal and Jacob Israelachvili
Dissertation: Interactions of Polymer Surfaces and Thin Films

Welcome Incoming Graduate Students

Christopher Carach
Undergraduate Institution: Case Western Reserve
Advisor: Gordon

Stephen Donaldson
Undergraduate Institution: Virginia Tech
Advisors: Chmelka/ Israelachvili

Natalie Forbes
Undergraduate Institution: Brown University
Advisor: Zasadzinski

Chia-Chun Fu
Undergraduate Institution: National Taiwan University
Advisor: Leal

Brian Giera
Undergraduate Institution: Purdue University
Advisor: Squires

Rebecca Harvey
Undergraduate Institution: Northeastern University
Advisor: Doyle

Sunyia Hussain
Undergraduate Institution: Johns Hopkins University
Advisor: Han

Taeho Hwang
Undergraduate Institution: Illinois Institute of Technology / Ajou University
Advisor: Scott

Louis Jones
Undergraduate Institution: UC Berkeley
Advisors: Chmelka/Gordon

Dong-Woog Lee
Undergraduate Institution: KAIST
Advisor: Israelachvili

Katie Megley
Undergraduate Institution: Northeastern University
Advisor: Tirrell

Zoltan Mester
Undergraduate Institution: University of Massachusetts
Advisor: Fredrickson

Joel Paustian
Undergraduate Institution: University of Minnesota
Advisor: Squires

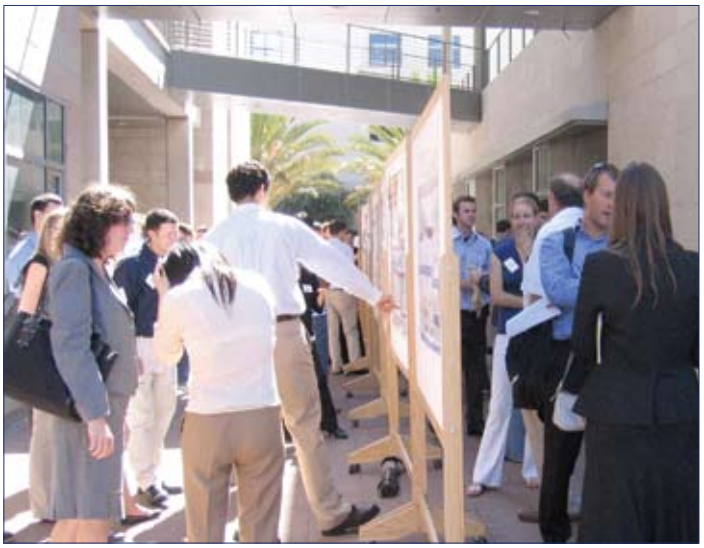
Mansi Seth
Undergraduate Institution: University of Mumbai
Advisor: Leal

Ting Ann Siaw
Undergraduate Institution: University of Chicago
Advisor: Han

Bradley Spatola
Undergraduate Institution: University of Missouri
Advisor: Daugherty

Graduate Student Symposium

On October 10, 2008, the department held with great success its first-ever Graduate Student Symposium, a day-long department-wide event that featured talks by 11 senior graduate students and a lunchtime poster session with entries from groups all throughout the department. Nearly all of the department faculty, graduate students, and postdocs participated, as well as a number of representatives and colleagues from industry. The Symposium is a new yearly tradition designed to showcase department research, bolster cross-interactions within the department and with industry, and allow graduate students to present their work in a public forum. Each year's event is organized entirely by a team of senior students; this year's committee members included Mark Kastantin, Kevin Cash, Derek Griffin, Sophia Kenrick, Matthew Percival, and Jerry Thomas. This year we had about 10 participants from industry, and we hope to expand that number in 2009. Amgen sponsored prizes for the 2008 event; Jerry Thomas won the award for best talk, and Ryan Depuit and Ian Shieh tied in the award for best poster. More information and photos for the 2008 and upcoming 2009 Symposiums can be found at www.chemengr.ucsb.edu/~ceweb/gss/.



Alumni Executive Committee

The Chemical Engineering Alumni Executive Committee is an informal group of alumni, professors and support staff who represent different graduating classes across the history of the department. The group was first formed in 2006 in order to plan and execute the celebration of the 40th Anniversary of the department and to create and fund the Rinker Laboratory Endowment.

The committee is united in pride and admiration for the great progress the department has made to become a leader the field and a truly world-class institution. Such an institution deserves a world-class alumni organization.

The committee seeks to unlock the power of the alumni network to create a culture of involvement and philanthropy. Most of the activity of the committee revolves around planning and participating in the annual reunion weekend events. The committee is seeking representatives from other classes to further represent the legacy of graduates from the department. Time commitment for members is minimal and usually involves less than a half dozen conference calls a year and involvement in the reunion weekend.

The Alumni Executive Committee and their affiliations are shown below. Alumni interested in participating in AEC activities should contact either co-chair: John Poulos (mjpoulos@verizon.net) or Kelly Brodbeck (kbrodbeck@vapore.com).

2009 UCSB Chemical Engineering Alumni Executive Committee

Name	UCSB Degree	Affiliation
Kelly Brodbeck (co-chair)	MS 1986	CEO of a medical device company, Vapore Inc.
John Poulos (co-chair)	BS 1983	Semi-retired, biopharmaceutical industry
Justin Butler	BS 2007	Process Engineer, DuPont Lighting
Ladan Lynn Foose	B.S. 2003	PhD Student, ChE Dept, UC-Berkeley
Darryl McCall	BS 1978	Executive VP Operations, Coty, Inc.
Marc Privitera	BS 1986	VP Engineering, Biofuels Inc.
Michael Saucier	BS 1983, MS 1984	CEO, Transpara Corporation
Robert Young	PhD 1988	Advanced Control/Process Automation Supervisor, Exxon Mobil Corporation
Ex-Officio Members		
Frank Doyle	Faculty member	Professor and Associate Dean for Research
Marie Howell	College of Engineering	Alumni Programs Manager
Dan Oh	UCSB Development Office	Director of Development and Alumni Relations, Engineering and the Sciences
Dale Seborg	Faculty member	Professor and Vice Chair
Laurel Wixson	ChE Senior	President, AIChE Student Chapter

Alumni News

Kelly Brodbeck is currently the CEO of Vapore Inc., a medical device company commercializing home and hospital inhalation products based on its proprietary Capillary Force Vaporizer (CFV) technology. He has previously held senior level business and technical management positions at Enron, United American Energy, Ecolab and Clorox. His experience includes transaction structuring, technology commercialization, R&D management, operations management and business acquisition and integration. Kelly received his B.S. degree in chemical engineering from UC-Berkeley and his M.S. degree in chemical engineering from UCSB where he conducted research on novel techniques for lung cancer detection using photodynamic therapy. He holds two issued patents. Kelly and his wife Lesli (UCSB '85) celebrated their 20th wedding anniversary this year at their second home on Maui. They have two children who will be submitting their applications to UCSB in the next few years.

Michael Saucier has MS ('84) and BS ('83) degrees in ChemE, as well as a BA in Chemistry, all from UCSB. For over twenty years, Michael has led technology innovation in the process industries and has founded three and sold two software companies. His current company Transpara (www.transpara.com) helps major corporations create operational transparency and workforce agility by delivering real-time decision-support data to stakeholders over iPhones, SmartPhones, and Blackberries. Michael served as VP of worldwide marketing and business development at OSIsoft after his previous company (Sequencia) was acquired by OSIsoft in 2002. Previously, Michael founded PID which was sold to Rockwell Automation in 1998. Michael served for many years on standards bodies such as ISA S88/S95, and he founded the non-profit World Batch Forum (www.wbf.org) to promote them. Michael is an energetic speaker on strategic business and technology issues, and has presented at corporate, partner, industry and analyst conferences worldwide. His fabulous wife Kara and their beautiful daughter Sierra live in Pleasanton, CA where they all enjoy playing golf.

We wish to acknowledge and thank these special friends to the Department of Chemical Engineering: January 1 – December 31, 2008

Individuals

John Belden
Kelly and Lesli Brodbeck
Sean Christiansen
Edgar Coscolluela
Michael Costello
Jacob and Fenny Dane
James Heslin and Rose Hau
Mark and Stephanie Huebsch
Kathryn Kelly
Gary and Mary Leal
Darryl McCall and Miren Letemendia
Melanie and Chris McNeil
Duncan and Suzanne Mellichamp
John Poulos and Martha McCabe
Mr. and Mrs. Arnold Miyamoto
Charles & Annette Orella
Warren and Katharine Schlinger
Dale and Judy Seborg
Amy Smiley
Edward and Susan Ticken
Jay and Julie Zeilenga

Corporations/Foundations

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Arnold and Mabel Beckman Foundation
The Camille & Henry Dreyfus Foundation, Inc.
Catalytic Solutions
Exxon Research and Engineering Company
International Fine Particle Research, Inc.
Merck & Co., Inc.
Merck Company Foundation
Procter & Gamble
Warren G. and Katharine S. Schlinger Foundation
Weyerhaeuser Company

How You Can Help

Your Name: _____

Your Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email Address: _____

Would you like to help the Department of Chemical Engineering?

With the generous support of our parents and friends, we can continue supporting the cutting edge research programs, and education of our deserving students.

- **Scholarships**
- **Fellowships**
- **Laboratory Equipment and Needs,**
- **Special Seminars**
- **Research Program Support**

For more information on how you can help, please contact:

Michael Doherty, Chair
Chemical Engineering
(805) 893-5309
mfd@engineering.ucsb.edu

Or **Dan Oh**
Assistant Dean of Development,
Engineering and the Sciences
(805) 893-7223
dan.oh@ia.ucsb.edu

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Thank you for your generous gift!

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☐ Roger Rinker Endowment

☐ Please use my gift for the following: _____

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