

# CHEMISTRY

## BIOCHEMISTRY

For past and present students and friends of Chemistry and Biochemistry at California State University, Long Beach • Fall 2005 • Number 30

## In Memoriam: **Dr. Kenneth L. Marsi**

December 13, 1928 – August 20, 2005

**D**r. Kenneth L. Marsi, former professor and chairman of the department, died Saturday, Aug. 20, in Dana Point, Calif., after a prolonged battle with a brain tumor. He was 76 years of age. Marsi is survived by Irene, his wife of 50 years; his four children, Marianne, Scott, Brian and Teresa, and their spouses; and eight grandchildren.

Graveside services were held on Aug. 25 in his hometown of Los Banos, Calif. A memorial celebration was held on Aug. 27 at St. Mary's Episcopal Church in Laguna Beach. In addition to Marsi's family, many friends, former students and colleagues filled the church sanctuary.

Kenneth Larue Marsi was born on Dec. 13, 1928 and raised in Los Banos. Marsi met Irene Gutschenritter of Nortonville, Kan., while in graduate school at Kansas University. They were married in 1955. Marsi distinguished himself as a devoted husband and father, and was an active and involved participant in the Episcopal church in Long Beach and Dana Point, Calif., as well as a leader in the scientific business and education communities in Long Beach. He was an avid gardener and a lover of music.

Dr. and Mrs. Marsi opened up their home to a number of CSULB students without financial means so that they could pursue their educations. At his retirement, Marsi, faculty, family and friends established the Kenneth L. Marsi Scholarship at California State University, Long Beach to assist outstanding junior and senior chemistry or biochemistry majors. He also established an

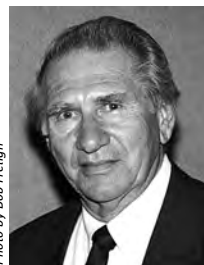


Photo by Bob Freiligh

endowment at Kansas University to aid students seeking degrees in chemistry.

Marsi was a graduate of San Jose State University and went on to receive his Ph.D. in

organic chemistry from Kansas University. Most of Marsi's professional career was served as a faculty member in the Department of Chemistry and Biochemistry at California State University, Long Beach, where he was a professor of chemistry for 35 years and department chairman for 21 years, until he retired in 1996. Marsi continued to teach organic chemistry in the department on a part-time basis until 2002. During his professional life, Marsi authored 32 research publications, co-authored a

textbook, authored more than 60 book reviews, and presented 40 papers at scientific meetings. He was sought for the review of textbooks and scientific papers prior to their publication. His expertise and advice were sought by colleges and universities across the country to review chemistry departments for improvement recommendations and in preparation for accreditation.

As an educator and advising professor, he introduced organic chemistry to over 11,000 undergraduate students, and mentored and supported 16 graduate students, who went on to receive master's degrees under his guidance. In 1984 he was named University Outstanding Professor and statewide Trustees Outstanding Professor in 1985. He received the TRW Distinguished Professor Award and was twice the recipient of the College of Natural Sciences and Mathematics Mayfield Outstanding Professor Award.

Memorial donations may be made to the Kenneth L. Marsi Scholarship through the Department of Chemistry and Biochemistry, California State University, Long Beach, 1250 Bellflower Boulevard, Long Beach, CA 90840-3903.

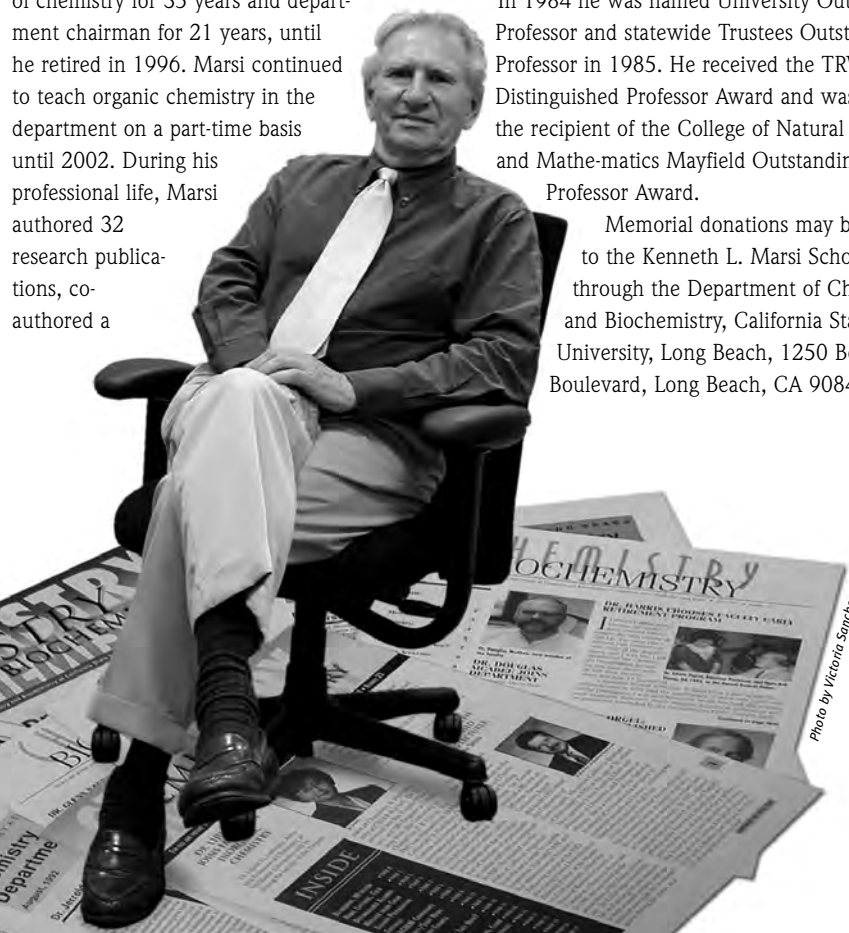


Photo by Victoria Sanchez

# Message by the Dean

Photo by Victoria Sanchez



I arrived in the Dean's Office two years ago during tight budget times. As I've reflected back over this time, it seems that we've "survived" in pretty good shape. In fact, in some ways, I think it helped us define our priorities and what is really important. The highest priority for the Division of Academic Affairs was to maintain quality programs and the availability of classes for students so they could make good progress towards completing their degrees and graduate. The faculty and staff in all the college departments are to be congratulated for going the extra mile to help achieve this goal. Our college did a really good job in continuing to provide a high-quality education for our students.

With a projected increase in enrollment for the fall of around 2.4 percent and the California legislature's approval of the chancellor's compact with Governor Schwarzenegger for the CSU system, we anticipate additional funding that will begin to restore areas that were cut in the past three to four years. This compact provides the CSU with increased funding beginning in 2005-06 and continuing through 2010-11. There will be an increase of 3 percent to our base budget in each of the first two years and a 4 percent increase in subsequent years. Some money has already been funneled into departments to increase quality of programs.

The Department of Chemistry and Biochemistry was the recipient of funding for the 2005-06 academic year to help reduce the number of students per laboratory section in Chem 101 and 111A by offering more sections. Both of these general chemistry courses can be difficult for new college-level students. With fewer students per lab, teaching associates and faculty members can spend more time with students individually. Funding was also awarded to provide training for the teaching associates to better facilitate learning

in the laboratories and for curricular revisions in the two courses. Chem 111A is required for all sciences majors, so successful completion of the courses is very important for progress and retention of our students.

I congratulate the many faculty members in the department who have been successful in bringing in funding to support student and faculty research programs as well as teaching in the classroom. These include numerous individual grants, as well as funding from the W. M. Keck Foundation to set up a Center for Education in Proteomic Analysis and funding from the National Institutes of Health to support biomedical research for faculty and underrepresented minority students. We thank all of you—faculty, staff, students, alumni and friends—who have also contributed in some way to the teaching and research programs for our students. State funding only covers part of the cost to provide quality programs for students, so we are appreciative of those who want to be part of CSULB and ensure that the degrees earned by our students continue to be of high value.

The college continues to be an exciting place to work and study. Enrollments are up as CSULB continues to be a campus of choice for high school and transfer students. This is reflected in higher enrollments in all courses in the Department of Chemistry and Biochemistry—majors, general education and service courses. This is exciting to see for the department, but

also a challenge for the faculty to provide the needed courses and to accommo-

date students trying to get in. Our faculty is growing slightly as hiring surpassed retirements this year. We have seven new faculty members joining us in the Departments of Biological Sciences (one), Chemistry and Biochemistry (one), Mathematics and Statistics (two), Physics and Astronomy (one), and Science Education (two). These faculty members bring new ideas, expertise and enthusiasm; are excited about teaching and research; and quickly become active contributors to programs within their departments and the college.

One of the highlights of the past year was our move into the Molecular Life Sciences Complex (MLSC). This new building provides state-of-the-art teaching and research space for faculty in the Departments of Biological Sciences and Chemistry and Biochemistry. We have certainly taken a giant leap in improved infrastructure for faculty and student research with this building and the accompanying new equipment. I indicated last year that a second new building was in line for the college. We are well into the design phase of this building, which will replace PH3. It will be about 30 percent larger than MLSC and will house the rest of the Department of Chemistry and Biochemistry as well as the other science departments and science education. Having now seen how nice it is to have new facilities and how conducive it is to teaching and learning, we are really looking forward to the completion of the second new building so we all can move in.

I find CSULB and the College of Natural Sciences and Mathematics a great place to work. Lots of good things are happening here, and I invite alumni and friends to visit and join us for events on campus. We, along with all of you, look forward to another exciting and productive year.

# Remarks by the Chair

Photo by Victoria Sanchez



The 2004-05 academic year has been significant for the department. We have added one new full-time faculty member, and our course enrollments and number of student majors are the largest we have enjoyed for several years. We have been blessed with excellent leadership in Dean Laura Kingsford, who has deftly guided the college through very difficult financial times over the last few years while expanding many important college programs and activities. Faculty in our department have acquired significant research and equipment grants this past year, which will greatly benefit department research programs for its faculty and students.

## DEPARTMENT FACULTY AND STUDENTS

We are very pleased that the search for a physical chemist was successfully completed with the hiring of Dr. Brian McClain. McClain has completed a post-doctoral fellowship at Stanford University and joins our faculty this fall as an assistant professor. His research area interfaces biochemistry and physical chemistry, and he has demonstrated excellent abilities as a teacher. We are fortunate to have him as a member of our department.

With the addition of McClain, the number of junior (nine), senior (11) and emeritus (four) faculty in the department is at its largest in several years. At the beginning of the 2005-06 academic year, our faculty members include three analytical chemists (Anjo, Slowinska, Slowinski), six biochemists (Acey, Cohlberg, McAbee, Merryfield, Myers, Weers), three inorganic chemists (Bu, Li, Po), eight organic chemists (Berryhill, Buonora, Goldish, Loesch, Lopez, Maricich, Marinez, Nakayama) and five physical chemists (Baine, Brazier, McClain, Mezyk, Senozan). This next year, we will be searching for a new organic chemist. This strong group of faculty provides both excellent instruction and research opportunities for our undergraduate and graduate students.

Another strong class of students graduated this year from our B.S. chemistry, B.S. biochemistry, and B.A. chemistry programs. Our most recent group of department alumni are pursuing careers in medicine, pharmacy, dentistry, biotechnology, pharmaceuticals, teaching, and forensics, and many have entered M.S. and Ph.D. programs for advanced study. I am pleased to report that enrollments in our undergraduate courses increased significantly this past year, a trajectory that extends into the 2005-06 academic year and includes lower- and upper-division major courses as well as non-major service courses (e.g., nursing chemistry).

## RESEARCH AND EQUIPMENT GRANTS

I am also pleased to report that our department faculty have brought in significant research and equipment grants this past year. These have included, among others, research grants from the American Chemical Society-Petroleum Research Fund, Research Corporation and the National Institutes of Health. The college successfully renewed its NIH SCORE grant, which included large research grants to Drs. Bu, Li, Marinez and Weers. In addition, the department was able to renew its NIH RISE grant, which will allow us to provide research and stipend support for a large number of our undergraduates, and we congratulate Dr. Lopez (RISE grant PI and program coordinator) for his hard work in acquiring this important grant. Very recently, the college received a \$500,000 grant from the W.M. Keck Foundation to help establish a facility for research and education in proteomics, which will be part of the IIRMES microchemistry core facility for the entire CSU.

A large portion of the Keck funds, matched by the college, will be used to purchase a matrix-assisted laser desorption-ionization time-

of-flight (MALDI-TOF) mass spectrometer and suite of related instruments that will allow for high-throughput proteomic analysis on our campus. To our knowledge, this is the first MALDI-based mass spectrometer facility in California designated for hands-on use by faculty and students in research and instruction. As principal investigator on this project, I am greatly indebted to Dr. Zed Mason (Co-PI, Department of Biological Sciences) for his efforts in making this proteomics facility a reality. Thanks also goes to Dean Kingsford and David Corey (college development officer) for all their assistance in this process.

## FACILITIES

The department will be starting its second full year using the Molecular Life Sciences Center (MLSC), which has received very positive reviews from faculty, staff and students. This past year, a large fraction of the department's laboratory courses were taught in the MLSC, including CHEM 111B, 251, 320B, 420, 443 and 449. For a week this past summer, it even served as a set for the filming of an episode of the television series "Nightstalker." This next year, CHEM 451 and a new inorganic laboratory course, CHEM 332, will be taught in this facility.

As the department completes its first full year with most of its faculty situated in the MLSC, we are planning for the design and construction of a new 120,000+-square-foot science building, which will replace Peterson Hall 3. The "PH3-replacement building," as it is presently called, will house all departments in the college, save the Department of Mathematics and Statistics. Originally, funds for this project were made available by the passage of Proposition 55 (March 2004). Since then, however, the rapid inflation in the cost of building materials (primarily steel and concrete) has made construction of the building as designed

See page 5, Chair's Remarks

# Contents

|  |   |                                  |    |                                     |    |
|--|---|----------------------------------|----|-------------------------------------|----|
| In Memoriam: Dr. Kenneth L. Marsi        | 1 | Merryfield leads Academic Senate | 9  | New Faculty: Brian L. McClain       | 19 |
| Message by the Dean                      | 2 | IIRMES Lab Facilitates           | 10 | Emeritus Faculty • Former Lecturers | 19 |
| Remarks by the Chair                     | 3 | W. M. Keck Grant                 | 11 | Awards and Scholarships             | 20 |
| Thoughts about Ken Marsi                 | 4 | Faculty Collaborations           | 12 | Faculty E-mail                      | 22 |
| Mario Molino—Most influential Hispanic   | 7 | 50 years of Mayfield Award       | 13 | Research Publications               | 22 |
| Peter C. Ford—Allergan Distinguished     | 8 | MS Thesis                        | 13 | Individual and Corporation Gifts    | 23 |
| Distinguished Visiting lecturers 1980-04 | 8 | Reports from Faculty             | 14 | Honor Roll                          | 23 |
| Dr. Stephen Runkmick                     | 9 |                                  |    |                                     |    |





## Faculty, Staff, Students Thoughts About Ken Marsi

Written and Compiled by Doug McAbee

**In 1962, Dr. Ken Marsi joined our faculty here at California State University, Long Beach (then Long Beach State College). He quickly established himself as a first-rate teacher, scholar, mentor and colleague. In 1975, he became department chair, serving with distinction until 1996, when he entered the early retirement program. He continued to teach organic chemistry until he fully retired in 2002. During those 40 years, Marsi established a level of professional excellence that is seldom seen, making an enduring impact on colleagues, students and the life of our department. What follows are thoughts, impressions, and recollections of faculty, research colleagues and former students that focus on Marsi's accomplishments and the positive influence he had on these individuals.**

### Recollections from Faculty Colleagues

**DOROTHY GOLDISH, Professor Emeritus, Department of Chemistry and Biochemistry, CSULB**

The department almost failed to hire Ken Marsi. The campus was a very different place in 1961. Some people didn't believe anyone that good would really want to come here, but we decided to go ahead and offer him the job anyway. He accepted, and yes, he was really that good. From the start, Ken's excellent teaching and research were an inspiration to students. His vision for excellence was an inspiration to students and colleagues throughout his career.

Long before "assessment" was an educational buzzword, Ken showed concern for how effective we had been in preparing our students for employment and for graduate school. He regularly checked with employers and with graduate programs, as well as with our former students, for feedback.

Ken's genuine concern for students was especially demonstrated by the fact that he knew every one of our graduates by name, by face and by the details of the person's career after leaving Long Beach. In addition to his well-known activities in mentoring students, Ken was an active and effective mentor for faculty members joining the department at a time

when this was not a common activity throughout the university.

For many of us, Ken Marsi was a valued colleague and a good friend for many, many years.

**TOM MARICICH, Professor, Department of Chemistry and Biochemistry, CSULB**

Ken Marsi was respected because he always set the bar for achievement at the highest level and then surpassed it. He also guided students and faculty to do the same. He was especially remarkable for getting to know people and remembering the important details of their lives. This especially endeared him to students, alumni and friends. We will miss his presence.

**DR. JEFF COHLBERG, Professor, Department of Chemistry and Biochemistry, CSULB**

When I started out as a faculty member, Ken invited me to his office at the end of the semester, and we opened our student evaluation envelopes at the same time. I was having a little trouble my first semester, and my evaluations reflected it. Then Ken said, "Okay, let's see how I did." Of course, his scores were nearly perfect, and the written comments were uniformly paeans of praise. Why did Ken do this? Partly because he was intensely proud of his accomplishments as a teacher, and partly to provide an example for a young faculty member to emulate. Ken was a great role model for young faculty because he excelled at everything. He was a teacher of legendary abilities, a highly published researcher and a talented administrator whose basic humanity earned the universal (really!) respect of the faculty and staff.

Ken had an uncanny ability to remember past students. He often began a conversation by saying, "Do you remember so-and-so?" He graduated from our department in 1978. He got an 'A' in my 321B class. He was the second best student, just behind so-and-so." This ability helped him to keep in contact with past students and to build up our alumni support base.

Ken established the Advisory Council and was adept at getting private companies to make donations to our department. Recently, I mentioned to Ken that I had never gotten involved in fundraising because I found it so awkward to ask someone for money. I said that I marveled at how easy it was for him. He replied that he also found it very difficult and always felt very uncomfortable, but he just went ahead and did it!

**DR. NAIL SENOZAN, Professor Emeritus, Department of Chemistry and Biochemistry, CSULB**

When I joined Cal State Long Beach in 1964, Dr. Marsi was an assistant professor with only two years of seniority over me. Darwin Mayfield was then the chair and Roger Bauer (later Dean Bauer) and Edwin Harris had just been promoted to associate professors. Dr. Marsi was in fact the most junior faculty member after me. As the two newest professors, we struck an early friendship. We used to drive to UCLA for seminars together and share our frustrations in launching off our research. Occasionally he expressed concern about the upcoming tenure decision and even mentioned leaving Long Beach.

That his concern was uncalled for soon became apparent as Dr. Marsi's research on organophosphorus compounds took off. His work broke new ground in the area of the reactions and stereochemistry of these compounds. He and his students published 23 papers between 1969 and 1978. Eight of these appeared in the *Journal of American Chemical Society*, regarded by many to be the most prestigious chemistry journal, and eight in the *Journal of Organic Chemistry*, another premier publication of the American Chemical Society. Meanwhile, his reputation as a teacher was growing. I remember students who went to great lengths to rearrange their schedules so that they could take "Marsi's Organic." He challenged his students and held them to the highest academic standards, and they loved it.

He was the greatest teacher that I have known as a student or as a professor, and I've been teaching chemistry for 35 years. One student told me that somehow Marsi had the perception to get a question before the student asks the question. And another student said that he acted as if you are the most important person when you asked him a question, when you spent time with him. But my feeling is that you can't explain what made him a great teacher. He just had that genius of teaching, that magical quality to inspire.

**LAWRENCE LERNER, Professor Emeritus, Department of Chemistry and Biochemistry, CSULB**

Ken was a pillar of strength, not only in the Chemistry Department, but in the college and throughout the university. Indeed, I can think of no one else who contributed more to the steady growth of the university's quality and standing during his long tenure. Quite aside from his academic and administrative achievements, Ken was a man of broad talents

and a heck of a good guy. It was a privilege to serve with him over my 30 years at CSULB.

**ROGER BAUER, Professor, Department of Chemistry and Biochemistry, CSULB**

I was very pleased when Ken Marsi came to Long Beach as he was another "transplanted" Kansan added to our faculty. The Chemistry Department faculty numbered about a dozen at the time, and it was a very cooperative and cordial group of individuals. The dedication of the faculty to teaching and professional activities was always an important feature of our department. Ken became one of the leaders from both a teaching and research point of view. His teaching is nothing but exemplary. I know that anyone who has attended any of his lectures knows of his well-prepared presentations and unusually clear drawings of molecular structures. We all appreciate the many years he spent as chair of the department. His leadership was important in developing the reputation of the department as a student-centered one.

### Recollections by Former Students

**Marsi taught organic chemistry for almost his entire professional life, with about 11,000 undergraduate students having come under his instruction during his 40 years at CSULB. It is clear from the following narratives that Marsi played a very special role in the professional and personal development of these individuals.**

**DR. JIM JASPERSE (M.S. Student, CSULB, 1976)**

Dr. Marsi was an amazing teacher. Time and time again, I saw him take roughly shaped students and turn them into scientists—myself included. One of my memories of Dr. Marsi was that the library would send over the *Journal of Organic Chemistry* to him first so that he could read it before it was released to the general population. He would faithfully return *JOC* to the library every week in one week's time. I believe you can still find the table of contents of the *JOC* at CSULB marked with faint check marks left by Dr. Marsi. Another recollection occurred in the fall of 1975. I had completed the second draft on my master's thesis and a few papers had been written and sent for review to *JOC*. I was shooting the breeze with Dr. Jensen and Dr. Marsi on the second floor of the chemistry department at CSULB. The three of us were talking in a friendly way and trading light jibes, and it occurred to me that these two excellent professors now considered me a

See page 6, Thoughts about Marsi

## Chair's Remark

impossible. Rather than build a less expensive facility that does not meet the needs of the college, the university has decided to wait until sufficient funding can be obtained through the next bond election (projected for November 2006). If that bond proposition is passed, then abatement and demolition of PH3 will begin in the spring of 2007, with an expected construction time of two-to three years.

### PROSPECTS FOR 2005-06

We anticipate a good year ahead for our faculty and students. Our faculty have been, and will continue to be, the key ingredient in our success, and strong leadership in the college and university have been invaluable. We look forward this year to an increase in university and college budgets that will allow us to add back course sections and enhance existing programs and activities, which bore the brunt of budget cutbacks the last two years. We can also expect positive changes in departmental curriculum this year as two new courses come on-line: "Introduction to Inorganic Chemistry" (CHEM 331/332) and "General, Organic, and Biochemistry" (CHEM 140), which replaces the nursing chemistry sequence CHEM 202/302. Finally, we look forward to another year of faculty-led research by students in chemistry and biochemistry.

As always, the department depends critically on financial support from alumni and friends; support that makes so many worthwhile programs, activities, scholarships and awards possible. We are deeply grateful for the generous donations we received this past year, and by your continued support, you can share in the successes of our students and faculty during the coming year.



colleague and not a student. It was at that moment I knew I had graduated from CSULB and it was time to face the world.

**DR. DONALD M. LYNCH, (B.S., Chemistry, 1971)**

As a beginning chemistry major in 1969, I was extremely fortunate to have Dr. Marsi teach me to understand and enjoy organic chemistry. As a result of taking his classes and seeing in him a special person and tutor, I asked to join his group to do an undergraduate research project. Dr. Marsi graciously agreed and outlined a project. When I told my psychedelic psychology and sociology friends that I was going to make a seven-membered phosphorous ring as a chemistry research project, they thought it was “far out” that you could make jewelry in the chemistry department. As I relayed this story to Dr. Marsi, he gave me that infectious smile and characteristic chuckle, and said, “Now that would really be far out to make jewelry in the department.” During and after the successful completion of the project, Dr. Marsi became my coach and mentor, and instilled in me a love and zeal for research. With his urging, support and advice I continued on through to complete a doctorate degree. I look back now and realize how fortunate I was and what a positive impact Dr. Marsi had on my life and professional career.

**DR. FRANCISCO M. LLORT, (B.S., Chemistry, 1974)**

Often one hears it said that someone changed someone else's life, but seldom is this bromide true. Professor Marsi truly did change my life. When I arrived at CSULB (back then it was called a college), I was unsure of what I wanted to do or that chemistry would be my major. It only took a few minutes of Ken's “Orgo” class to make me realize that I was going to be a chemistry major. His passion for the subject, his enthusiasm for teaching and his willingness to be interrupted in his office or lab to discuss some esoteric point with a student were inspiring. I became a research assistant in Ken's lab, and he taught me on a daily basis, not just about chemistry, but about life as a responsible adult. He encouraged me to apply to graduate school, and he took me to a seminar at UCLA to listen to a lecture by Kurt Mislow of Princeton University, who later became my Ph.D. advisor. After graduate school, I stayed on the East Coast. I had few opportunities to visit Ken, and my contacts were few. Nonetheless, we communicated on occasion, and I always felt that he was interest-

ed in my career. My wife and I mentioned him often as an example of someone who lived a full life. We will miss him.

**KERRY DEGROOT, (B.S., Chemistry, 1988)**

He was very involved with his students. He was amazing in that he knew every student's name and was able to recall how well students did years earlier and the directions they took. He had a knack of knowing what was misunderstood and presenting it in a way the class could grasp.

**THANG DINH, (B.S., Biochemistry, 1995)**

I learned so much from (Dr. Marsi), that every time I do things that are difficult in the lab, I think about him. Current students, past students and alumni—we all think of Dr. Marsi as a gold standard. A lot of us became great scientists and some became great professors because of him.

**Marsi's research achievements and his superb teaching culminated in 1984 in his recognition as the university's Outstanding Professor. The following year he was named the Trustees' Outstanding Professor, a state-wide honor awarded in a given year to only one of the 20,000 California State University professors. As part of the application for the Trustees' award, many faculty colleagues, research and industrial collaborators, and former students submitted letters on behalf of Marsi. Excerpts from a few of these letters are reprinted below and are representative of the very high regard in which Marsi was held as a scholar, teacher, mentor and administrator.**

**LARRY KIRK, Associate Professor, Chemistry, CSU Chico; Lecturer at CSULB, 1979-81**

I believe that in his capacity as department chair, Ken Marsi has no equal in excellence. His leadership has led to a strong feeling of community and commitment within the chemistry faculty at Long Beach. This same feeling of togetherness as a department is certainly lacking in other departments with which I have been acquainted.

**JOHN NEPTUNE, Chair, Chemistry Department, San Jose State University**

My principal association with Dr. Ken Marsi has been in the annual meetings of the Chemistry Department Chairs of the CSU. This group recognizes Dr. Marsi as being the best department chairperson in the system. He has provided



Dr. Ken Marsi, right with Dr. Nail Senozan.



Dr. Ken Marsi, right with student Sotiria Contos.

leadership to this group and has shown how CSU Long Beach has excelled in many areas through his efforts.

**DAVID ADAMANY, President, Wayne State University, and Professor of Law and Political Science**

It is unusual to find a faculty member whose activities are so broad ranging and so balanced. Kenneth Marsi is a fine teacher in lecture class, a superior supervisor of laboratory work, an accessible and helpful advisor of students, a publisher of instructional materials and a published reviewer of the literature of his field. His teaching is effective at both the undergraduate and graduate levels, a span not altogether common in the academic profession. By maintaining a regular program of research and publication, often supported by external funding, Professor Marsi has afforded opportunities to many students to learn by engaging in scholarship at the frontiers of their discipline. Professor Marsi has given much to the instructional program by developing courses, participating in faculty curriculum bodies and providing leadership of the instructional program as chair of his department. This is as well-balanced and broad a program of teaching, both directly and indirectly, as one finds in universities.”

See page 7, Marsi

## Marsi

**RICHARD SCHOWEN, SOLON E. SUMMERFIELD**  
*Professor of Chemistry, Kansas University*

In terms of the central professorial task of teaching, Dr. Marsi has a combination of rigor and high principles, with a true concern and natural friendliness that I believe truly influence students' lives profoundly. Ken Marsi has achieved the kind of thing we all aspire to do: he is a master teacher and guide to young people; he is a scholar of solid and valuable achievement; and he is a colleague and servant of his university who has through his efforts and example made the work of his colleagues and students easier and better and increased the reputation of his institution.

**C.A. VANDERWERF, Professor of Chemistry and Dean Emeritus, College of Arts and Sciences, University of Florida**

First and foremost, Dr. Marsi is a superb teacher of chemistry and of life, molded in the tradition of former greats such as G.N. Lewis and Linus Pauling. He is a brilliant organizer of his subject, a lucid expositor and a warm-hearted, sympathetic teacher. In a one-on-one research situation, he is an extraordinarily effective teacher, both of the strategy of research and also of the laboratory science of chemistry, as well as a model of experimental expertise and skill. But the heart and soul of his teaching go far beyond that. He has honed and refined an uncommon talent for leading others to believe in themselves and in what, through effective application and hard work, they can achieve and become. He sparks in his students a sense of greatness they never before realized they possessed; he inspires them to reach out to fulfill their potential; and then he works with them unceasingly, with a rare blend of patience and excitement, in providing them with the necessary intellectual and experimental tools to succeed in doing so. As a result, he can set exceedingly high standards for his students, as he does for himself, and they gladly rise to the challenge of meeting those standards.

**DONALD B. DENNEY, Professor of Chemistry, Rutgers**

Professor Marsi has made significant contributions to our understanding of the reactions of a variety of phosphonium salts. His work represents seminal experiments in what was then a poorly understood field. The research from his laboratory is extensively quoted both in the prime literature and in texts. His work has withstood the test of time and will always be considered as having been at the cutting edge.

**THOMAS C. FLOOD, Professor of Chemistry, USC**

Any textbook on basic phosphorus chemistry will contain a discussion of Ken's important and elegant work on the stereochemistry of phosphorus of basic hydrolysis of phosphonium salts, and on the stereochemistry of reduction of phosphine oxides. These studies form the basis for much stereospecific synthetic phosphorus chemistry.

**SHELDON E. CREMER, Professor of Chemistry, Marquette University**

Ken's strength lies in the excellence that he has achieved in three key areas: research, teaching and administration. It is rare to find someone who has simultaneously excelled in each of these domains. The most pleasant part of all, of course, is his modest view of his own success.

**The large majority of the 100+ letters recommending Dr. Marsi for the Trustees' award highlighted his ability as a teacher and mentor. The overwhelming consensus was that Marsi explained complex topics in a clear, understandable manner and understood the student's perspective of the topic and taught with that in mind. Many spoke warmly about his “open-door” policy toward students and faculty, and the personal care, interest and effort he devoted to his instruction and students. He impressed his students with his strong desire that they should succeed in class, in lab, in life—and he held a genuine interest in his students' personal lives and careers. He considered teaching as a privilege. Arguably his most important attribute was that he possessed the rare ability to inspire those**

around him—colleagues and students.

**When Marsi became department chair in 1975, the Natural Sciences had recently separated from the School of Letters. He devoted himself to this new role with great energy and creativity, and many current programs and department activities were initiated by him. Marsi began the present department newsletter and was its editor until 1996. Through his efforts and personal contacts with alumni and friends of the department, he helped build the department's endowment to over \$480,000 at the time of his retirement in 2002. He obtained corporate sponsorship for the department's Distinguished Lecturer Series, which has hosted internationally recognized Nobel laureates (see a list of Distinguished Lecturers on page 8). He also organized the department's Advisory Council, which has provided external guidance and financial support for department programs and student scholarships and awards for more than 20 years. Marsi's respect for scholarship and good teaching was the hallmark of his years as chair, underscored by the fact that he actively maintained his research and taught organic chemistry while he was department chair, a remarkable feat that testifies to his energy, intellect and administrative skills.**

**Our department bears the unmistakable imprint of Marsi's life and work that will remain with us. He has provided us with a strong legacy of professional excellence, personal integrity and visionary leadership. Ken Marsi was an extraordinary individual, and it was our great fortune to have known and worked with him.**



Dr. Molina and his sister, Martha Bernadett

## Molina Named Among Most Influential Hispanics

J. Mario Molina, M.D., (B.S., Chemistry, 1980) was named one of TIME Magazine's "25 Most Influential Hispanics in America" in August. Molina earned an M.D. degree from USC and is chairman and CEO of Molina Healthcare, which focuses on serving patients covered by government-sponsored health insurance programs. His sister, Martha (Molina) Bernadett, M.D., (B.S., Chemistry, 1985) is the firm's executive vice president of research and development.



## Distinguished Visiting Lecturers

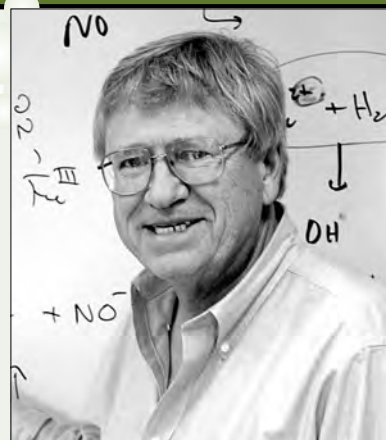
1980–04

- 1980 Takeru Higuchi (Pharmaceutical Chemistry), Univ. of Kansas
- 1981 Charles Casey (Organometallic Chemistry), Univ. of Wisconsin
- 1982 Albert Lehninger (Biochemistry), Johns Hopkins University
- 1983 Kenneth Raymond (Bio-inorganic Chemistry), UC Berkeley
- 1984 Ephraim Racker (Biochemistry), Cornell University
- 1985 Harold Weintraub (Biochemistry), Fred Hutchinson Cancer Research Center (Seattle)
- 1986 Paul Saltman (Biochemistry), UC San Diego
- 1987 Joan Valentine (Bio-inorganic Chemistry), UCLA
- 1988 Donald Cram (Organic Chemistry, Nobel Laureate), UCLA
- 1989 Harry Gray (Inorganic Chemistry), Caltech
- 1990 Ignacio Tinoco (Physical Chemistry), UC Berkeley
- 1991 Bruce Ames (Biochemistry), UC Berkeley
- 1992 Jerrold Meinwald (Organic Chemistry), Cornell University
- 1993 Ralph Adams (Analytical Chemistry), Univ. of Kansas
- 1994 Jacqueline Barton (Bio-inorganic Chemistry), Caltech
- 1995 Nelson Leonard (Bio-inorganic Chemistry), Univ. of Illinois, Caltech
- 1996 F. Sherwood Rowland (Physical Chemistry, Nobel Laureate), UC Irvine
- 1997 Leslie Orgel (Physical-inorganic Chemistry), Salk Institute (San Diego)
- 1998 Ahmed Zewail (Physical Chemistry, Nobel Laureate), Caltech
- 1999 C. Grant Wilson (Physical Organic Chemistry), Univ. of Texas
- 2000 Dudley Herschbach (Physical Chemistry, Nobel Laureate), Harvard University
- 2001 Catherine Fenselau (Analytical Chemistry), Univ. of Maryland
- 2002 Marc Kirschner (Biochemistry), Harvard University
- 2003 Barry M. Trost (Organic Chemistry), Stanford University
- 2004 Peter C. Ford (Bio-inorganic Chemistry), UC Santa Barbara

## Peter C. Ford

### 2004 Allergan Distinguished Visiting Lecturer

by Stuart Berryhill



This past year, we celebrated a milestone with the 25th year of our Distinguished Visiting Lecturer series, which was sponsored again by the generous support of the Allergan Corporation. On Oct. 20, 2004, we were very pleased to have Professor Peter Ford of the University of California, Santa Barbara join us as our lecturer.

Ford joined the UC Santa Barbara faculty in 1967 after earning his Ph.D. at Yale in 1966 and an NSF postdoctoral fellowship at Stanford. He

has published over 300 papers during his career. He is a Fellow of the American Association for the Advancement of Science and has been a Dreyfus Foundation Teacher-Scholar and a Senior Fulbright Fellow. His many awards include an Alexander von Humboldt Foundation Senior U.S. Scientist Award (1992) and the Richard C. Tolman Medal of the ACS (1993). Also, for the past several years, Ford has been a member of our college's NIH SCORE advisory committee.

Ford's current research is concerned with three topics: homogeneous catalysis, the photochemistry and photophysics of transition metal complexes, and the bioinorganic chemistry of nitric oxide complexes. While these sound rather diverse, the common theme is in reaction mechanisms and applications of quantitative techniques to investigate these mechanisms.

The noontime general lecture was titled "Learning New Things About the Chemistry of a Small Molecule. Investigating the Promiscuous Bioregulator Nitric Oxide." In this lecture, Ford introduced the audience to nitric oxide and its importance as a chemical messenger in mammalian physiology and its significant role in immune response.

The afternoon lecture, "Probing Fundamental Mechanisms of Nitric Oxide Reactions at Transitions Metal Centers," focused on his research group's work on polynuclear copper(I) materials with remarkable emission properties, including unusual sensitivity to the environment (temperature, viscosity, etc.). His group is trying to establish the experimental and theoretical groundwork for understanding these properties with the goal of extending this to developing new luminactive sensors.

The Distinguished Visiting Lecturer series was instituted in 1980, with lectures by Professor Takeru Higuchi of the University of Kansas. Since then, the series has continued without interruption and has included many outstanding scientists representing all areas of chemistry and biochemistry. We are pleased to announce that the 2005 Distinguished Visiting Lecturer will be Dr. Andrew Ewing from Pennsylvania State University, and his lectures will be on Oct. 27. Ewing is professor and chair in the Department of Chemistry at Penn State. He is also a professor of neural and behavioral sciences and holds the J. Lloyd Huck Chair in natural sciences. He is an analytical chemist by training, focusing his work on electrochemistry and its applications to neurobiology.

## Dr. Stephen Runkmick

### Council Member Provides Sound Advice

by Anne Ambrose



Photo by David J. Nelson

Developing community collaborations are essential to the California State University's mission, and one way to accomplish this is to invite both academic and community representatives to serve on campus advisory boards.

Dr. Stephen Runkmick, a member of CSULB's Chemistry/Biochemistry Department Advisory Council, is director of Analytical Methods Development and Special Studies at Allergan, Inc., a specialty healthcare pharmaceutical company based in Irvine.

Runkmick joined the council more than six years ago when his former supervisor, CSULB alumnus Lloyd Takahashi, invited him to take his place upon retirement. Runkmick earned a B.A. in chemistry from Grinnell College in Iowa and a Ph.D. in analytical chemistry from the University of Wyoming. After working for DuPont Pharmaceuticals in Delaware, he joined Allergan in 1990.

Allergan is a technology-driven, global health care company providing specialty pharmaceutical products in the eye care, neuromodulator, skin care and other specialty markets. Perhaps its best-known product is Botox. Runkmick is responsible for developing all analytical test methods for the firm's non-biological drugs.

There are a variety of reasons for companies to become involved with their local universities, he noted. "One is that the academic environment and the industrial chemistry environment are very different worlds. Input from industry can strengthen the academic curricu-

lum in universities so that the graduates have more of the skills industrial people are looking for."

Conversely, individuals in industry "can become more in tune with the latest chemistry research and be exposed to some of the more prominent people in analytical chemistry from the academic environment."

Allergan also benefits from recruiting CSULB graduates as well as making connections

with other advisory board members. The department gains in return through the firm's support of the annual Allergan Distinguished Visiting Lecture and donations of scientific equipment.

Runkmick noted that "When our instruments get older and are replaced, we'll donate some to CSULB. That's an ongoing process in which we're very glad to participate, and it's nice to know that these instruments are going to a good cause, are appreciated and will be put to good use."

Through his advisory council participation, "I've been impressed with the high quality of undergraduate and master's level research that goes on at Cal State Long Beach. I think it's close to commensurate with colleges that offer Ph.D. degrees, and that's very unusual for an undergraduate or master's level person to have that quality of research available to them."

The son of a geologist, Runkmick was interested in chemistry in high school and recalled doing geology fieldwork as a student in the summers to gain industrial experience—a philosophy he recommends for anyone considering a career in commercial science. "It would really be to their benefit to get into some kind of mentoring or internship in industry, even if it's only for a summer for a few months—to get into a commercial laboratory or whatever scientific field they're interested in and just explore what it's like to be an employee in a company that is there to make a profit, as opposed to working in an academic environment."

## Chemistry Professor Leads Academic Senate

by Anne Ambrose



Photo by Victoria Sanchez

There is a lot of activity that goes on behind the scenes to make a large university like Cal State Long Beach function smoothly. Just ask Chemistry/Biochemistry Professor Margaret M. Merryfield.

Dr. Merryfield is now in her second one-year term as chair of the university's Academic Senate, which "is the main body at this institution that develops the academic policies that govern our curriculum and that governs the way faculty are evaluated—basically, policies that are related to how students are dealt with in a variety of ways," she explained.

"There's a tradition in universities of faculty governance, which allows for considerable self-determination by the faculty of what the programs should look like and what the policies should be that govern them," she continued.

"There's also, on this campus in particular, a very, very strong tradition of shared governance."

That tradition is reflected by the senate's broad membership—91 voting and non-voting members representing faculty, administrators, staff and students. By virtue of her position, "The senate chair gets called in to represent the faculty in a lot of fairly high-level kinds of conversations," including serving on the president's and dean's cabinets and campus goals committee, among many other campus groups, Merryfield said.

See page 11, Academic Senate



# IIRMES Lab Facilitates Leading Edge Research

by Anne Ambrose

Whether it's determining the provenance of ancient artifacts or examining the properties of superconducting materials, researchers seeking one of the leading analytical facilities among California universities can find it on the CSULB campus.

The Institute for Integrated Research in Materials, Environments and Society (IIRMES) is an innovative, new interdisciplinary program that provides state-of-the-art analytical instrumentation to study organisms and materials, both natural and human-made.

Under the direction of Andrew Z. "Zed" Mason, professor of biological sciences, the lab was developed upon the premise that, "The recent convergence of once disparate schools of scientific thought results from the realization that an explanatory framework, built within evolutionary, chemical, physical and mathematical theory, can be used to study and explain the processes that produce not only natural environments, but also sculpture human civilizations and modern society."

The lab's founding faculty come from biology, geology, anthropology, and physics and astronomy. Subsequently, other faculty from geography and chemistry are using the lab. Chemistry faculty who currently use the laboratory include Drs. Roger Acey, Jeff Cohlberg, Doug McAbee and, more recently, Dr. Stephen Mezyk, who specializes in environmental chemistry.

Student Mark Oxley conducting a ground penetrating radar (GPR) survey at Anakana on the 2005 CSULB field expedition to Rapa Nui.

"We have so much good scientific expertise here, but very little opportunity for collaboration, that really I saw this as a wonderful venture," Mason said. "So where as an individual, I could never justify getting any of this equipment, through joint collaborations we're actually very competitive. Our hit rate, at least on the instrumentation that I've applied for—and that's five NSF grants and the Keck grant—is 100 percent."

The equipment list is impressive, including a GBC Optimass orthogonal time of flight inductively coupled plasma mass spectrometer—only the second in the nation along with the Oak Ridge National Laboratories, as well as other mass spectrometers, scanning electron microscopes, X-ray spectrometers and liquid chromatographs. The lab also is establishing a luminescence lab to help date ceramics, lithics and sediments.

Its newest acquisition, funded by a \$500,000 W.M. Keck Foundation grant, is a Perkin-Elmer prOTOFM 2000 matrix-assisted laser desorption ionization orthogonal time of flight mass spectrometer, which will be the basis for a new Center for Education in Proteomic Analysis. (See page 11 for more information.)

IIRMES recently was named a core facility for microchemical analysis by the California State University Program for Education and Research in Biotechnology (CSUPERB), headquartered at San Diego State University. Core facilities are located at several CSU campuses to provide educators and researchers with an array of biotechnology-related analytical services.

Mason and his colleagues are engaged in a breadth of research projects, ranging from dating archaeological artifacts from Rapa Nui (Easter Island) and Olmec sites in Mexico, to studying cellular metabolism, fluids in rocks and high-temperature superconducting materials. IIRMES also has several research contracts with state



Dr. Andrew Mason and student Matthew Wimmer in the lab.

and federal agencies to conduct water and environmental studies in Southern California.

Mason is proud of the lab's exceptional caliber. "The CSU system has an excellent reputation for producing graduates with practical, hands-on laboratory experience, and employers have always commented that the CSU produces students who are every bit as good, and often better than, those graduating from the UC system. This is in part because of our

emphasis on laboratory classes and undergraduate research. It's incumbent upon us to acquire state-of-the-art equipment for student research and training if we want to maintain this legacy because, without it, our students will fall behind."

To learn more, visit [www.csulb.edu/programs/iirmes](http://www.csulb.edu/programs/iirmes) and [www.csuchico.edu/csuperb](http://www.csuchico.edu/csuperb).

Archaeology graduate student Ileana Bradford working in the lab with the GBC Optimass and New Wave laser.



## CSULB Receives \$500,000 W. M. Keck Grant to Establish Center for Education in Proteomic Analysis

A new Center for Education in Proteomic Analysis (CEPA)—the first of its type in the California State University system—is being established at CSULB with a \$500,000 grant from the W. M. Keck Foundation.

Proteins perform essential roles in all biological processes, and proteomics is the study of some or all of the thousands of different proteins contained within an organism, tissue or cell. Through proteomic analysis, scientists seek to understand how func-

tion correlates with the complete protein composition of a biological system under normal or diseased states.

CEPA will provide students and faculty throughout the CSU system with access to a state-of-the-art proteomics facility for both research and instruction. It is part of CSULB's Institute for Integrated Research on Materials, Environment and Society (IIRMES), an interdisciplinary research center developed by the university's Colleges of Natural Sciences and Mathematics (CNSM), and Liberal Arts. Faculty and students from biology, chemistry, biochemistry, geology, physics and astronomy, as well as geography and anthropology utilize its sophisticated array of equipment, funded largely by the National Science Foundation,

the university and other organizations such as the W. M. Keck Foundation.

The W. M. Keck Foundation grant, together with CSULB funds, will help purchase a suite of instruments that includes a Perkin-Elmer prOTOF 2000 matrix-assisted laser desorption ionization orthogonal time of flight mass spectrometer, as well as to hire a staff technician. The mass spectrometer will be used to analyze large biomolecules, including changes in amino acid compositions of mutant or engineered proteins. It is anticipated that the acquisition of the instrumentation will enable the hiring of a faculty member with specific expertise in proteomics who will help coordinate CEPA activities.

Douglas McAbee, chair of the Department of Chemistry and Biochemistry, and Andrew Z. Mason, professor of biological sciences and IIRMES director, will be initially responsible for overseeing CEPA. "Our mission as educators requires us to inform students how technological advances applied to genomics, proteomics and bioinformatics have provided the practical means to address fundamental questions in the life sciences," McAbee said. "The fairly recent advent of soft-ionization mass spectrometry provides investigators with the technological means to answer crucial questions that previously were impractical or impossible to address." He said that proteomics labs are common at research institutions, "but these facilities are used almost exclusively for research applications. What sets CEPA apart, we believe, is its mission to train students in proteomic analysis.

"It is important to stress that CEPA will provide students and faculty throughout the CSU system with access to a state-of-the-art

See Keck Grant, page 12

## Academic Senate

Although CSULB's senate is responsible for faculty tenure and promotion policies, it doesn't get involved in union collective bargaining as some campus senates do. However, the president of the campus faculty union chapter has a standing place on the senate meeting agenda and conversely, Merryfield is a non-voting ex-officio member of the faculty union board.

While serving as chair, Merryfield's busy schedule leaves time only for teaching an occasional class, but she nevertheless has remained involved with students as principal investigator of CSULB's Howard Hughes Medical Institute program and now as coordinator of the university's lower division component of the Research Initiative for Scientific Enhancement program, part of the National Institutes of Health's Minority Biomedical Research Support program to benefit underrepresented students.

Since joining the CSULB faculty in 1984, "I've been involved in life-of-the-campus kinds of things for a very long time," although she only became involved in the senate in 2001. "One of the first people I got to know well in the Chemistry Department was Dot [Dr. Dorothy] Goldish, who was senate chair and who has been in any number of acting administrative roles on the campus. She was probably my first mentor and really gave me a sense how a university operated."

Merryfield believes that science faculty are particularly well prepared for leadership roles. In a research lab, "you have to run a group; you have to get grants; you have to manage a budget; you manage people, grad students, undergraduate students, sometimes paid staff as well; and that kind of experience actually translates well to other settings," she said.

"I enjoy the interaction with colleagues from different areas who bring very different perspectives to their work. It gives you a better idea for the overall endeavor of how the university works and you make friends. It gave me an appreciation for the enormous talent that the staff of this place has. There are some really dedicated people who have completely fascinating other stories."



# Faculty Collaborations Lead to New Discoveries

by Anne Ambrose



Professors Roger Acey, left, with Ken Nakayama.

For CSULB Professors Kensaku “Ken” Nakayama and Roger Acey, their collaboration could have implications for medical treatments.

“I’m an organic chemist, and my main area of interest is the synthesis or preparation of organic compounds,” Nakayama said. “I’ve always been interested in how these compounds can influence or affect biological or biochemical systems. I thought some of these compounds would prove interesting to some of the enzymes that Dr. Acey has been investigating for some years, so I brought up this issue with him almost five years ago. I said, ‘Maybe we can make the compounds and your students can test their effectiveness in inhibiting or otherwise affecting the cholinesterases, and we could both learn something from that.’”

Acey liked the idea. “I’m a biochemist, and I’m interested in a specific class of enzymes called the cholinesterases and their role in neuron differentiation. We started working with umbilical cord stem cells and induced them to form neurons. We want to know what role the enzyme plays in neuron formation. Dr. Nakayama’s compounds presented us with a unique opportunity to ‘knock out’ this enzyme. We’ve tested several of his compounds and they look like they’re very specific for our enzyme, so now we have a mechanism for evaluating the role of this enzyme in neuron formation.”

They also approached Dr. Katherine Kantardjieff, director of the W.M. Keck Foundation Center for Molecular Structure at Cal State Fullerton, about an additional collaboration. “They take computer-generated models of these systems and make them interact with each other by docking one molecule on top of another larger molecule and seeing the effects, whether it’s a favorable or unfavorable process,” Nakayama explained.

“She seems very interested in how these compounds can select for certain subtypes of these cholinesterases,” he said. “She’s interested in the molecular details of how this is happening, and computational studies would be one way to get a greater insight into this.”

Collaborations also extend to students. “I think it’s really good for our students to get involved in these projects because they see the interrelated nature of allied disciplines,” Nakayama commented. “One of our students, Ken Law, has gone on to the chemistry Ph.D. program at Yale University. He started out with me by making these phosphorus-based compounds, and toward the end of his involvement in the project, he went into Dr. Acey’s lab and got completely into the enzyme inhibition studies side of the project.”

Acey said they hope to take their research even further. “We’ve been looking at this from purely an organic chemist/biochemist point of view, but the reality is that these compounds have potential for treatment of nerve degenerative diseases. So, we think the chemical ramifications could be very large.

“The things we’re looking at—how one measures the interaction of compounds with their enzymes—is a new type of technology,” he added. “Ken and I and a few other faculty are trying to put together a grant proposal, which will let us monitor the efficiency of how these compounds interact with the protein in question. If we were to ever get to the stage where you would give this to a patient, then knowing those kinds of factors becomes critical.”

## Keck Grant

proteomics facility for both research and instruction,” McAbee added. “This is underscored by the fact that the proposal funded by the W.M. Keck Foundation listed 15 senior investigators from several CSU campuses, was supported by the Strategic Planning Council of CSUPERB, and outlined instructional applications of the facility for courses and workshops for students at the high school, undergraduate and M.S. level.”

“Our college views student-faculty research as a proven and effective means to prepare and motivate young scientists,” said CNSM Dean Laura Kingsford. “Student participation is enriching and vital for their growth as scientists. We are highly committed to supporting faculty members in their research and, as such, put a high priority on providing ways to promote collaborations, share major resources and acquire

state-of-the-art technologies. The establishment of CEPA will add another very important dimension to the training and research capabilities for students and faculty in this college and throughout the CSU system.”

“Because theory should not be divorced from practice, we must also equip students with the practical skills in the use of the latest technologies so that we can provide a trained, educated workforce for biotechnological industries and the employment demands of the next decade,” Mason said. “The CSU system has an excellent reputation for producing graduates with practical, hands-on laboratory experience, and employers have always commented that the CSU produces students who are every bit as good, and often better than, those graduating from the UC system. This is in part because of

our emphasis on laboratory classes and undergraduate research.”

IIRMES also houses the CSUPERB (California State University Program for Education and Research in Biotechnology) Core Facility for Elemental Micro-Chemical Analysis (FEMCA). By sharing equipment and expertise, CSUPERB core facilities located at several CSU campuses provide educators, researchers and students, both in the CSU and elsewhere, with a variety of fee-based analytical services. CEPA, once operational, will become part of FEMCA.

“The intellectual horsepower of the molecular life and chemical sciences at CSULB has long been underestimated and underappreciated,” said Dr. A. Stephen Dahms, CSUPERB executive director and professor of chemistry at San Diego State University. “CSULB has been brought to

See page 13, Grant

## Fifteen Years of the Mayfield Award

By Darwin Mayfield & Paul Buonora

At the commencement ceremonies in late May, Charles Galt, professor of biological sciences, was presented with the 2004 Mayfield Award for Outstanding Teaching in the College of Natural Sciences and Mathematics. This annual award is sponsored by the college’s student council and was established 15 years ago at the suggestion of members of the council to honor Darwin Mayfield, professor emeritus of chemistry and biochemistry who retired that year at the age of 70. It was designated the Mayfield Award to recognize its first recipient.

Since the award’s inception, the selection process has been managed entirely by CNSM students through a nomination process for outstanding teachers. The student council conducts balloting, and more than 300 students cast ballots this past spring for their favorite professor. Whenever possible, the Mayfield Awardee does not learn about his or her selection until it is announced at commencement. The award consists of a plaque given to the recipient, whose name is then added to a commemorative plaque displayed in the James Jensen Student Access to Science and Mathematics Center.

Thus far, seven of the 15 Mayfield Awards have gone to members of the Chemistry and Biochemistry Department faculty. Besides Mayfield, department recipients have included Drs. Peter Baine, Ken Marsi and Robert Loesch.

Baine joined the faculty in 1968, and in addition to service as the Student Affiliates of the American Chemical Society faculty advisor, he taught general chemistry and physical chemistry lectures and laboratories in the 1999-00 academic year.

Marsi was selected twice for this honor (1992, 1996). In the years he was recognized, he also served as the Student Affiliates of the American Chemical Society faculty advisor. He also taught organic chemistry and was an academic advisor at the time.

Notably, Loesch received the award three times over a six-year span (1999, 2001, 2004). He joined the faculty in 1969 and distinguished himself in the eyes of the students for his teaching of organic chemistry lectures and laboratories.

### LIST OF MAYFIELD AWARD RECIPIENTS

|                      |                      |                       |
|----------------------|----------------------|-----------------------|
| 1990 Darwin Mayfield | 1996 Ken Marsi       | 2002 Zed Mason        |
| 1991 John Baird      | 1997 Daniel Martinez | 2003 Dessie Underwood |
| 1992 Ken Marsi       | 1998 Kevin Kelly     | 2004 Bob Loesch       |
| 1993 Mel Wines       | 1999 Bob Loesch      | 2005 Charles Galt     |
| 1994 Roberto Mena    | 2000 Peter Baine     |                       |
| 1995 Zed Mason       | 2001 Bob Loesch      |                       |

## Grant

the forefront of the CSU in key separation and analytical technologies that underpin modern biotechnology.”

Surveys by the National Science Foundation and other government agencies rate CSULB among the top master’s universities in the number of graduates who go on to earn doctoral degrees. *U.S. News and World Report* ranks CSULB third among public western master’s universities for overall quality.

Based in Los Angeles, the W. M. Keck Foundation was established in 1954 by the late W. M. Keck, founder of the Superior Oil Company. The foundation’s grant making is focused primarily on pioneering efforts in the areas of medical research, science and engineering. The foundation also maintains a program to support undergraduate science and humanities education, and a Southern California Grant Program that provides support in the areas of health care, civic and community services, education and the arts, with a special emphasis on children. Additional information is available at [www.csulb.edu/programs/iirmes](http://www.csulb.edu/programs/iirmes).

## MS Thesis Chemistry & BioChemistry

2004–05

**BRIAN C. BAKER**  
“5’ RACE, Cloning, and Sequence Analysis of a Transcript Expression of Rat Macrophages”  
Mentor: Roger Acey

**ANDREA CHEN**  
“Alkylation Reactions on Chiral and Achiral Sulfonimides”  
Mentor: Tom Maricich

**LUKE DE SELM**  
“Synthesis and Characterization of Novel Carbosilane Dendrimers as Supports”  
Mentor: Paul Buonora

**PETER B. DO**  
“EPR Studies of the Solvent Effects on Dinitrosyl(phen)iron(O) and Other Dinitrosyl Iron Complexes”  
Mentor: Lijuan Li

**CHRISTOPHER P. FROST**  
“Cloning and Characterization of a Novel VPS-35 Allele Implicated in Post-Endosomal Trafficking to the Yeast Vacuole”  
Mentor:

**TZU-CHI HSU**  
“Correlation of Protein Stability of Apolipoprotein III with Lipid Binding”  
Mentor: Paul Weers

**CHON IEONG LAI**  
“Partial Purification of Mutant Charybdotoxin and Stable Expression of dSlo and dSol T290E Mutant Maxi-k Channels in HEK2933T/17 Cell Line”  
Mentor: Michael Myers

**JOHN LIARAKOS**  
“The Synthesis and Spectroscopic Studies of Dinitrosyliron Complexes Linked by Bis(diphenylphosphino)methane, Bis(diphenylphosphino)ethane and Bis(diphenylphosphino)acetylene”  
Mentor: Lijuan Li

**ZEYNEP A. OZTUG**  
“Formation of Amyloid from Human Copper, Zinc-Superoxide Dismutase”  
Mentor: Jeffrey Colberg

**SRIVIDYA RAMAN**  
“Isolation and Characterization of RNA Polymerase II from Developing Artemia”  
Mentor: Roger Acey





Photo by David J. Nelson

## Reports from Faculty

### ROGER ACEY

I've been on sabbatical leave this year and spent the time learning new methods for expressing proteins. This would not have been possible without the support of my research students. I've been fortunate to have a group with great communication skills, a tremendous attitude and an exemplary work ethic.

I'm happy to report that Brian Baker graduated this year and is working at Allergan in Irvine. Sri Raman will be completing her degree this summer. She has collected some very exciting data on the changing structure of RNA Polymerase II during embryonic development. Chad MacArthur, the newest graduate student in the lab, is working with a class of dialkyl-2-chloro-phenyl phosphates synthesized by Dr. Nakayama's research students. These compounds are potent inhibitors of butyrylcholinesterase and, as such, are a potential therapeutic for neurodegenerative diseases. Chad's project is to look at the effect of these compounds on the formation of neurons from umbilical cord stem cells. We're very excited about the possibilities. Wafa Mana has been looking at the effect of di-n-butylphthalate on the same process. Phthalates are used as plasticizers in a number of plastic products. We've been suggesting for years that this compound affects the development of the embryonic nervous system. Wafa's results seem to support our hypothesis. Gwen Jordaan will be joining the lab this fall as a graduate student. Her project will involve cloning the promoter sequence for the metallothionein gene.

Kyla Perkins, a MARC and HHMI Scholar, graduated this year. I hope to be able to persuade her to rejoin the lab as a graduate student. Amanda Bimms, a HHMI Scholar, has been working hard on trying to optimize the expression of MT in bacteria. Rene Miranda, an NSF and RISE Scholar, graduated and is working in San Diego.

*Faculty standing from back row, left: Dr. Xianhui Bu, Dr. Christopher Brazier, Dr. Eric Marinez, Dr. Margaret Merryfield, Dr. Stephen Mezyk, Dr. Dorothy Goldish, Dr. Marco Lopez, Dr. Paul Buonora, Dr. Peter Baine, Dr. Kasha Slowinska, Dr. Krzysztof Slowinski, Dr. Dennis Anjo and Dr. Ken Nakayama. Front row, left: Dr. Robert Loeschen, Dr. Paul Weers, Dr. Tom Maricich, Dr. Jeffrey Cohlberg, Dr. Douglas McAbee, Dr. Nail Senozan and Dr. Brian McClain.*

### CHRISTOPHER BRAZIER

We observed the very first gas phase spectrum of the silicon boride molecule this year. This is a small molecule of fundamental interest and is also a possible transient species in the production of p-type silicon. Until these observations, there was no spectroscopic means of detecting SiB. The jet-cooled emission spectrum of SiB was recorded by Jose Ruiz and Suzanne Colopilo, two chemistry undergraduates. Suzanne had originally helped set up my jet-cooled emission apparatus. She has now graduated and moved to Chicago. Many new bands of silicon dimer were also observed. This project is supported by a grant from Research Corp. The results are now being analyzed and prepared for publication. Jose and I are hoping to obtain improved spectra of SiB and start searching for aluminum boride.

This year I took a break from teaching physical chemistry and took over as coordinator of general chemistry, 111A. This is the first college chemistry course for many students, so I have endeavored to make chemistry an enjoyable and rewarding experience, and hopefully convince a few of the students to become chemists. Along with Profs. Mezyk and Lopez, I had the chance to teach a graduate course in computational chemistry. Since none of us are experts in the field, at times it felt like the blind leading the blind, but in the end it turned out to be very worthwhile, and we all learned a lot in the process. As a result, I

will be making greater use of computational chemistry in my research and teaching.

### XIANHUI BU

Last year was my second year at CSULB. I was fortunate to have a number of students joining my group. I felt very grateful for my graduate students, Lan Chen and Dat-Tam Nguyen, who not only helped me set up my synthetic laboratory, but also contributed lots of their time helping my undergraduate students with various experiments. During this period, my students did lots of synthetic experiments with numerous failures and some successes. Fortunately, some results are quite interesting and will be submitted for publication shortly. The research during this period was supported by both my startup and a grant from ACS-PRF. During the next few years, my research will be primarily focused on the synthesis and characterization of chiral porous materials, with support from the NIH SCORE program.

### PAUL BUONORA

The 2004-05 academic year has been busy. Since moving the research laboratory into the MLSC in the summer of '04, with help from Mike Naffziger (B.S., Chemistry 04) and the students then in my research group, we have reveled in the added hood space and closer proximity to the new GS-MS, IRs (including ATR) and, in January, the new reconditioned 300 MHz NMR. The department's new solvent purification system has made the lab safer (no more worries about still fires and still bottom wastes) and made life easier for the researchers.

We continue our research on developing the synthesis of a library of dihydropyridazinones as potential phosphodiesterase inhibitors. As the senior undergraduate, Melissa Flores (HHMI-Honors in biological sciences, 2004 Pfizer AIR Summer Research Fellowship, 2005 Merck Award, Sigma Xi) has led the group, and she presented her B.S.

thesis work on the conversion of bicyclic lactams to dihydropyridazinones at the Spring National ACS Meeting in San Diego. Although we will miss her as she begins Ph.D. studies at UC Santa Barbara in Fall 2005, her project is in capable hands, as a new researcher, Jennifer Pizzo, takes over.

After Mike Naffziger (HHMI-Honors in Biological Sciences, 2004 Hypercube Award, Sigma Xi) left to begin his Chemistry Ph.D. studies at Oregon State University, a new RISE supported student, Joseph Badillo, took over the study of development of amide additions to epoxides. Joe came into the group as a freshman, so we can look forward to having him in the group for some time.

Our efforts to develop a general asymmetric method for the synthesis of gamma-dicarbonyls have been continued by Margaret Brown (ACS Scholars Program, HHMI-Honors in biological sciences). Likewise, Crystal Jenkins continues her study of conjugate additions in bicyclic lactams. We also had a few short-term researchers in the past year: Valerie Achieng studied Suzuki couplings; Carrie Cox studied the Stetter reaction; NIH-MORE-Bridges to the baccalaureate students, Ralph Gomez and Henry Lopez, studied reactions of bicyclic-lactams in the summer of 2004; and KanLe and Jose in the summer of 2005 studied the synthesis and properties of copper salens.

With the move to the MLSC, I took over the Advanced Organic Chemistry Lab course from Marco Lopez. Now that we have a dedicated lab for this course, our plan is to enhance our ability to give the students modern synthetic laboratory skills. With the additional support that came with the building, we expanded our instrumentation to include six rotary evaporators and three radial chromatographs. In addition to the instruments noted in the first paragraph, we replaced the polarimeter and are setting up two nitrogen-vacuum lines. We would like to add flash chromatography and microwave synthetic equipment in the future. We introduced a requirement to keep note-

book records in a patentable format to further enhance the skills of our graduates.

For those from my past postings looking for information on their colleagues... (University of Scranton) Dan Walsh finished his Ph.D. at NYU last July. He will be working for the City of New York as a WMD specialist. Regina (Marinacci) Lutz completed her law degree at Hofstra University and is working in New York as a patent attorney. (Lamar University) Pollie (Kuehn) Holtham is working at the Sabine River Authority in Orange, Texas. Darin Laird, (Ph.D., University of Texas) has taken a position at Plextronics Inc. in Pittsburgh. His work is focused on the mechanism of polymerization of regioregular polythiophenes.

### JEFF COHLBERG

We have continued our research on the aggregation of the enzyme superoxide dismutase and its relation to amyotrophic lateral sclerosis (Lou Gehrig's disease). Our results were presented at the February meeting of the Biophysical Society in Long Beach, and I'm in the process of preparing a manuscript for publication. We have determined the *in vitro* conditions under which SOD forms amyloid, a type of protein aggregate associated with a number of neurodegenerative diseases, and shown that mutations related to the familial form of ALS promote aggregation. Most of this work was done by Zeynep Oztug, who received her M.S. degree this summer and is now in the Ph.D. program in chemistry and bio-chemistry at UCLA. Our technician, Krista Ehrenclou, also left us this summer. My continuing students are graduate student Yoko Nakano and three undergraduates: Chris Bowman and Phong Nguyen, who are Beckman Scholars; and James Tan, who is supported by the college's grant from the Howard Hughes Medical Institute.

We are all well settled into the new building and enjoying the new facilities. We are excited about getting the MALDI-TOF mass spectrometer

from the Keck Foundation grant, and we hope to use the instrument for our biochemistry lab course, Chem 443. The students will cut out spots from a 2-D gel, do a tryptic digest, analyze the peptides by mass spectrometry and identify the proteins by interrogating the database. For Chem 443, we also plan to incorporate fluorescence assays using our new microplate reader.

I continue to serve as graduate adviser for the M.S. in biochemistry and am pleased to report that enrollments are booming. This fall, we expect to welcome 12 new biochemistry grad students, and more applications for spring have started to arrive.

### LIJUAN LI

Several of my students graduated and there are some new additions to the group as shown in the photo on page 16. From left to right: Sandra Hernandez, Hanni Liang, Mary Guirguis, Heather Sanchaz, Miguel Camacho, Susan Som, Jasmine Shaw, Rosmary Tajiboy, Dr. Ximeng Wang, Dr. Lijuan Li, Kurt Kenttel, Chaitali Sheth, Lan Chen.

### TOM MARICICH

This past year, I continued to coordinate the department seminar program. Two of our alumni, Jon Rainier and Gary Hathaway, presented seminars on their research. If any of our other alumni would like to volunteer for future seminars, please contact me at [tmaricic@csulb.edu](mailto:tmaricic@csulb.edu).

My research students continue to make progress on their projects and to graduate. Andrea Chen completed her master's degree last year and continues to teach classes here. Alethea Poste and Omo Aisagbonhi are both in medical school, now. Douglas Thai is completing his exploratory investigation of the alkylation of ketones. Melissa Garsa, a RISE fellow, is comparing the HBF4 catalyzed sulfonimide alkylation reactivity of alcohols and phenols. Renata [Fan-Chun] Meng, a graduate student, is studying the sulfonimide alkylations of amides and imides. A promising biochemistry undergradu-



Photo by Victoria Sanchez

Back row from left: Chad MacArthur, Professor Roger Acey and Gwen Jordaan. Front row from left: Srividya Raman, Wafa Mana, Amanda Binns and Jim Yano.



Photo by David J. Nelson

Back row from left: Lan Chen, Tam (Jimmy) Pham, Dan-Tam Nguyen and Cristina Austria. Front row from left: Areg Zingiryan, Henry Valle, Rich Maxwell, Alfredo Diaz and Professor Xianhui Bu.



Photo by Victoria Sanchez

Back row from left: Zeynep A. Oztug, Phong Dinh and Christopher Bowman. Front row from left: James Tan, Yoko Nakano, Krista Ehrenclou and Dr. Jeffrey Cohlberg.



ate, Edward Duran has just joined our group. (See photo on p.16.)

On a personal note, Suzanne and I now have five grandchildren, about whom I brag too much. We had a great non-cruise trip to southeast Alaska this summer. I caught a silver salmon after big king salmon bit through the 40-pound test line. I also caught a 100-pound sting ray, but we didn't want to eat it, so we let it go.

#### DOUGLAS McABEE

The lab witnessed a considerable change in lab personnel this past year. M.S. students Grace Chung and Vincent Yee completed their experimental work and took up technical positions at labs in the southern California area. Grace's work focused on mapping the regions of the lactoferrin molecule involved in its carbohydrate-independent interaction with the asialoglycoprotein receptor. Her approach has involved a domain-swapping approach in which various sub-domains of human

media to carry out biochemical characterization of the interaction of these hybrid proteins with isolated hepatocytes. This has been a difficult task as the absolute amounts of recombinant lactoferrin in these preparations are relatively low.

Undergraduates Jennifer Laprise and Vanessa Martin continued their work in the lab on projects related to our analysis of serum lactoferrin-binding proteins (LfBP). Jennifer assisted me in identifying an additional set of LfBP that by LC/MS/MS analysis includes some interesting and unexpected proteins such as prothrombin, vitronectin and protein Z, all of which are involved in hemostasis. Vanessa has continued working on purifying complement C4 (another LfBP) and studying its interaction with lactoferrin. Giovanni Castor, a Howard Hughes fellow in the lab this past year, was able to generate and purify PCR-developed cDNA probes for asialoglycoprotein receptor subunits (RHL-1, RHL-2/3). These probes will be used to determine if *in vivo* iron overloading of rats increases transcription of

giving back to the system that gave so much to me."

After finishing at Chico, Brian set off to pursue his graduate degree at Purdue University. He worked under the supervision of Dr. Dor Ben-Amotz and focused his studies on understanding the structure of liquids using Raman spectroscopy. Brian graduated from Purdue in 2002 and accepted a post-doctoral position at Stanford University, working with Dr. Michael D. Fayer. At Stanford, Brian studied femtosecond protein dynamical motions, primarily studying heme-bound proteins.

Brian's primary research interests are focused on the dynamical interactions of various substrates with human serum albumin (HSA). HSA is the most abundant protein in human blood plasma, and understanding its ability to discriminate various substrates may give insight into how protein-drug interactions occur.

In his time away from campus, Brian enjoys spending time with his wife of 10 years, Heidi, and their two Jack Russell terriers, Abercrombie and

Baccalaureate Award, the Merck Award in Organic Chemistry, Chemistry and Biochemistry Departmental Honors, and is now working for CRG Laboratories in Torrance along with Christina Raubach; Kristin Clark, who was awarded the Michael Monahan Memorial Summer Research Fellowship in 2004 and received a grant to attend the American Chemical Society Summer School on Green Chemistry this past July at McGill University, Quebec, Canada, just as she completed her first year of her master's program working on the removal of herbicide residues from drinking and reclaimed water; Behnaz Razavi, who started her master's program in the group, working on the *in-situ* destruction of carcinogenic nitramine chemicals in drinking water in collaboration with HHMI student Nicholas Landsmann; Daryl Ewing and Casandra Cox, new undergraduate students in the lab, who started their research by going to the University of Notre Dame in January to perform kinetic and mechanistic radiolysis studies on pesti-

#### MICHAEL MYERS

This year, my lab group has continued working on characterizing stem cells from human umbilical cord matrix cells (HUMCs). These are human adult stem cells that hold great promise as a primordial cell line. Given the current political environment surrounding embryonic stem cell research, it is our hope that these cells will offer a valid alternative to embryonic stem cells. This work is made possible by a grant from the Research Corporation that was renewed for my group this year. We negotiated a new Materials Transfer Agreement with Kansas University to work on a new strain of HUMCs that were provided by my collaborator, Dr. Kathy Mitchell. We are looking at the development of ion channels in these stem cells as they differentiate into neurons. We are beginning to use qRT-PCR techniques to measure the expression of these ion channel proteins as well as the expression of various stem cell markers.

My research team has been joined this year by

as a career goal. Estrogen has its beneficial effects for women as it directly activates vascular smooth muscle cell Maxi-K channels. This causes relaxation of smooth muscles in the cardiovascular system, leading to increased blood flow and low blood pressure. This explains why menopausal women, who stop producing estrogen, become suddenly more susceptible to cardiovascular disease (Valverde et al., 1999). Her proposal, entitled "Using  $\alpha$ -KTx Mutants to Probe the Structure of Large Conductance Potassium Channels," was selected for funding this year. Only 10 of these awards were given across the state of California. This is our first award at CSULB in three years.

#### KEN NAKAYAMA

Our group has continued with the work involving enzyme inhibition studies in collaboration with Professor Roger Acey's research group. During the summer of 2004, undergraduate Ken Law (HHMI and President's Scholar) was the main



Several of my students graduated and there are some new additions to the group as shown in the photo. From left: Sandra Hernandez, Hanni Liang, Mary Guirguis, Heather Sanchez, Miguel Camacho, Susan Som, Jasmine Shaw, Rosmary Tajiboy, Dr. Ximeng Wang, Dr. Lijuan Li, Kurt Kenttel, Chaitali Sheth and Lan Chen.



From left: Dr. Tom Marigich and students Melissa Garza, Renata Meng, Douglas Thai and Edward Duran.



Seated left to right: Natalie Rangel, Thanuki Idangodage. Standing: Dr. Michael Myers, Gerald Vandeusen and Bryan Fiamengo.



From left: Elisabeth Jagggers, Dr. Ken Nakayama, Jennifer Casey and Aimee Deconinck. Missing is Connie Cajavilca.



From the left: Lucinda Dong, Shail Yadav, Luciano Castaneda, Darline Ky, Christopher Marumoto, Suzanne Pluskat, Chi Kin Liu, Judith Valle and Professor Kasha Slowinska. Not on the picture: Amparo-Adriana Gallegos, Sanaz Moshfegh and Deborah Payton

lactoferrin were replaced with the homologous segments of transferrin. These recombinant hybrid proteins were expressed in Sf9 insect cells using a baculovirus expression system. Vince's work focused on the effects of *in vivo* iron overloading of rats on the dynamics and ligand-binding activity of the asialoglycoprotein receptor, which is also the hepatic calcium-dependent receptor for lactoferrin. Vince found that *in vivo* iron overloading of rat livers did not inhibit the endocytic activity of these receptors and increased the amount of immunodetectable receptor protein by about two-fold. These findings were quite surprising and in stark contrast to the effects observed when isolated hepatocytes are overloaded with iron in culture. Grace and Vince are in the process of completing their theses describing their work. M.S. student Sid Seth has picked up Grace's project and has focused his efforts on purifying sufficient amounts of recombinant proteins from Sf9 conditioned

receptor mRNAs. Jennifer, Vanessa and Giovanni graduated this year, though Vanessa has continued to work in the lab this past summer. Jennifer was accepted into the M.D./Ph.D. program at the University of Illinois (Urbana-Champaign) and will be starting her first semester there this fall. Vanessa and Giovanni are applying for admission into medical school, a process that will likely continue throughout this next year. It's been a great pleasure for me to have them in my lab.

#### BRIAN L. McCLAIN

Dr. Brian L. McClain joined the faculty in the Department of Chemistry and Biochemistry at CSULB this fall. Brian is very much looking forward to returning to the Cal State system, as he received his bachelor's degree in chemistry from California State University, Chico in 1996. "The Cal State system is exceptional in its ability to produce well-trained students, and I'm excited to be

Fitch. Other activities that Brian enjoys are cycling, running and mountain climbing, where he hopes to soon conquer all 15 of the 14,000+ foot peaks in California.

#### STEVE MEZYK

Life is never dull in the Mezyk laboratory, and during my fourth year at CSULB, the number of students and projects we are working on continues to increase. New undergraduate and graduate students have taken the desks of students who have graduated and moved onto bigger and better things. A summary of the highlights of my group this year includes: Jace Jones, who received the American Institute of Chemists Graduate Award in 2004 and left CSULB to start his Ph.D. program in the Chemistry Department at the University of Washington, Seattle; Kathy High, who graduated from CSULB with a B.S. degree in chemistry, as well as the American Institute of Chemistry

cides and nerve agents in water; Teresa Helgeson, who graduated from CSULB and is starting her master's program in chemistry at Fresno State; Ricardo Encinez and Lisette Fernandez, who did CHEM496 projects; as well as Christine Bradford, Katy Swanscutt, and Michelle Hoang, all of whom worked in the laboratory.

This was also a very productive period in grants, publications and presentations. External grants from the Research Corporation will support our work on the use of advanced oxidation technologies to remove carcinogenic nitrosoamines from drinking water, and a travel grant from Brookhaven National Laboratory. We also published six papers, two of those were in *Environmental Science and Technology*, one in the *Journal of Physical Chemistry*, Part B, and three papers in the "Proceedings of the TiO<sub>2</sub>-9 and AOT-10 Conferences." There were five presentations at conferences.

a faculty member from the Nursing Department, Dr. Linda Callahan. She is an NIH-trained nurse anesthetist who will be looking at the effects of nitric oxide on the differentiation of HUMCs. This work continues a collaboration my lab has with Dr. Lijuan Li in the department.

My group is also continuing work on the structure and function of ion channels. We are using peptide toxins to scan the pore region of large conductance calcium sensitive potassium channels (Maxi-K). This work has been carried out by graduate student Chon Lai. We will study more toxin interactions in the coming months thanks to a Howell Foundation-CSUPERB student research award to my group, written by my undergraduate student Thanuki Idangodage. The Doris A. Howell Foundation is a recently established foundation based in La Jolla, Calif., which fosters the development of young investigators and encourages them to enter the field of women's health care research

force in this effort. Ken has just finished his first year of graduate studies at Yale's Ph.D. program in chemistry. Another HHMI and President's Scholar, Cameron Smith, spent most of the last academic year investigating the synthetic applications of organophosphates. Cameron will be entering the Ph.D. program in chemistry at UC Berkeley in the fall. I had four new undergraduates working with me in the summer of 2005. They were Jennifer Casey, Connie Cajavilca, Aimee Deconinck and Elisabeth Jagggers, all recruited from my organic lecture courses.

In the spring of 2005, our department hosted a workshop by Professor Don Paulson of CSULA on active and group learning in the organic curriculum. The workshop was very informative, but the results of applying some of Don's strategies in the classroom were truly gratifying. It was also a great pleasure to have Dr. Jon D. Rainier, currently an organic chemistry faculty at the University of



Utah, visit our department as a seminar speaker in the spring. Jon was my first M.S. student and completed a nice synthesis of a chiral auxiliary, for which several research groups have found some interesting uses.

On a personal note, our daughter, Karissa (six years old), is a very articulate child with command of both English and Japanese. Our son, Kendall (three years old), still prefers actions over words for the most part. They continue to be a source of joy for my wife and me.

#### KATARZYNA SLOWINSKA

Last year was my first year at The Beach. It was quite an experience to teach for the first time and start a new laboratory and new projects! In the spring, I taught the CHEM 251 (quantitative analysis) lecture, and I had a great time (I hope my students did, too). It was very different than my previous experience in a corporate setting. I also managed to organize the purchase of two new digital ovens for the 251 lab, so there will be no more problems with drying the samples!

Our laboratory started to operate in December 2004. I am very pleased, that the photolithographic microfabrication of devices is working very well for single layer masks and that our lab is the only place on campus with such capabilities. So far, the two other users of the processing lab are the Kris Slowinski group from Chemistry and the Chuhee Kwon group from Physics.

I have also spent a month in the lab of Dr. Kay Lee-Fruman to learn how to grow happy cells. It was a great experience, and we now have our own cell culture space set up.

Our group currently has two graduate students: Shail Yadav and Judith Valle; and five undergraduates: Suzanne Pluskat, Christopher Marumoto, Chi Kin Liu, Darline Ky and Luciano Castaneda. Lindy Wang just finished her project to lyophilize extracted collagen. Suzie, Chi and Darline are HHMI Scholars, and Luciano went to do research in Oxford, England, for the summer.

As a new laboratory, we need a lot of money! We received a grant from CSUPERB (hydrophobic interactions in control of delivery rate in targeted drug delivery systems) and the Cottrell Collage Award (diffusion of molecular probes in a collagen matrix: understanding hydrophobic interactions in local drug delivery systems) from Research Corporation. Currently, we are also working on our first manuscript, titled "The Structural Changes in Cross-linked Collagen Revealed by Electrochemical Time-of-Flight Method in Comparison with Circular Dichroism."

Research in our group is focused on understanding structure/property relationship and dynamic behavior of biologically inspired materials.

We also develop new strategies for the long-term operation of implantable sensors.

#### Biologically Inspired Materials

Nature can solve any problem related to structure/function relationship by evolution. We do not want to wait that long. Therefore, in our group we modify natural materials with inorganic compounds to yield the desired properties. We are especially interested in the dynamic behavior of such materials. We study collagen matrix, modified using tools derived from nanoscience. These materials can be designed to create new targeted drug delivery systems and scaffolds for tissue engineering.

#### Implantable Sensors

The biggest challenge in long-term operation of implantable sensors is to overcome the immunological response to the sensor. The living organism treats the sensor as a foreign body and isolates it by formation of a fibrous capsule. The encapsulation prevents blood stream-sensor contact, hence nutrients, oxygen and other species of interest cannot be detected by the sensor. In our lab, we are attempting to gain some control over fibrous capsule formation. We would like to induce porosity into the capsule's structure and thus ensure the contact of a sensor with the blood stream. To assess a capsule's permittivity and its changes, we are developing new methods to study directional transport of ions and molecules through the capsule

To read more, visit us on our brand new website developed by Chi Kin Liu!

#### PAUL WEERS

This year was a very exciting time for our research lab and me.

We moved to our new "home" in the Molecular Life Sciences Center, which has an excellent research infrastructure and well-equipped labs. My research group in 2005 was a mixture of undergraduate students (Lesley Vasquez, Wazir Ezedine, Leonardo Leon and Hasitha Idangodage), and graduate students (Cindy Pratt, Tzu-Chi Hsu and Leon Wan). Our work is focused on a special class of proteins, namely exchangeable apolipoproteins. These proteins reversibly associate with lipoproteins, which are the vehicles for lipid transport in our circulation and are responsible for maintaining lipid homeostasis.

Currently, we have two productive lines of research. Wazir and Tzu-Chi were able to produce mutant proteins that were altered in their stability properties as shown by a thorough biophysical characterization using circular dichroism and fluorescence spectroscopy. Our findings led to the concept that apolipoprotein stability is inversely correlated with lipid binding. We presented our results at the Biophysical Society Meeting, which was conveniently held in Long Beach, February 2005. This work resulted in a publication that appeared in the June 2005 issue of *Biochemistry* (44, 8810-8816). High resolution structures of the lipid-free forms of the protein have been known since 1994, and funded by a NIH-AREA grant, we are attempting to obtain the high resolution structure of the lipid-bound protein. Leon Wan is a new graduate student, and his goal is to obtain crystals of lipid-bound apolipoprotein (which is the biologically active form of the protein).

We also made significant progress with a second line of research, in which we investigated the involvement of apolipoproteins in innate immunity. Cindy convincingly demonstrated the association of the protein with the lipopolysaccharide cell wall components of gram-negative bacteria.

Lipopolysaccharides are very toxic (causing septic shock), and our research suggests that apolipoproteins have a potential to effectively neutralize these toxic compounds. We have published our findings in the November 2004 issue of *Biological Chemistry* (385, 1113-1119). Leo (RISE funded), Cindy and I presented our research progress at the Experimental Biology Meeting in April, San Diego. Lesley and Hasitha, both funded

## WEERS



Photo by Victoria Sanchez

From left: Tzu-Chi Hsu, Derek Eglit, Leslie Vasquez, Hasitha Idangodage, Leon Wan, Cindy Pratt, Leonardo Leon, and Professor Paul Weers on the far right.

by HHMI, recently started their studies of apolipoprotein-lipopolysaccharide interaction. These studies should provide us with a molecular understanding of how apolipoproteins play a role in innate immunity.

# Brian L. McClain



Photo by David J. Nelson

## New Face Joins the Faculty

by Douglas McAbee

This past year, the department successfully completed its search for a new physical chemist with the hiring of Dr. Brian McClain, who joins our faculty this fall. It is notable that the pool of applicants for this faculty position was strong and deep, and the finalists for this position were really outstanding. McClain was the department's first choice among these finalists, and we are very pleased to have someone of his caliber join our faculty.

McClain received his B.S. chemistry degree from California State University, Chico in 1996, and he is very much looking forward to returning to the Cal State system as a faculty member in our department. As McClain writes, "The Cal State system is exceptional in its ability to produce well-trained students, and I'm excited to be giving back to the system that gave so much to me."

After finishing at Chico, McClain set off to Indiana to pursue his graduate degree at Purdue University (West Lafayette). He worked under the supervision of Dr. Dor Ben-Amotz and focused his studies on understanding the

structure of liquids using Raman spectroscopy. He completed his dissertation at Purdue in 2002, returning to California for a post-doctoral position at Stanford University and working with Dr. Michael D. Fayer. At Stanford, McClain studied femtosecond protein dynamical motions, primarily focusing on heme-bound proteins.

McClain's primary research interests are focused on the dynamical interactions of various substrates with human serum albumin (HSA). HSA is the most abundant protein in human blood plasma, and understanding its ability to discriminate various substrates may give insight into how protein-drug interactions occur.

In his time away from campus, McClain enjoys spending time with his wife of 10 years, Heidi, and their two Jack Russell terriers, Abercrombie and Fitch. Other activities that Brian enjoys are cycling, running and mountain climbing, where he hopes to soon conquer all 15 of the 14,000+-foot peaks in California.

#### PETER BAINE

Dr. Baine is entering his fifth year in the Faculty Early Retirement Program, and he will be teaching in the department during the spring 2006 semester.

#### DOROTHY GOLDISH

I'm still working half time under the Faculty Early Retirement Program. I had expected to return to teaching, but so far, I'm still assisting administrative offices. In 2005-06, I'll be working part time with Academic Affairs and part time with the College of Natural Sciences and Mathematics. It's great having time for other activities, including gardening, knitting, reading and spending time with my three grandchildren when possible.

#### HENRY PO

Dr. Po is entering his third year in the Faculty Early Retirement Program and teaching during the spring semester. Dr. Po has spent a great deal of time recently in helping to develop the new introductory inorganic course (CHEM 331), which is being offered for the first time in the fall semester. The laboratory (CHEM 332) will be offered for the first time in the spring 2006 semester. Po is working this fall on completing the development and troubleshooting of laboratory exercises for this course.

#### Nail Senozan

In May, I traveled to western Turkey and enjoyed the company of several of my colleagues at the Aegean University, Izmir, where I spent two years as a Fulbright professor and where my daughter, Erin (now 20), and son, Sean (14), were born.

After turning my responsibilities as the editor of this newsletter over to Drs. Buonora and McAbee, I was able to devote more time to teaching Chem 101, Introductory General Chemistry. Through this endeavor I had the good fortune to collaborate with Dr. Slowinski. His philosophy, youthful energy and in-depth understanding of chemistry have been an inspiration to me.



# Awards & Scholarships

Chemistry and Biochemistry Students

2005

## ENDOWED AWARDS

### ROBERT B. HENDERSON AWARD



Zeynep Asli Oztug

The Robert B. Henderson Award was established by Dr. Henderson's family, colleagues and friends to honor his memory. Henderson was a member of the Department of Chemistry and

Biochemistry from 1955-83 and a distinguished scientist and teacher of organic and general chemistry. Recipients for this award are chosen from among bachelor's and master's graduates as those best exemplifying Henderson's scholarship and commitment to the profession of chemistry. This year's award of \$1,000 was presented to **ZEYNEP ASLI OZTUG** and **LAN CHEN**. Both Oztug and Chen are entering Ph.D. programs this fall: Oztug to UCLA (biochemistry) and Chen to UC Irvine.

### KENNETH L. MARSI SCHOLARSHIP

This \$1,500 scholarship, established by faculty, staff, family, friends and former students on the



Amber Valencia

occasion of Dr. Marsi's retirement, is used to defray registration fees of outstanding junior and senior chemistry or biochemistry majors. This year's scholar is **AMBER VALENCIA**, who is a dual B.S. chem-

istry/B.S. biochemistry major and working in the lab of Dr. Eric Marinez in organic chemistry.

### MICHAEL MONAHAN FELLOWSHIP

The Monahan Award was established through a generous bequest from Dr. Michael Monahan, an alumnus of our department who received his B.S. in chemistry in 1963 and his Ph.D. in 1968 at UC San Diego in physical organic chemistry. While an undergraduate, he was a research student



Lan Chen

of Dr. Robert Henderson. He was a distinguished scientist and a member of the faculty at the Salk Institute and subsequently a senior research scientist at Beckman Instruments. Monahan was also the founder and president of California Medicinal Chemistry Corporation. In 1985-87, following his retirement, he served as a lecturer in our department. According to his will, the income from his bequest is to be used to support student research in our department. This is the ninth year this \$2,500 award has been given, and the recipient is **LAN CHEN**. At the time of this writing, Chen completed her M.S. thesis in Dr. Li's lab this past summer and started a Ph.D. program in chemistry this fall at UC Irvine.



Daryl Ewing

year this award has been granted and is made possible by friends of Spyros Pathos IV, who was an undergraduate chemistry major in our department at the time of his death in 1993. This year's recipient is **DARYL EWING**, who is a B.S. KPE exercise science major.

### SPYROS PATHOS IV AWARD

The Spyros Pathos IV Award is presented annually to a student excelling in the second semester of general chemistry, Chemistry 111B. This is the 11th

### DAVID L. SCOGGINS AWARD

This award memorializes David L. Scoggins, a 1968 B.S. chemistry graduate of CSULB and a graduate student and teaching assistant in the Department of Chemistry at the time of his death in 1969. The award recognizes outstanding scholarship and promise by a graduating chemistry or biochemistry student who intends to pursue a career in one of the health-related professions. The Scoggins scholar this year is **VICKI SHAH**, who is planning to go to medical school.



Vicki Shah

### JOHN H. STERN AWARD IN PHYSICAL CHEMISTRY

The Stern Award, consisting of a cash prize, is given in memory of Dr. John H. Stern, internationally known for his work in solution thermodynamics and author of many publications in that field. The award was established by colleagues, former students and friends of Stern, who was a member of our faculty from 1958-87 and a distinguished teacher of physical and general chemistry. **CASSANDRA KLEVE**, a B.S. biochemistry student, was named the recipient of the Stern Award for 2005.



Cassandra Kleve

## SUBJECT AREA AWARDS

Freshmen Chemistry Award:

**LIM SO KWAC**

American Chemical Society, Polymer Chemistry Award:

**JENNIFER CASEY**

American Chemical Society, Analytical Chemistry Award:

**HOA-NU LE**

Organic Chemistry Award:

**AMBER VALENCIA**

Merck Award in Organic Chemistry:

**MELISSA FLORES**

Biochemistry Award:

**CASSANDRA KLEVE**



Lim So Kwac



Jennifer Casey

Photo by David J. Nelson



Hoa-Nu Le



Melissa Flores

## DEPARTMENTAL AWARDS

Toni Horalek Award for Departmental Service:

**TZU-CHI HSU**

Hypercube Award:

**CHRIS WOSTENBERG**

Departmental Undergraduates Honors:

**JENNIFER LAPRISE, WENDY SHOEMAKER and CAMERON SMITH**

Departmental Graduate Honors:

**BRIAN BAKER, CHRISTOPHER FROST and ZEYNEP ASLI OZTUG**

American Institute of Chemists Baccalaureate Award:

**WENDY SHOEMAKER and CAMERON SMITH**

American Institute of Chemists Graduate Award:

**BRIAN BAKER and JOHN LIARAKOS**



Tzu-Chi Hsu



Christopher Frost



Wendy Shoemaker



Cameron Smith



Brian Baker



John Liarakos

## COLLEGE & UNIVERSITY AWARDS

Graduate Dean's List of University Scholars and Artists:

**ZEYNEP ASLI OZTUG**

Robert B. Rhodes Award:

**CAMERON SMITH**

Outstanding Thesis in Life Sciences,

Kenneth L. Johnson Award:

**CHRISTOPHER FROST**

Initiated into Phi Beta Kappa:

**CHAITALI SHETH**



Chaitali Sheth

Photo by Victoria Sanchez



**ROGER ACEY**

racey@csulb.edu

**DENNIS ANJO**

danjo@csulb.edu

**PETER BAINE**

pbaine@csulb.edu

**STUART BERRYHILL**

sberryhi@csulb.edu

**CHRISTOPHER BRAZIER**

cbrazier@csulb.edu

**XIANHUI BU**

xbu@csulb.edu

**PAUL BUONORA**

pbuonora@csulb.edu

**JEFFREY COHLBERG**

cohlberg@csulb.edu

**DOROTHY GOLDISH**

goldish@csulb.edu

**LIJUAN LI**

lli@csulb.edu

**ROBERT LOESCHEN**

loeschen@csulb.edu

**MARCO LOPEZ**

lopezm@csulb.edu

**TOM MARICICH**

tmaricic@csulb.edu

**ERIC MARINEZ**

emarinez@csulb.edu

**DOUGLAS McABEE**

dmcabee@csulb.edu

**BRIAN McCLAIN**

???????@csulb.edu

**MARGARET MERRYFIELD**

mmerry@csulb.edu

**STEPHEN MEZYK**

smezyk@csulb.edu

**MICHAEL MYERS**

mmyers2@csulb.edu

**KEN NAKAYAMA**

nakayama@csulb.edu

**HENRY PO**

hpo@csulb.edu

**NAIL SENOZAN**

nsenozan@csulb.edu

**KASHA SLOWINSKA**

kuslowin@csulb.edu

**KRZYSZTOF SLOWINSKI**

kslowins@csulb.edu

**PAUL WEERS**

pweers@csulb.edu

## Research Publications for Department Faculty

2004 - 05

**XIANHUI BU**

- Zheng, N., X. Bu, and P. Feng. 2004. Cluster Compounds: Pentasupertetrahedral Clusters as Building Blocks for a Three-dimensional Sulfide Superlattice. *Angewandte Chemie, International Edition*. 43(36):4753-4755.
- Wasilke, J.C., Z.J.A. Komon, X. Bu, and G.C. Bazan. 2004. Ring Closure of 1,4-Pentadiene to Cyclopentene by a Zwitterionic Nickel Catalyst. *Organometallics*. 23(18):4174-4177.
- Bu, X., N. Zheng, and P. Feng. 2004. Tetrahedral Chalcogenide Clusters and Open Frameworks. *Chemistry—A European Journal*. 10(14):3356-3362.
- Bu, X., N. Zheng, X. Wang, B. Wang, and P. Feng. 2004. Three-dimensional Frameworks of Gallium Selenide Supertetrahedral Clusters. *Angewandte Chemie, International Edition*. 43(12):1502-1505.

**PAUL BUONORA**

- Buonora, P.T. and Y.J. Lim. 2004. The Substitution-Elimination Mechanistic Disc. *J. Chem. Educ.* 81:368 ff.

**JEFFREY COHLBERG**

- Zhang, G., P.H. Spencer, L.Q. Jin, J.A. Cohlberg, J.M. Beaulieu, J.P. Julien, and M.E. Selzer. 2004. The Single Neurofilament Subunit of Lamprey May Need Another Element for Filaments Assembly. *J. Comp. Neurol.* 471:188-200.

**EUGENE KALBUS, VAN LIEU**

- Kalbus, G.E. and V.T. Lieu. 2005. Infrared Examination of the Transformation of Barium Sulfate into Barium Carbonate. An Inorganic Infrared Qualitative and Quantitative Experiment. *J. Chem. Ed* (in press).

**LIJUAN LI**

- Wang, C., Y. Zhang, L. Dong, Y. Zhao, S. Feng, Y. Zhou, L. Li, and Y. Wei. 2005. Roles of TiO<sub>2</sub> Nano-Particles in the Formation of Monolithic Silica-Gels via Bulk Sol-Gel Process. *Colloid Journal* (in press).
- Wang, X., E.B. Sundberg, L. Li, K. Kantardjiev, S. Herron, M. Lim, and P.C. Ford. 2005. A Cyclic Tetra-Nuclear Dinitrosyl Iron Complex [Fe(NO)<sub>2</sub>(imidazolate)]<sub>4</sub>: Synthesis and Structure. *J. Chem. Soc. Chem. Comm.* 477-479.
- Wang, S., X. Wang, L. Li, and R.C. Advincula. 2004. Design, Synthesis and Photochemical Behavior of Poly(benzyl ester) Dendrimers with Azobenzene Groups Throughout Their Architecture. *J. Org. Chem.* 69:9073-9084.

**MARCO LOPEZ, NANCY GARDNER**

- Lopez, M.A., N.J. Gardner. 2004. Free Energy of CO Binding to Iron Protoporphyrin IX in Water. *Inorganica Chimica Acta*. 357:2427-2436.

**STEVEN MEZYK**

- Mezyk, S.P., J. Jones, W.J. Cooper, T. Tobien, M.G. Nickelsen, J.W. Adams, K.E. O'Shea, D.M. Bartels, J.F. Wishart, P.M. Tornatore, K.S. Newman, K. Gregoire, and D.J. Weidman. 2004. Radiation Chemistry of Methyl-tert-Butyl Ether (MTBE) in Aqueous Solution. *Environ. Sci. Technol.* 38:3994-4001.
- Mezyk, S.P., W.J. Cooper, K.P. Madden, and D.M. Bartels. 2004. The Free Radical Destruction of N-Nitrosodimethylamine (NDMA) in Water. *Environ. Sci. Technol.* 38:3161-3167.
- Kiddle, J.J. and S.P. Mezyk. 2004. Reductive Destruction of Chemical Warfare Agent Simulants in Water. *J. Phys. Chem. B*. 108:9568-9570.

**MICHAEL MYERS**

- Myers, M. P., R. Khanna, E.J. Lee, and D.M. Papazian. 2004. Voltage Sensor Mutations Differentially Target Misfolded K<sup>+</sup> Channel Subunits to Proteasomal and Non-Proteasomal Disposal Pathways. *FEBS Letters*. 568:110-116.

**HENRY PO**

- Khin, C., S.C. Shen, R. Mahmud, M. Weiss, and H.N. Po. 2004. Kinetics and Mechanism of the Oxidation of a Cyclic Thioamide by Silver(II)-cyclam. *J. Coord. Chem.* 57:1015-1026.

**KASHA SLOWINSKA**

- Slowinska, K. and M. Majda. 2004. Measurements of the Capacitance and the Response Time of Solid-State Potentiometric Sensors by an Electrochemical Time-of-Flight Method. *Journal of Solid State Electrochemistry*. 8:763ff.

**KRZYSZTOF SLOWINSKI**

- York, R.L., D. Nacionales, K. Slowinski. 2005. Electrical Resistivity of Monolayers and Bilayers of Alkanethiols in Tunnel Junctions with Gate Electrode. *Chemical Physics*. (in press).
- Sek, S., R. Bilewicz, and K. Slowinski. 2004. Electrochemical wiring of  $\alpha,\omega$ -alkanedithiol Molecules into an Electrical Circuit. *Chem. Commun.* 4:404-405.

**PAUL WEERS**

- Weers, P.M., W.E. Abdullahi, J.M. Cabrera, and T.C. Hsu. 2005. Links Role of Buried Polar Residues in Helix Bundle Stability and Lipid Binding of Apolipoprotein III: Destabilization by Threonine 31. *Biochemistry*. 44(24):8810-8816.
- Pratt, C.C., and P.M.M. Weers. 2004. Lipopolysaccharide Binding of an Exchangeable Apolipoprotein, Apolipoprotein III from *Galleria Mellonella*. *Biol. Chem.* 385:1113-1119.

## Gifts by Individuals



During the 2004-05 fiscal year, the department received gifts totaling **\$36,445**. Of this amount, **\$7,454** was given in cash by individuals, \$25,000 from the estate of the late Dora Henderson, and \$1,000 from the Community Foundation of Tomkins County (Ithaca, NY) and Sue Perlgut, in honor of her late father, Dr. Louis Perlgut. The faculty, staff and students of our department are very grateful for their generosity.

The late Dora J. Henderson, through her trust, bestowed \$25,000 to the department earlier this year. Mrs. Henderson was the widow of Dr. Robert B. Henderson, one of the founding faculty of the department. In her letter, their daughter, Kathryn McClelland, remembered her mother as "Queen Mother of the Chemistry Department." Dr. Henderson was a distinguished scientist and teacher of organic and general chemistry from 1955-83. The department will add the gift to the Robert B. Henderson Fund, established by his friends and family, which provides awards for outstanding graduating students. The faculty and students of the department are touched that Mrs. Henderson continues to care about the department, and pleased that her interest will benefit additional outstanding students.

Sue Perlgut, the daughter of the late Dr. Louis Perlgut, has established a memorial scholarship in his name, the Louis Perlgut Memorial Scholarship. The scholarship is awarded each year to an outstanding biochemistry student. Sue said, "My father was dedicated to his students and would be pleased that future generations of biochemistry students can be helped this way." Dr. Louis Perlgut was a professor of biochemistry in our department for many years. He was among the faculty who initiated the M.S. biochemistry program and served as its first graduate advisor, providing helpful advice to several generations of students. He also taught the organic and biochemistry courses for nurses for many years. According to Jeff Cohlberg, professor of biochemistry, "Dr. Perlgut's warm avuncular manner helped him to win the almost universal affection of those students, many of whom changed their major from nursing to biochemistry." The department is indebted to the Perlgut family for this most generous gift.

Cash gifts are used for scholarships, awards, the seminar program, and purchase of supplies and equipment for which there is not adequate state funding. Also, the costs of publishing the Department of Chemistry and Biochemistry newsletter are met with private giving. You may give an in-come tax-deductible gift directly to the department by sending a check to:

CSULB Foundation/Chemistry Fund  
Department of Chemistry and Biochemistry  
California State University, Long Beach  
1250 Bellflower Boulevard  
Long Beach, CA 90840-3903

The Office of University Relations and Development is informed of all gifts, and you will receive a personal letter of acknowledgement from the department. You might investigate the possibility of your company matching employee gifts, which multiplies the value of your gift to the department.

If you are contacted through the university giving program and a gift is requested, please specify the Department of Chemistry and Biochemistry as the recipient of your gift, if that is your intention. Thank you!

## Corporate Gifts to the Department

The total value of cash and in-kind gifts to the department during the fiscal year ending June 30, 2005 was **\$1,150**.

Companies and foundations contributing in-kind gifts were:  
Allergan Corporation

Matching gifts totaling **\$800** were received from the following companies (employees whose gifts were matched are given in parentheses):

Beckman-Coulter\* (Dr. Steve Pentoney)  
Boeing Company\* (Dr. Norman Byrd, Dr. Arie Passchier)

\*Companies are members of the Chemistry and Biochemistry Advisory Council.

## Honor Roll of Individual Donors

(July 1, 2004 – June 30, 2005)

|                             |                           |                            |                             |                         |
|-----------------------------|---------------------------|----------------------------|-----------------------------|-------------------------|
| Courtenay Anderson          | Daryl Fukuda              | Jimmy Holstein             | Mark E. Murray              | Sondra Thomas           |
| Robert Blair                | Victor C. Gearhart        | Dr. Robert Hutchins        | David R. Oliver             | Dr. William A. Tomasson |
| David and Teresa Bothman    | Bernard L. Goeders        | Charles John               | Dr. Arie and                | Dr. Greg Whitaker       |
| Dr. Oliver M. Brown         | Dr. Elihu and Dr. Dorothy | Dr. Peggy Kline            | Mrs. Deanna Passchier       | Dr. Carter J. White     |
| Dr. Norman Byrd             | Goldish                   | Dr. Bette Korber           | Melanie Patterson           | Dr. Delyse R. Williams  |
| Victor Cachia               | Rick Goyt                 | Dr. John D. Kulluk         | Dr. Steve L. Pentoney, Jr.  |                         |
| Ronald and Kathleen Carroll | John and Sharon           | Timothy MacAndrew          | Martha Peralta              |                         |
| Dr. Alan Cunningham         | Gutschenritter            | Dr. Lewis Manring and      | Robert E. Phillips, Jr.     |                         |
| Gregory J. Dorsman          | Dr. Sharon Hansel         | Dr. Marianne Marsi Manring | Michael and Mary Porter     |                         |
| Dr. Daniel A. Farney        | Dr. Gary Hathaway         | Diane C. McGann            | Dr. Theresa Rohr-Kirchraber |                         |
| Mr. and Mrs. Danny Freitas  | Margaret A. Hohly         | Patrick A. McKay           | Robert M. Stevens           |                         |



CALIFORNIA STATE UNIVERSITY, LONG BEACH  
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY  
1250 BELLFLOWER BOULEVARD  
LONG BEACH, CA 90840-3903

RETURN SERVICE REQUESTED



Nonprofit org.  
U.S. Postage  
**PAID**  
Permit No. 301  
Long Beach, CA



*Members of the 2004-05 graduating class with several members of the Chemistry and Biochemistry Department faculty*

*In addition to meeting fully its obligations of nondiscrimination under federal and state law, CSULB is committed to creating a community in which a diverse population can live and work in an atmosphere of tolerance, civility, and respect for the rights and sensibilities of each individual, without regard to economic status, ethnic background, veteran status, political views, sexual orientation, or other personal characteristics or beliefs.*

*Design, photography and editorial assistance provided by University Publications and Public Affairs, 2005*