

In 2005, a U.S. National Academies' panel issued a report entitled "Rising Above the Gathering Storm". This report provided a blueprint for sustaining economic growth in the U.S. by strengthening the research and educational systems (• • , 21 October 2005, p. 423). This report included 20 priorities, ranging from putting out more and better science and math teachers to increasing funding for research, especially in the physical sciences and engineering. The realization was there that we must do a great deal more in order for the U.S. to stay competitive in an international environment.

As such, Congress responded by passing the COMPETES (Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science) Act on August 2, 2007 (• • , 10 August 2007, pps. 736-737), which authorizes \$43 billion over three years to support numerous programs. This act, for example, provides for a jump in a \$10-million per year program to give scholarships to science, math, and engineering undergraduates who promise to teach. It puts NSF on a seven-year doubling track for funding. It creates grants for young scientists who have failed in their first NSF submission to help increase their chances of success the next time. All of these have very important implications for CSULB, our College of Natural Sciences and Mathematics, and the Department of Chemistry and Biochemistry. In a highly competitive funding environment, these can make a real difference for our faculty and their teaching/research programs for students.

Our role as a comprehensive master's institution is very important in the national scene to increase the number of science,

technology, engineering, and mathematics (STEM) majors as

well as teachers who are highly qualified to teach middle school and high school science and mathematics. The need to keep students in the pipeline for STEM careers means we have to work constantly to provide the best programs and opportunities for all of our students. Our students have to see the relevancy of what they are learning in the classroom, they have to be encouraged and nurtured, and they need hands-on opportunities to explore the process of doing science.

The faculty members in the Department of Chemistry and Biochemistry are doing an excellent job of this. As chair, Doug McAbee indicates in his article that things are in transition in the department, and the faculty are making changes in the teaching of chemistry to increase student learning and engagement in the process. Because much of the research and jobs these days requires a strong chemistry foundation and content, it is essential that we provide the very best in chemistry curriculum for all students in the college and those we serve from other colleges.

We also have to adapt to the way this generation of students learns, which is different from how their faculty members learned. More than 250 of our undergraduate students do research with the faculty along with our master's candidates each year—one of the best possible ways we know to teach and encourage young scientists to stay in their major and go on to graduate programs and careers in all areas of education, indus-

try and government. We do an excellent job of providing experiences and support for students to keep them in the pipeline for careers in science and math. We are making significant contributions to the goals and priorities set out in the U.S. National Academies' report and look forward to the

Their addition provides our students with excellent instruction and new opportunities for research. You will be pleased to read more about Dr. Schramm and Dr. Sorin in a separate article in the newsletter. The department initiated two faculty searches this past year, one for a biochemist and one for an inorganic chemist. Due to the state's anticipated revenue shortfall for 2008-09, we were forced to postpone the inorganic search indefinitely. We hope to conclude the biochemist search successfully by late spring.

Dr. Margaret Merryfield has assumed the position of senior director for AcantMer sovc

Faculty and Staff Changes

We have had some noteworthy changes in our department faculty this past year. After 43 years of distinguished service, Dr. Nail Senozan fully retired from the department, having taught his last semester as an emeritus professor this past fall. Dr. Peter Baine, emeritus professor who was Dr. Senozan's close colleague in the department since the 1960s, writes about Dr. Senozan's life in our department in this newsletter. Even though he is now fully retired, Dr. Senozan has indicated he is willing to teach on occasion if the need arises. We are greatly indebted to Dr. Senozan for his service to the department, and we wish him the very best in all his future travels and endeavors.

Last fall, we welcomed two new faculty members to the department, Dr. Michael Schramm (organic chemist) and Dr. Eric Sorin (computational chemist). Dr. Schramm comes to us most recently from Scripps Research Institute in La Jolla, Calif., and Dr. Sorin from Stanford University. Both bring valuable research expertise and great teaching potential to our department, and we are very pleased to have them join us.

"We are interested in the electrical properties of either single molecules or two dimensional monomolecular assemblies—monolayers of molecules immobilized on various surfaces."

During his first four years at CSULB, "we constructed a new type of macroscopic tunnel junction that allowed us to perform experiments in water. Our paper, co-authored by two undergraduate students, Roger York and Phuong Nguyen, describing this electrochemically controlled junction, was published in the prestigious

J. Phys. Chem. B 10: 11111-11115 (2006).

Slowinski later received a National Institutes of Health Support of Continuous Research Excellence (SCORE) grant that enabled him to purchase a scanning tunneling microscope, which allows imaging of single atoms and molecules.

Based on his earlier work, "we used our electrochemical approach for single molecule measurements. We were able to monitor the influence of the formation of a single chemical bond on the conductivity of a molecule," said Slowinski, who with visiting Ph.D. student Emil Wierzbinski published the results in 2006 in *J. Phys. Chem. B*, a leading physical chemistry journal. "Then, we further expanded this research into biologically related molecules. We were interested in the conductivity of single DNA molecules in an aqueous environment. We have found that the conductivity of DNA strongly depends on the orientation of the molecule within the tunnel junction." That study, co-authored with undergraduates Bill Hammond and Justin Arndt, also appeared in *J. Phys. Chem. B* in 2006.

"There is a pretty well established notion that the presence of a mutation in DNA decreases electrical conductivity of the DNA molecule," he continued. "For this reason, if you develop a reliable method to measure the electrical properties of DNA, then you can think about constructing a sensor that will use the electrical conductivity of a molecule to actually detect the presence of a mutation within the DNA. Of course, we are far from developing anything like that, but the fundamental research that we do is going in this direction."

His lab is one of the few in the world conducting electrical characterization of single molecules in water. He hopes to expand the use of this method to other biologically relevant molecules, for example, redox proteins. "The ability to change the redox state of proteins in conjunction with the possible catalytic functions of proteins makes them desirable candidates for nano-molecular analytical devices. Furthermore, the intermolecular recognition characteristics of proteins may facilitate 'programmed' assembly of the future bio-nano-circuits as well as allow development of novel analytical approaches."

With four grants from Research Corporation, American Chemical Society's Petroleum Research Fund, NIH and NATO received since 2001, Slowinski and his students are engaged in several other projects. By using a different device—a scanning electrochemical microscope—"we characterize DNA monolayers modified with redox intercalators. This collaborative project with Professor Michael Hill from Occidental College might result in the development of a new method of microscopic imaging of single nucleotide polymorphisms."

Other projects in his laboratory include the use of a line electrode voltammetry to study Langmuir monolayers of conducting poly-

are able to migrate over long distances, and what better fuel is there than fat," Weers said. "But, that's the problem—how to transport all this fat. Thanks to the presence of a small protein called apolipoprotein III, insects are able to do this very efficiently. That's one of the reasons why—

CHAIR'S REMARKS

for some months. Nonetheless, in anticipation of the demolition, the department will relocate all of the teaching labs from PH3 (including introductory and general chemistry) to previously dormant labs in PH2 for classes this next year. This relocation, while necessary, will reduce the total number of labs we can offer during construction and will also require the department to re-open the chemistry stockroom in PH2 to serve teaching and research labs in that building. In the interim, we will relocate some teaching labs to spaces in PH2 to vacate space in PH3 and make way for new faculty members in MLSC.

As part of this process, the college has been very busy renovating much of the lab space in PH1 and PH2, including converting the "Henderson" organic chemistry teaching labs into usable research space for several faculty. Of course, occupied teaching and research spaces in PH2 are temporary until complete PH3 replacement building project, at which point all department faculty will be housed in either the new building or MLSC. Research and teaching in this transition time will be challenging for the entire department community, but I am confident that our faculty, staff, and students will rise to the occasion and meet this challenge with resourceful and creative solutions.

Besides the undertaking of a major building project, the department has also begun redeveloping and articulating its mission in a fresh way. In 2005-06, the department completed

a scheduled self-study initiated in 2003, and a variety of department strengths and weaknesses were revealed by this review. In response, the department has contracted the services of an external consultant, Elaine McClanahan, to assist us in the development of a strategic plan that will provide a framework for department direction over the next 10 years. The initial phase of this process, which will be completed over a period of about 12 months, began in February 2007, and will include three faculty retreats, two of which were held in June and October 2007. Ms. McClanahan came to us highly recommended by our chemistry colleagues at CSU Fullerton, and her work with us thus far has been strong and positively received by the department faculty.

2007-08

As outlined above and detailed elsewhere in the newsletter, the department community is very active and engaged in its educational mission, and we look forward to the opportunities and challenges during this academic year. As always, it is our great pleasure to hear from our alumni and friends about their professional and personal activities and accomplishments. We are also most grateful for the financial support that many of you have provided us this past year, donations that may seem small but collectively accomplish so much and benefit so many.

by Anne Ambrose

Advisory Board Profile

Among **Steve Pentoney's** proudest professional achievements is his 1997 induction into Beckman Coulter's Inventors Hall of Fame for patents he has received in the areas of laser chemical analysis, DNA sequencing and capillary electrophoresis.

Pentoney is director of advanced systems chemistry for Beckman Coulter's Advanced Technology Center in Fullerton, Calif. Over the years, he received 17

The club is better known to Peterson Hall and MLSC dwellers as SAACS. Dwindling membership over the past few years has led to the club's presence on campus as being more incognito. However, this past spring semester was a springboard for the revival of SAACS. The first meeting started with a bang reminiscent of an ammonium tri-iodide reaction; a highly sought after CSULB parking pass was raffled off, which drew over 100 interested students (a tradition that will continue indefinitely). Students were introduced to a club that promotes student-faculty interaction as well as bridges students with local industries. And just as the meeting was really heating up, the student affiliates cooled things down with an edible experiment by making liquid nitrogen ice cream.

The rest of the semester's meetings proved a time for experimenting with chemistry in everyday life, including a quantitative test of carbonated beverages and Mentos under varying conditions (see

Diet Coke and Mentos videos on YouTube). A St. Patrick's Day social was held at the home of Dr. Nail Senozan, who was generous enough to lend us his house for the day (so sorry about the garbage disposal,



Michael Schramm

by Anne Ambrose

Helping the six departments and four institutes and centers within CSULB's College of Natural Sciences and Mathematics to thrive financially is the responsibility of Maryanne Horton, the college's new director of development.

"I am responsible for cultivating major gift support for the college and all of its programs, with a focus on specific college priorities," she explained. "Those include scholarship support and both student and faculty research support, as well as to help with capital equipment when that's needed. But, it's truly to develop relationships with alumni and help them do wonderful things with their philanthropic dollars.

"We're really trying to bring alumni back to the college and get them involved and let them know what kind of value their degree holds because it has continued to grow over the years. There is a so much for them to be proud of."

With one recent new science building completed and another on the way, "It's a very exciting time," she noted. "As I talk with alumni, it seems to me that the quality of education has always been very good, here. So many of our alumni credit their college experience with their success and have wonderful things to say about the faculty and the atmosphere in our college, being very welcoming and supportive. They felt that the college had a vested interest in their success and that made them feel very good about being here."

Horton received her B.A. in history from UC Berkeley, which included a year of physics and chemistry study as a personal interest, and an MBA in arts management from UCLA. The veteran fundraiser has worked for the Los Angeles Opera, KUSC-FM Classical Radio, Cal State L.A.'s High School for the Arts, and most recently for Cal State Fullerton's Engineering and Computer Science program. But, the 16-year Long Beach resident was enthusiastic about joining CSULB.

The ability of Cal State Long Beach students to conduct research and be co-authors on articles in major research journals "is really a hallmark of our program, here. In a UC situation, an undergraduate would not have that opportunity. That's the purview of graduate students," she remarked. "We hear from industry quite a bit that our students graduate bench-ready and in some ways are better prepared, coming with an undergraduate degree than perhaps someone out of a UC who hasn't spent that much time in a lab. It's definitely a distinction for this university and for our college, in particular."

To learn more about support opportunities for the Department of Chemistry and Biochemistry, contact Horton at 562/985-1687 or mhorton@csulb.edu.

Xianhui Bu

During the past year, there has been a significant change in the makeup of my group. Dan-Tam Nguyen, one of my M.S. students, left the group after finding a position with Terumo Cardiovascular Systems. Tam spent three years with me working on open-framework materials based on metal sulfites and published three papers in

Tom Maricich

This past year, I shared the coordination of the department seminar program with Paul Buonora. I arranged the fall and Paul did the spring. If any of our alumni would like to volunteer for future seminars, please contact me at tmaricich@csulb.edu or Paul at pbuonora@csulb.edu.

There are three undergraduate students and three graduate students in my research group. Also, Andrea Chen and Thach Ho help to mentor my students and work on projects when they are not teaching. Undergraduates Nai-Chia Kuan and Jeremy Wood, Provost Scholars this past summer, are studying the HBF4-OMe₂ catalyzed sulfonimidate alkylation reactions of alcohols. They have observed rapid (minutes) room temperature ethylation of alcohols without rearrangements in high yields. Likewise, Christine Bradford, President Scholar and Women and Philanthropy Research Scholar, has been successful in ethylating phenols. Renata (Fan-Chun) Meng, a graduate student, has successfully O-ethylated amides to give imidates. Igor Izotov, a new graduate student, is studying the sulfonimidate alkylation reactions of phosphoric and phosphonic acids. First-year graduate student, Michael Fimbres, is working on the alkylation reactions of thiols.

This past summer, we (Suzanne, two sons, daughter, six grandkids and I) flew to the Maricich family reunion (celebrated for the 100+ times) in Anacortes, Wash. (in Puget Sound), and to my 50th high school reunion. We even got in some salmon fishing.

Eric Martinez

I have witnessed the graduation of several key members of my research group: Sherry Kim, Keith Glover, Amber Valencia, Christopher Wostenberg, and Yizhe (Judy) Wang. All of them have been stellar students, graduating with GPAs above 3.8. I am

extremely proud of all of them, all that they have accomplished at CSULB, and I am confident that they all will succeed in their professional aspirations. Sherry will attend pharmacy school at UC, San Diego. Keith, a NIH-RISE scholar, will start a master's in chemistry under my direction. Amber and Chris will start graduate school in chemistry at the University of Southern California and Penn State University, respectively, while Judy will seek employment in the chemical industry. Chris, Amber and Keith all wrote undergraduate theses of their research. Judy

and should graduate with high marks. Kimberly and Eddie are funded by RISE. Kim also received an ACS Minority Scholarship. This past year, Greer was funded by HHMI and earned a Women and Philanthropy Scholarship and a Kenneth L. Marsi Scholarship.

I am in the process of writing two manuscripts from this excellent group of scholars. One will be in the area of superacid chemistry and the other in molecular recognition. I commend and thank my students for their efforts and thank their parents for understanding their children's dedication

MARINEZ



Photo by Victoria Sanchez

From left: Andrew Newman, Sherry Kim, Amber Valencia, Prof. Eric Martinez, Reina Chu, Kimberly Brown and Hector Medoza, Jr. Back row, from left: Christopher Wostenberg, Edward Duran and David Nacionales.

defended her master's thesis entitled "Carbamate Triserine Lactone Receptors for Anion Recognition." Amber and Chris have both graduated with honors in the department and have been HHMI scholars. In addition, Amber has been a RISE and ACS Minority Scholar. During her time at CSULB, Amber earned a Kenneth L. Marsi Scholarship, Organic Chemistry Award, Merck Award in Organic Chemistry and membership into Phi Beta Kappa. Chris has been awarded the Spyros Pathos IV Award, Hypercube Award, Michael Monahan Fellowship, Khalil Salem Award and membership into Phi Beta Kappa.

My current research group consists of Kimberly Brown, Reina Chu, Eddie Duran, Ryan Kemp, Greer McMichael, Andrew Newman and my graduate student David Nacionales. Each one of them is exceptional

towards my long and arduous research efforts. As my students know, each one of them is dear to my heart, and I cherish every moment I have spent with them.

This past spring, the college received NIH-Minority Access to Research Careers (MARC) U*STAR Program for honors students interested in graduate school in the biomedical sciences. This grant provides participating students with a stipend, tuition reimbursement, and a summer research opportunity between their junior and senior years at a major university or government-sponsored laboratory. Working with Dr. Henry Fung (program director) and Dr. Roger Bauer (P.C.), I am the new program coordinator for the grant and look forward to working with all the future scholars.

Steve Mezyk

It was another productive and fun year in the Mezyk RadKEM laboratory at CSULB. Research success was plentiful; my master's student, 10 undergraduate research students and I were able to get 11 refereed papers accepted or published, as well as provide 18 conference contributions. Our year was highlighted by presentations at conferences such as the ACS meeting in Chicago in March 2007, the First Egypt-US Workshop on Water in Cairo, May, 2007, and the International Congress for Radiation Research, San Francisco, June 2007.

Last year my master's student Behnaz Razavi graduated and started her Ph.D. in environmental engineering at the University of California, Irvine. Kristin Clark, my first master's student, won the Outstanding Thesis of the Year award in our college for her CSULB research on the radical-based remediation of pesticide-contaminated waters. She is very happy continuing her Ph.D. at the University of California, Santa Barbara.

This year was also extremely successful for my undergraduate researchers. Casandra Cox is finishing up her Beckman Scholars Program scholarship research on the free-radical chemistry involved in nitrosamine carcinogenicity. Katy Swancutt also received this prestigious scholarship this past May, for her research on reduction/oxidation of anti-cancer platinum drugs under physiological conditions over the next 18 months. Devin Doud and Thomas Neubauer received scholarships from CSULB Women and Philanthropy, while Edsel Abud and Trent Foust were awarded CSULB Provost Summer Research Fund scholarships. These scholarships supported their research efforts over summer/fall 2007, and provided travel funds for them to conduct free-radical kinetics experiments at the University of Notre Dame Radiation Laboratory.

Personally, my one other highlight was receiving the 2007 CSULB University Distinguished Teaching Award. With my sabbatical for fall 2007, as well as my ongoing teaching release time, I am concentrating on writing grants and papers, and so anticipate another outstanding year to come!

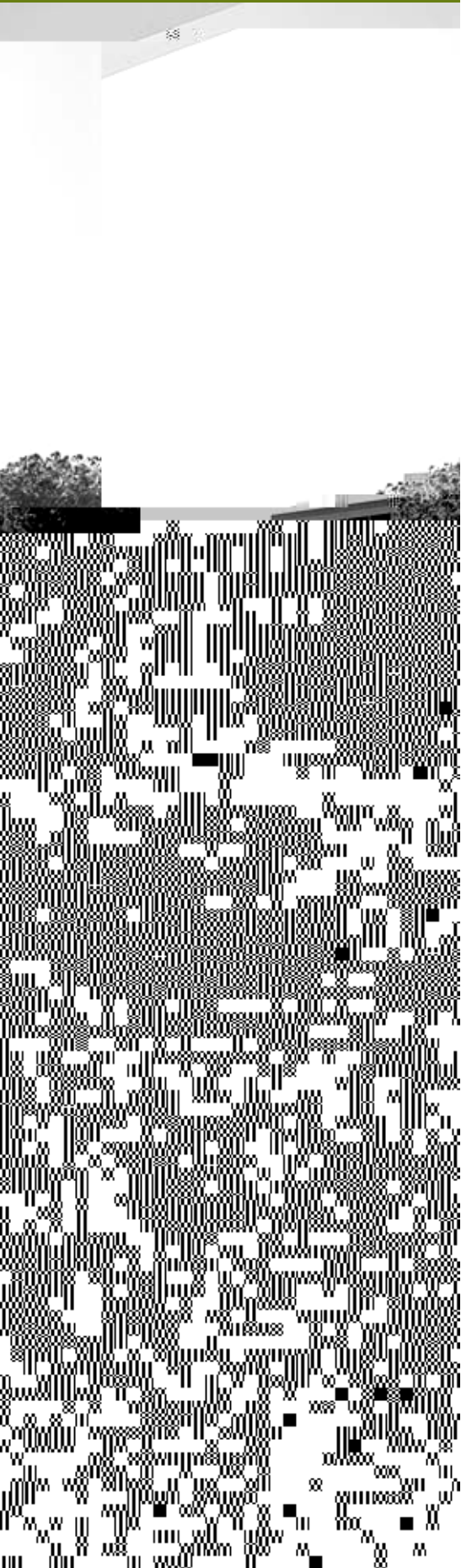
Doug McAbee

We were very pleased to have a new M.S. student, which focused on characterizing the receptor-binding properties of various lactoferrin-transferrin recombinant hybrid proteins. Sid's project, begun originally by Grace Jung, is part of a collaboration the lab has with Dr. Tony Schryver's group (Univ. Alberta), focused on identifying structure-function relationships of the iron-binding proteins lactoferrin and transferrin. Sid expressed two lactoferrin-transferrin hybrid cDNAs as bacmids in a baculovirus expression system in which different sub-domains of lactoferrin were replaced with the corresponding sub-domains of transferrin. After purifying the recombinant proteins, Sid analyzed their ability to bind to immobilized asialoglycoprotein receptors (the Ca²⁺-dependent lactoferrin receptor on hepatocytes) using surface plasmon resonance analysis (employing a Biacore instrument at UCLA medical school). Sid's results demonstrated that swapping the C1 or C2 sub-domains of lactoferrin with transferrin elements did not abolish protein binding to immobilized receptors, though it did significantly alter the binding affinities. Sid's results now provide a springboard for generation and analysis of other lactoferrin-transferrin hybrids. Sid recently took a position with Kirin-Pharma USA (San Diego). We wish him all the best.

Ms. Aynur Bakirci has continued to work on her M.S. project of understanding the iron-dependent changes in the liver proteome following in vivo iron-overloading. Much of her work this past year has involved the hard task of developing purification and analytical protocols for electrophoretic separation of hepatocyte membrane and cytosolic proteins for subsequent high-throughput analysis by MALDI-TOF/TOF mass spectrometry. We are indebted to Dr. Ashraf Elamin, a research fellow who oversees the proteomic facility here at CSU Long Beach. Aynur's work is now poised to begin comparing protein profiles of hepatocyte proteins isolated from the livers of control and iron-loaded rats, though those experiments were unexpectedly delayed due to staffing and logistical problems in the Animal Care Facility this past summer. We look forward to resuming this work by summer.

Casey Curran, an undergraduate research student in the lab, was also busy with his





Michael Meyers

This year has been an exciting and productive year for my research group. We published one paper in *J. Neurosci.* and have a second paper in submission at the time of this writing. I have had tremendous successes in grant writing this year, with three external grants funded while finishing my Research Corporation Award in June. These grants have allowed me to continue productive research collaborations and foster new ones for my lab group to participate in. In addition, I received funding to join the library in improving the University 100 course for our entering freshmen.

I am very happy to report that our NSF (National Science Foundation) MRI (Major Research Instrumentation) grant, entitled "MRI: Acquisition of a Confocal Laser Scanning Microscope for Research and Training in the Natural Sciences at California State University, Long Beach," was funded on July 25 for our requested amount of \$343,723. The project began on Sept. 1 and continued through Aug. 31, 2010. These funds will also be used to purchase a confocal laser scanning microscope (Olympus Fluoview 1000) to support the research programs of 12 CSULB faculty. Bruno Pernet is the P.I., and I am a co-P.I. along with Editte Gharakhanian and Diane Lee. In addition to all the standard capabilities of a confocal microscope (e.g., collection of Z-series, 4D rendering, etc.), the system will be capable

of excitation in a variety of wavelengths to facilitate multiple labeling, optical sectioning through thick specimens, high numerical aperture objectives, rapid scanning for high temporal resolution in time-dependent studies of living material (e.g., shifts in cell pH or calcium concentrations, or molecular interactions), near-simultaneous confocal and brightfield (DIC) imaging, and lambda scanning and spectral manipulation to optimize fluorophore differentiation in multiple-labeling experiments. Acquisition of such a system is particularly timely now, as we can support the developing research programs of recently hired faculty. In addition, we can train our diverse research students in confocal microscopy to fully prepare them for the best graduate programs or entry into other

Biology, Diane Lee is from the Department of Psychology, and I am the only member from Chemistry and Biochemistry. As the grant progresses, I hope to involve more Chemistry and Biochemistry faculty and students in the use of the instrument.

Confocal microscopy is important in two of my lab's projects. The first involves the mechanism by which glioma cancer cells are killed by macrophages expressing membrane macrophage colony stimulating factor (mM-CSF). This project is a continuation of my collaboration with Dr. Martin Jadus at the V.A. center in Long Beach. The cancer cells expressing mM-CSF undergo paraptosis, a form of programmed cell death. We have shown that large conductance calcium sensitive potassium channels (Maxi-K or BK channels) are responsible for paraptosis in these cells. We are studying how these channels control paraptosis as an essential first step

Reports from Faculty

I have been very busy with my research and teaching. I have been working on a number of projects and have been able to complete several of them. I have also been able to publish some of my research in peer-reviewed journals. I have been very fortunate to have been able to work with some of the best researchers in the field. I have also been able to teach some of the most interesting courses in the department. I have been very happy to be able to share my knowledge and experience with my students. I have been very grateful for the support of my colleagues and the administration. I have been very proud to be a part of the faculty at The Beach. I have been very happy to be able to contribute to the field and to the university. I have been very grateful for the opportunity to be a faculty member at The Beach. I have been very happy to be able to share my knowledge and experience with my students. I have been very grateful for the support of my colleagues and the administration. I have been very proud to be a part of the faculty at The Beach. I have been very happy to be able to contribute to the field and to the university. I have been very grateful for the opportunity to be a faculty member at The Beach.

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review components being added to the course. I use some of the same peer review assignments in the teaching of my biochemistry classes.

I look forward to a busy year of more biochemistry teaching, grant writing, manuscript preparation, and continuing to work with students as the new undergraduate advisor for the department. We will continue to raise the bar on teaching and research here at The Beach!

Ken Nakayama

Our group has continued with the work involving inhibition studies of the cholinesterases, in collaboration with Professor Roger Acey's research group. Our first paper on our collaboration was published in *Journal of Neurochemistry*.

The paper was published in the *Journal of Neurochemistry*, Volume 78, Number 1, 1997, pages 1-10. The paper was titled "Inhibition of cholinesterases by a novel inhibitor, [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100]."

becoming either a philosopher or an ento-

2006-07 Research Publications

for Department Faculty

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Reports from Faculty

Paul Weers

Thanks to the support of NIH-AREA and SCORE grants our group was able to continue our research efforts to gain insight into structural and functional aspects of apolipoprotein III, a model exchangeable apolipoprotein. Apolipoproteins play a role in lipid transport processes, are involved in several lipid related diseases, and may also play an important role in innate immunity. During the last year, the following people were part of our research group: Lesley Vasquez, Derek Eglit, Le Nuyen, Arti Patel and Sean Lee, (undergraduate students); Leon Wan, Merve Oztug, Xiping Wu and Daisy Martinon (graduate students); and Gizman Abdullahi (research technician).

research assistant, and left our group in September 2006; he is currently enrolled in the UC Davis pharmacology program. Leon Wan participated in a collaborative effort from the Children's Hospital Oakland Research Institute (Calif.), UC Berkeley, Wake Forrest University (N.C.) and CSULB to identify the lipid binding domain of a recently discovered human apolipoprotein, apoA-V. The results were published in the May 2007 issue of the *J Biol Chem*.

Lesley Vasquez graduated and started at the baccalaureate program of CSU San Francisco. During her last semester, she participated at the CSULB annual research com-

Ken Nakayama

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Young Shon

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- Grumelli, D., C. Vericat, G. Benitez, M.E. Vela, R.C. Salvarezza, L.J. Giovanetti, J.M. Ramallo-López, F.G. Requejo, A.F. Craievich, Y.S. Shon. 2007. Thiolate-Capped Gold Nanoparticles on Graphite: Spontaneous Adsorption and Electrochemically Induced Release. *J Am Chem Soc* 111, 7179-7184.
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- Ramallo-López, J.M., L.J. Giovanetti, F.G. Requejo, S.R. Isaacs, Y.S. Shon, M. Salmeron. 2006. Molecular Conformation Changes in Alkylthiol Ligands as a Function of Size in Gold Nanoparticles. *J Am Chem Soc* 128, 073410.

Paul Weers

- Leon, L.J., H. Idangodage, C.P.L. Wan, P.M.M. Weers. 2006. Apolipoprotein III: lipopolysaccharide Binding Requires Helix Bundle Opening. *J Biol Chem* 281, 1328-1322.
- Beckstead, J.A., K. Wong, V. Gupta, C.P.L. Wan, V.R. Cook, R.B. Weinberg, P.M.M. Weers, R.O. Ryan. 2007. The C Terminus of Apolipoprotein A-V Modulates Lipid-binding Activity. *J Biol Chem* 282, 15484-15489.

WEERS

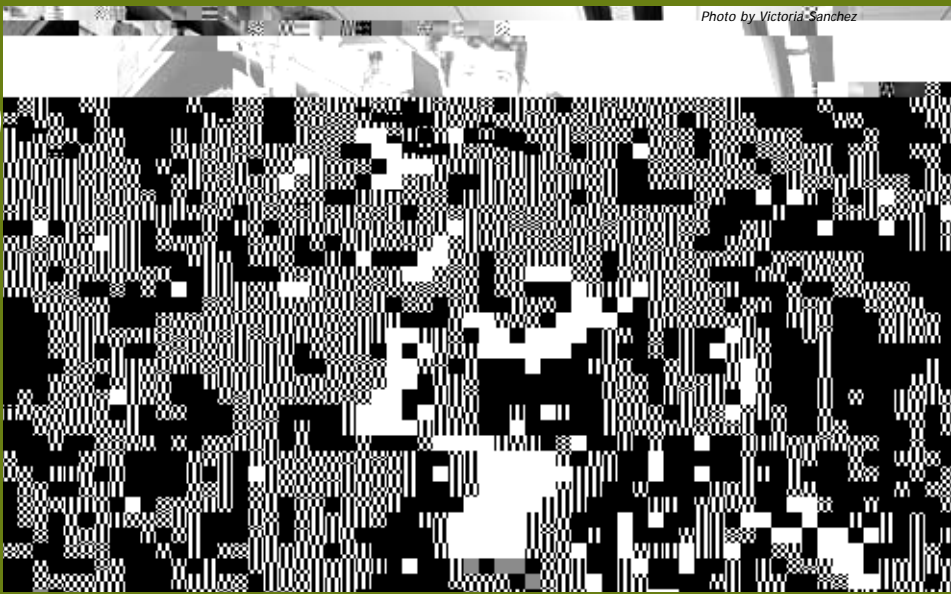


Photo by Victoria Sanchez

From left: Arti Patel, Prof. Paul Weers, Gizman Abdullahi (research assistant), Derek Eglit and Daisy Martinon.

A combined effort from Leonardo Leon, Leon Wan and Hasitha Idangodage led to the discovery that the apoLp-III helix bundle opens upon lipopolysaccharide (LPS) binding. This implies that apoLp-III is able to associate strongly with LPS, thereby neutralizing this toxic bacterial component (circulating LPS causes septic shock, which has a high mortality rate). The results were published in the October 2006 issue of *J Biol Chem*. Leonardo Leon was a former student and

petition, was awarded the first prize and was the runner up at the state-wide competition at CSU Dominguez Hills. She investigated structural and functional properties of apoLp-III after chemical modification.

The following students received awards: Merve Oztug, Louis Perglut Scholarship; Xiping Wu, Michael Monohan Memorial Summer Research Fellowship; Derek Eglit, departmental service award; Arti Patel, Provost's Undergraduate Student Summer Stipend Program for Research, Scholarly & Creative Activity.

Endowed Awards

Robert B. Henderson Award

Dr. Henderson was a member of the Department of Chemistry and Biochemistry from 1955-82 and a distinguished scientist and teacher of organic and general chemistry. He was one of the founding faculty of the department, served as chairman of Physical Sciences, an associate dean of the college, and was a thesis advisor for several M.S. students. This award is given to a student best exemplifying Henderson's scholarship and commitment to the profession of chemistry. This year, we were pleased to present this award of \$1,000 to each of three outstanding students: **Jennifer Casey, Amber Valencia** and **Christopher Wostenberg**.

Kenneth L. Marsi Scholarship

The Kenneth L. Marsi Scholarship was established by faculty, staff, family, friends and former students of Dr. Marsi on the occasion of his retirement in 1996. Marsi was a distinguished scientist, teacher of organic chemistry, and served superbly as department chair for 21 years. Marsi passed away in 2005. This \$1,500 scholarship is used to defray registration fees of outstanding junior and senior chemistry or biochemistry majors. This year's scholar is **Casey Curran**, who is a B.S. biochemistry major working with Dr. McAbee.

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 of Dr. Robert Henderson. He was a distinguished scientist and member of the

Subject Area Awards

Freshmen Chemistry Award:

Jason Alvarez

American Chemical Society,
Polymer Chemistry Award:

Andrew Newman

American Chemical Society,
Analytical Chemistry Award:

Christopher Wostenberg

Organic Chemistry Award:

Greer McMichael

Merck Award in Organic Chemistry:

Amber Valencia

Biochemistry Award:

Yoolim Hong



Andrew Newman



Greer McMichael

Departmental Awards

Toni Horalek Award for

Departmental Service:

Derek Eglit



Derek Eglit



Miguel Camacho Fernandez



Dan-Tam Nguyen

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Stuart Ber2 TD.86oJ7y0n7(h.9(r27(i8(B)-11.9(r2 T19(y))TJ/F1 1.34864544 -.9412 TD.0149 Tc0 Tsberrhiaine@csulb)36.8(.edu)]TJ/F5 1 2 Tc1.07

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