Breast Cancer Research Program Idea Award

Nouri Neamati has recently been awarded a two-year $607,500 Idea Award from DOD Congressionally Directed Breast Cancer Research Program (BCRP) for his grant entitled “Design of GRP78 inhibitors as novel therapeutics for breast cancer.” Co-Investigator to the grant is the GRP78 cloner, Amy Lee, (cont’d p.5)

SCHOOLS OF PHARMACY AND DENTISTRY JOINT MINI RETREAT
“Membranes, Fat, Bone, Development and Signals”

To initiate a research interaction between the two schools, Bangyan Stiles co-organized with Malcolm Snead, Professor from the Herman Ostrow School of Dentistry, a mini retreat last March 7, 2011 at the Center for Craniofacial Facial Biology, Clinical Sciences Center building.

The focus of this meeting was on lipid metabolism and membrane structures. Several participating faculty gave ten-minute presentations each highlighting their current research work. The retreat was aimed at stimulating collaborations between the two schools.

Several potential collaborations are underway after the sub-retreats. The organizers also hope to expand such a platform to forge research alliances in other schools in USC.

Participants from PPSI were Enrique Cadenas (mitochondria), Sarah Hamm-Alvarez (membrane flow), Nouri Neamati (mitochondria), Curtis Okamoto (membrane flow), Stan Louie (endoplasmic reticulum and some lysosomes), Andrew MacKay (bioresponsive drug carriers), Wei-Chiang Shen (liposomes) and Bangyan Stiles (lipogenesis and tumors).

From the Ostrow School of Dentistry were Yang Chai (TGF signalling), Anh Le (wound healing and stem cells), Amy Merrill (skeletal development), Michael Paine (solute receptor), Songtao Shi (immunology and stem cells), and Yan Zhou (Wnt signaling).
First, on the heels of Commencement 2011, the department would like to congratulate our Ph.D. and M.S. graduates. We celebrate their contributions to our department in research and teaching, and wish them luck in their future endeavors. We hope that you will stay connected to your friends and colleagues in the department, and we look forward to hearing about your future successes. We are also pleased to announce that once again our Ph.D. students have represented our school and department well in the annual national pre-doctoral graduate fellowship competition sponsored by the American Foundation for Pharmaceutical Education, by having two awardees, Martha Pastuszka and Megan Yardley.

In our efforts to build stronger ties between academia and industry, we had the unique and exciting opportunity to host here on campus the April 28th meeting of SoCalBio, where industry and academia are provided a forum in which to meet and exchange ideas. The theme of this particular meeting was drug discovery, and it featured presentations by several faculty from our department, including Nouri Neamati, Clay Wang, Julio Camarero, and Bogdan Olenyuk.

As chronicled throughout the year in our newsletter, we celebrate another successful year, and wish you a very relaxing and/or productive summer. We look forward to reporting back to you as the summer wanes and we begin another academic year. 

Acknowledgement

A heartfelt “thank you” to

KATHI HORGAN, CLAUDIA LOPEZ, ISAAC MORA,
ROBERT ROBERTS, TOM SEAN, CHRIS JONES,
KUKLA VER

for all their help in this issue.
**FACULTY UPDATES**

**James D. Adams**

- Interviewed by Fox News’ Sacramento affiliate KTXL-TV about the progression of opiate addictions, such as the one portrayed on the TV series “Nurse Jackie,” April 11, 2011.

- Quoted in the LA Times about opioid pain killer addiction in relation to the television show “Nurse Jackie,” April 5, 2011.

- Ran his 15th marathon for Child SHARE, his 20th at the LA Marathon on a rainy, March 20, 2011.

**Sarah Hamm-Alvarez**

- **Breakthrough Translational Research Funding.**

  Sarah Hamm-Alvarez, principal investigator in the development of a groundbreaking diagnostic tool for the autoimmune disease, Sjögren’s syndrome, has received funding from the USC Stevens Institute to enter the innovation to a clinical study before taking it to market.

  Co-investigators are John Irvine from the Keck School of Medicine and Doheny Eye Institute and William Stohl, chief of the Division of Rheumatology, Keck School of Medicine. *(For more story, click here).*

- Gordon Research Conference, Salivary, Glands & Exocrine Biology, Galveston TX, February 6-8, 2011.

- CRS Drug Delivery Symposium, Salt Lake City UT, February 14-16, 2011.

- HERS Administrative Leadership Session, Boston MA, March 9-12, 2011.

**Ronald L. Alkana**

- Part of a research team with a patent pending for a novel treatment strategy for alcohol abuse and/or alcoholism, using Ivermectin to antagonize ethanol inhibition in P2X4 receptors.

- Participated in the USC School of Pharmacy Alumni Student Professional Mixer, April 11.

- Attended and served as poster judge at the annual meeting of the American Pharmacists in Seattle WA, March 25-29.

- Participated in a panel discussing “On Track to Tenure Track: What to do now to get an academic job later” as part of the HSC Governing Council Professional Development Week, March 7-10.

- Participated in the APSA Pharmacy Career Round-table on March 9.

**Wei-Chiang Shen**

- Invited Speaker, “Production, Pharmacokinetics and Oral Delivery of Bifunctional Transferrin Fusion Proteins,” Fudan University School of Pharmacy, Shanghai, China, March 28, 2011.


**Jean C. Shih**

- Panelist, NIH Director’s Pioneer Award, Bethesda MA, May 1-4, 2011.

- An invited distinguished visiting professor at Duke-National University of Singapore, April 3-9, 2011.

- Presented “Transcriptional regulation of MAO A and B” as distinguished lecturer at Neuroscience Research Center, Duke-National University of Singapore, Graduate Medical School, April 4, 2011.

- Presented “Multiple functions of MAOs” as distinguished lecturer, Department of Physiology, National University of Singapore, April 5, 2011.

(Next page please)
Robert D. Brinton

- Invited Seminar, Aging of the Female Brain: Phenotypes of Vulnerability and Targets of Opportunity to Prevent Neurodegenerative Disease. McKnight Brain Institute, University of Arizona, Tucson AZ, April 18, 2011.

Marco Bortolato

- Received US$16,300 within the frame of an international collaboration with the University of Cagliari, Italy, to evaluate the therapeutic potential of sigma-1 receptor ligands and neurosteroids in animal models of Tourette syndrome.
- Awarded, with Daryl Davies, a grant for $10,000 from the USC Undergraduate Research Associates Program to fund USC undergraduates during the upcoming summer and additional students during the 2011-12 academic year for the project entitled, “P2X4 Receptors Play an Important Role in Regulating the Intake and Behavioral Properties of Alcohol”.
- Gave a talk entitled, “Tourette syndrome: novel therapeutic perspectives” at the 51st Italian Society for Neurologists, Cagliari, Italy, on May 20.
- Gave a talk entitled, “Effects of social isolation and sleep deprivation on neurosteroid regulation: relevance to schizophrenia modeling” at the University of Sofia, Bulgaria, on May 16.
- Presented “Neurosteroid-related therapies for neuropsychiatric disorders: from bench to bedside” at State University of New York Albany, Albany, New York, on March 2.
- Gave a talk entitled, ”Therapeutic properties of steroid 5-alpha reductase inhibitors in neuropsychiatric disorders,” at the 6th International Meeting on Steroids and Nervous System, Turin, Italy, on February 22, 2011.

- Invited Speaker, The North American Menopause Society: Do soy and/or soy isoflavones have beneficial effect on cognitive function of peri and postmenopausal women? Chicago IL, October 10, 2010.

(more next page)
Nouri Neamati

“Drug Design and Molecular Pharmacology”

Nouri Neamati organized the USC-hosted symposium last February 9 at the School of Pharmacy.

Honored speakers and experts of the field included (L-R above) Ruiwen Zhang (Texas Tech University), Doris Benbrook (University of Oklahoma), C. Patrick Reynolds (Texas Tech University), Nouri Neamati, Julian Simon (Fred Hutchinson Cancer Research Center, Dale Mierke (Darmouth College, Seattle WA), and Shaomeng Wang (University of Michigan). (For more story click here).

DOD Breast Cancer Research Program Idea Award

(cont’d from p.1)

Overexpression of GRP78, found in several cancers, promotes the growth of tumor cells resulting in enhanced cancer cell proliferation and renders cancer cells resistant to chemotherapy. Because inherent or acquired drug resistance to systemic therapy is a major cause for treatment failure in cancer, any approach that would decrease drug resistance is highly significant and would likely have a major impact on the eradication of cancer. The project, spearheaded by graduate student Kayya Ramkumar and postdoctoral fellows Drs. Bikash Debnath and Hiroyuki Otake, plans to elucidate the mechanism of GRP78-induced drug resistance and to design novel therapeutic agents to overcome it. The team will use two approaches to counteract GRP78’s protective effects on breast cancer – (1) decrease GRP78 expression, and (2) inhibit its enzymatic activity. It is expected that by blocking the survival effects of GRP78, cancer cells will become more susceptible to chemotherapy.

The laboratory has identified two novel compounds that reduce GRP78 expression and inhibit its enzymatic activity. The funding will be used to investigate the molecular mechanisms and anticancer effects of these compounds. Through these studies, the Neamati lab will validate the therapeutic utility of these GRP78 inhibitors as a novel approach to treat GRP78-overexpressing breast cancer. Successful completion of these studies will expedite the development of these drugs for use in cancer patients. For more of this story, click here.

Julio Camarero

• Oral presentations/lectures on the use of cyclotides as a new scaffold for drug discovery.
• Seventh Annual PEGS (Protein Engineering Summit) Conference, Phage and Yeast Display of Antibodies and Proteins Session, May 9-13, 2011, Boston MA.
• University of Uppsala, Invited seminar to The Svedberg Lecture Series, March 24, 2011, Uppsala, Sweden.
• Travelled to Uppsala to be the Opponent for the Ph.D. thesis defense of Dr. Teshome L. Aboye (now in his lab as a postdoc). The thesis was entitled, “Engineering of the Ultra-stable Cystine Knot Framework of Microproteins Design, Chemical Synthesis and Structural Studies,” and “Teshome did a great job,” Camarero said.
• HONORED: As an honor to the Opponent, the flag of the opponent’s country of residency (i.e. US flag) was raised for the full day at the main gate of the University.

Bogdan Olenyuk

• Presented a talk at the Los Angeles County SoCalBio Networking Forum on April 28, 2011.
• Presented a lecture entitled, “Designed Small Molecules and Protein Secondary Structure Mimetics as Modulators of Transcription Factor-Coactivator Interactions,” at the Transcription Factor Meeting, USC Norris Cancer Center on April 14, 2011.
• Visited and presented an invited talk at the Proteogenomic Institute for Systems Medicine (PRISM) in San Diego, CA on March 16, 2011.
• Attended the Nanomedicine and Drug Delivery Research Conference at the Cedars Sinai Medical Center on March 4-6, 2011.
• Presented a seminar titled, “Regulation of Transcription and Receptor Function with Rationally Designed Protein Ligands,” at the Chemistry Department, USC College on February 22, 2011.
**Walter Wolf**

- **Exploring the frontiers of Ethics in Cancer Research**

  Prof. Walter Wolf continues, in collaboration with Prof. Lowell Schnipper (Medical Oncology, Brigham-Young/Harvard University), to organize and chair annual sessions at the AACR (American Association for Cancer Research) devoted to exploring important ethical issues in clinical cancer research. Because most of cancer research deals with drugs – their effectiveness and their limitations – such annual reviews are of importance to basic, translational and clinical researchers in cancer – and by extension, to all diseases.

  Dr. Wolf said that “the basic principle: DO NO HARM, while part of the professional oath of both pharmacists and physicians, is equally applicable to all of us. All our actions can have consequences. We must be aware of them.”

  The topic discussed in the 102nd AACR Annual Meeting in Orlando, Florida on April 2-6, covered Ethical issues in performing randomized clinical trials.

  The summary for this session reads:

  Prospective randomized clinical trials are a critically important part of drug development since they are regarded as the strongest level of evidence that bears on the efficacy of a novel agent or regimen that is under study. Although often unimpeachable in design and implementation, at times unique ethical problems are brought to the fore. One widely used procedure is to test the potential new drug against a standard and widely accepted modality or an inert agent in the form of a placebo. An example of such an ethical problem is a recent debate that centered around a trial of a b-raf inhibitor in melanoma which was being compared against dacarbazine, an agent that has minimal activity against the (more next page)

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**Clay Wang**

- **USC Center for Drug Discovery and Development**

  Clay Wang will co-lead with Stan Louie, from the Department of Clinical Pharmacy and Pharmaceutical Economics & Policy, a team that will create the Center for Drug Discovery and Development, making the School of Pharmacy as the central hub within USC for expertise in drug discovery, design, delivery and all other aspects of translating any given molecular target into preclinical drug candidates.

  The award is from the USC Research Collaboration Fund. The Center will also involve contributions from faculty members of USC Dornsife College and Keck School of Medicine.

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**Enrique Cadenas**

- Lectured on Brain Aging, Mitochondrial Function, and Signaling Pathways at the International Symposium on Mitochondrial Biology and Medicine and Chinese-Mit’2011, Xi’an, China, April 7-10, 2011.

- Co-organized the young investigator presentations and chaired the business meeting at the 2011 Gordon Research Conference on Oxidative Stress and Disease, Ventura CA, March 13-18, 2011.

- Chair-Elect for the next Gordon Conference to take place in Il Ciocco, Italy in 2013.

baby news ...

Rylie Shen is the 3rd of Wei-Chiang and Daisy Shen’s grandchildren; born on January 4, 2011, weighing 7 lbs, 6 oz and 20 inches long. Proud Daddy and Mommy are Howie and Julianne Shen.

Charlotte Victoria Hale is Mommy Anne Cecile’s 2nd baby daughter; born on February 11, 2011, weighing 8 lbs, 7 oz and 20¼ inches long. Anne Cecile graduated her Ph.D. at the lab of Rajindar S. Sohal. She now lives in Maryland with husband, David Hale.

Pictured cuties on the right are William and Isabella Bayramyan, twins of Melina Z. Bayramyan, adjunct assistant professor of the department and a lecturer in the Therapeutics and Pharmaceutics courses. Melina completed her Ph.D. degree in the lab of Ian Haworth. She’s now a Senior Manager of Medical Information, Inflammation in Scientific Affairs at Amgen Inc. Melina’s expertise lies in educating healthcare professionals and patients about psoriasis and its treatment options.

WOLF (cont’d from p.6) disease. Other examples are concerns about the conduct of placebo controlled trials in undeveloped parts of the world. This is especially relevant when a no-treatment control group is used in a clinical setting for which there is an effective but locally unaffordable treatment (which is available in the developed world). This session explored some of these issues from the viewpoints of some of the key stakeholders involved: patients, industry, regulatory agencies and academic researchers.

The four speakers and their presentations included: Randomized Clinical Trials in Oncology: Investigational and Ethical Perspectives. Richard L. Schilsky, MD, Professor of Medicine, Chief, Hematology/Oncology University of Chicago Medical School, Chicago, IL.

Equipoise: an irrelevant concept in clinical trial design. Steve Joffe, MD, MPH Associate Professor of Pediatrics, Dana-Farber Cancer Institute, Children’s Hospital Harvard Medical School, Boston, MA.

Placebo Controls in Low Resource Countries Where Known Effective Therapy is Unavailable for Economic or Logistical Reasons; Ethical Considerations Robert J. Levine, MD, Senior Fellow, Interdisciplinary Center for Bioethics, Director, Law, Policy and Ethics Core, Center for Interdisciplinary Research on AIDS Professor of Medicine and Lecturer in Pharmacology, Yale University, New Haven, CT.

Gold Standard or Fool’s Gold—Patient Perspectives on Randomized Clinical Trials. Gwen Darien, Executive Director, Samuel Waxman Cancer Research Foundation, New York, NY 10170.
Liqin Zhao, director of the Translational Research Laboratory (TRLab), has recently been awarded a $150K USC Core Instrumentation Fund for acquisition of an ABI OpenArray Real-Time PCR system. This is the first time the School of Pharmacy has received such an award. The system will be installed in the 5th floor TRLab and shared by the entire USC research community. The installation is expected to take place in June.

Research Impact

The OpenArray Real-Time PCR System is a mid-density platform and whole-system solution for throughput gene expression, genotyping, and digital PCR studies.

- **Technology**: The OpenArray platform is a broadly applicable nanoliter fluidics technology platform for low-volume, solution-phase reactions. It utilizes a microscope slide-sized plate with 3,072 through-holes. The plates are arranged in 48 subarrays of 64 through-holes. During PCR reactions, each of the 3,072 through-holes contains 33 nL of fluid in place by means of surface tension.

- **Capacity**: The OpenArray Real-Time PCR System enables streamlined genomic validation and screening with unprecedented gene coverage and sample throughput. A single user can easily obtain over 30,000 gene expression or digital PCR data points, or over 70,000 genotypes, in just one workday, in a fast and flexible format.

- **Applications**: The OpenArray Real-Time PCR System helps accelerate many research applications in areas including but not limited to pharmaceutical target validation, drug discovery, molecular testing and pathogen detection, at a scale previously unattainable. In particular, it facilitates a straightforward method for:
  - Gene expression profiling
  - High-sample throughput genotyping
  - Validating microarray results
  - Performing expression-based biomarker screens

(A) The OpenArray Real-Time PCR System provides PCR-based real-time analysis of hundreds of genes/samples per day. 
(B) Each OpenArray Plate contains 48 subarrays with 64 through-holes each. 
(C) Each through-hole is coated with hydrophilic and hydrophobic coatings. Reagents are retained in through-holes via surface tension.

II. Research & NIH Funding Opportunities

<table>
<thead>
<tr>
<th>Current State at USC</th>
<th>OpenArray Offers</th>
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<tbody>
<tr>
<td><strong>Plate Format</strong></td>
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<tr>
<td>96-well &amp; 384-well</td>
<td>3,072-well mid-density array plates</td>
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<td>microplates</td>
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<td>384-well low-density array plates</td>
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<td><strong>Sample Volume</strong></td>
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<tr>
<td>Microliter</td>
<td>Nanoliter</td>
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<td><strong>Throughput Capacity</strong></td>
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<tr>
<td>No to low-throughput</td>
<td>Medium to high-throughput</td>
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<tr>
<td><strong>Research Applications</strong></td>
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<tr>
<td>Enables small scale analyses of small sets of target genes/samples</td>
<td>Enables large scale profiling/screening of large gene/sample sets, and accelerates the discovery of novel molecular targets, biomarkers, and therapeutic candidates</td>
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<tr>
<td><strong>NIH Theme/Priority /Funding Opportunity</strong></td>
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<tr>
<td>Does not target</td>
<td>Targets NIH top theme/priority (&quot;high-throughput technologies&quot; as one of the five major themes/priorities: &quot;Taking advantage of advances in high-throughput technologies to understand the fundamentals of biology and to uncover the causes of specific diseases&quot;), and increases NIH funding opportunity</td>
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DEPARTMENT SEMINAR SERIES FOR ACADEMIC YEAR 2010-2011


Hong Wu, Professor, Dept of Molecular and Medical Pharmacology, UCLA School of Medicine, “PTEN and Tumorigenesis,” May 20, 2011, Faculty Host: Bangyan Stiles.

Alexander Shekhtman, Associate Professor, Department of Chemistry, State University of New York at Albany, “Study of Protein-Protein Interactions by Using In-Cell NMR Spectroscopy,” May 6, 2011, Faculty Host: Julio Camarero.

Quying Lei, Shanghai Medical College of Fudan University, “Acetylation Targets the M2 Isoform of Pyruvate Kinase for Degradation through Chaperone Mediated Autophagy and Promotes Tumor Growth,” April 15, 2011. Faculty Host: Bangyan Stiles.

Joseph John Barchi, Jr., National Cancer Institute at Frederick MD, “Nanoparticles as Cancer Therapies: Gold at the End of the Rainbow,” March 28, 2011, 3-4pm, Faculty Host: Nouri Neamati.

Jeff Gildersleeve, National Cancer Institute at Frederick MD, “Glycan Arrays and Cancer Vaccines: Partners for Life,” March 28, 2011, 4-5pm, Faculty Host: Nouri Neamati.

Peter Stang, Distinguished Professor, Department of Chemistry, University of Utah, “Abiological Self-Assembly: Predesigned Metallacycles and Metallacages via Coordination,” February 25, 2011. Faculty Host: Bogdan Olenyuk.

Keith Parker, Associate Professor, University of Montana College of Health Professions and Biomedical Sciences, “Peptide and Non-Peptide Interactions at the Human 5HT1a Receptor,” February 18, 2011, Faculty Host: James D. Adams.

John K. Buolamwini, Professor, Department of Pharmaceutical Sciences, College of Pharmacy, University of Tennessee Health Science Center, Memphis, TN, “Design and Discovery of Small Molecule Antitumor or Cancer Chemoprevention Agents,” November 10, 2010, Faculty Host: Nouri Neamati.

One more baby in the news ...

Here is Sophia Aracely Medina, born on May 3, 2011 at 8:53 pm, weighing 7 lbs, 7 oz, and 20 inches long at the Huntington Memorial Hospital in Pasadena. Proud Mommy and Daddy are Vivian Galicia and Milton Medina.

Clemens W.G.M. Lowik, Professor in Molecular Endocrinology and Molecular Imaging Leiden University Medical Center, The Netherlands, “New whole body optical imaging based tools and animal models for cancer and regenerative medicine and their translation into the clinic,” October 26, 2010. Faculty Host: Walter Wolf.


Aykut Uren, Associate Professor, Georgetown University Medical Center Lombardi Comprehensive Cancer Center, Department of Oncology, Dept. of Biochemistry and Molecular & Cellular Biology, Washington DC, “Discovery and Development of Small-Molecules Targeting Ezrin Protein as Antimetastatic Agents,” October 6, 2010 10:00 A.M., Faculty Host: Nouri Neamati.

Where is he now?

ADAM WIDERA

I am grateful for the opportunity to share experiences that I had at the USC School of Pharmacy and to provide an update into my career path since leaving USC.

I did my graduate studies at USC in the Department of Pharmaceutical Sciences from 1998 through 2003, and obtained a Ph.D. for my work in Dr. Wei-Chiang Shen’s lab. My dissertation centered around exploring the opportunities for non-invasive delivery of protein-based therapeutics. My research project involved use of transferrin and transferrin-protein conjugates as a model to study the carrier-mediated absorption of large peptide based therapeutics via endocytic transport across the gastrointestinal and lung epithelium.

After obtaining my Ph.D., during most of 2004, I worked as a post-doctoral fellow in Dr. Kwang-Jin Kim’s lab in the USC School of Medicine where I investigated novel antibody fragment (Fc)- protein conjugates in transcellular transport across primary-cultured alveolar monolayers.

One of the most valuable things that I found present at USC was the significant opportunities that were made available for collaboration between research labs and different departments within the Health Sciences Campus. For example, Drs. Kwang-Jin Kim and Edward Crandall of the USC Department of Medicine contributed significantly in providing scientific consultation and resources during my dissertation work. It was also very beneficial to attend a graduate school with the national recognition and respect that USC elicits. For example, I was awarded the AFPE Pre-Doctoral Fellowship, which I’m sure was due in part to the excellent reputation of USC and the School of Pharmacy.

I also have fond memories of the students and faculty at USC, including various trips to scientific meetings. The highlight for me was a podium presentation that I made in Seoul, Korea in 2002 at the Controlled Released Society meeting.

At the end of 2004, I was offered and accepted a position at Grifols Biologicals, whose Los Angeles location is located very close to the USC Health Sciences Campus. The Grifols group of companies serves healthcare professionals and patients in over 90 countries around the world. We research, develop, manufacture and market plasma derivatives, IV therapy, diagnostic systems and medical materials. I began at Grifols in the Analytical Methods Development group where my previous experience researching and analyzing protein-based therapeutics in graduate school provided invaluable experience.

In late 2005, I was promoted to Manager of Quality Control Chemistry at Grifols Biologicals, with approximately 20-25 direct reporting personnel. I continued in this position until the beginning of 2010 when I was promoted to my current position at Grifols Biologicals, Associate Director of Quality Control.

In my current position I oversee three separate departments, Quality Control Chemistry, Analytical Methods Development and Validation, and Laboratory Information Management Systems (LIMS), with approximately 35-40 personnel in total, including 6 Ph.D. Scientists and Managers. In my current position I spend much of my time overseeing the day-to-day analytical operations in the company and take a lead role in decisions regarding implementing new technologies. I spend significant amounts of time working with the Regulatory Affairs group, interacting with various regulatory agencies across the world with respect to regulatory submissions. In addition, I take a lead role in interacting with regulatory auditors (such as the FDA) during on-site audits.

On a personal level, I’m currently living in Lakewood, CA. My wife Jennifer and I were married in 2008 and have a three-year-old boy named Caleb. I also have three step-children. My older son, Ethan, is 10 years old and is doing well in school and is heavily involved in sports. He currently plays on a competitive-level club soccer team for FC Long Beach.

I am always interested in meeting with current and former members of the PPSI family from USC, and look forward to keeping in contact with alumni.

Best wishes.
STUDENT NEWS

Jennifer-Anne Bayan

- Won the Rachmiel Levine Scientific Achievement Award at the 11th Rachmiel Levine Diabetes and Obesity Symposium held in Pasadena on March 20 to 23, 2011. Nobody has won the award more than once in the history of the symposium, but Jennifer bagged the award for the 3rd time, winning the other two on 2008 and 2009. She was honored by orally presenting her work entitled, “PTEN regulates beta-cell regeneration intrinsically and independently of development.” Jennifer’s mentor is Bangyan Stiles.

Dimple Modi

- Chairperson of the pharmacy education for the International Pharmaceutical Students’ Federation – the leading advocacy organization for pharmacy students from around the world. She has attended two international meetings in the Netherlands where she learned ways to improve pharmacy education, curriculum development and professional conduct. Click here for more.

  Dimple is from the labs of Ronald Alkana and Daryl Davies. She just finished her master’s degree in molecular pharmacology and toxicology, and will be joining the University of Illinois at Chicago for the Ph.D. program in Pharmaceutical Biotechnology beginning from Fall 2011.

Vivian Galicia

- Successfully defended her dissertation entitled, “Pten Deletion Induced Cancer Stem Cells: Adapted Strategies to Accelerate the Disease Progression of Liver Cancer,” last March 18, 2011 (mentor is Bangyan Stiles), and

  - She is a new mom to Baby Sophia Aracely Medina. (featured in p.9).

Melissa Millard

- Recipient of a generous travel award from Seahorse Biosciences. The award supported her attendance at the 102nd Annual Meeting of the American Association for Cancer Research (AACR) held on April 2 to 6, 2011 in Orlando, Florida. She presented a poster at the meeting entitled, “Preclinical evaluation of novel triphenylphosphonium salts with broad-spectrum activity” in the Chemotherapeutic Agents section of the Experimental and Molecular Therapeutics poster session. Her co-authors for the poster are Divya Pathania, Yumna Shabaik, Laleh Taheri, Jinxia Deng and Nouri Neamati. A pdf version of the poster is currently featured on the Seahorse Biosciences webpage.

Divya Pathania

- Awarded the Oakley Fellowship for the academic year 2011-2012. She was chosen based on, among others, the compelling description of her research entitled, “Design and discovery of novel small molecules as modulators of ROS-mediated cell signaling.” She receives $20,000 monetary award that will contribute towards her stipend.

- Attended the 102nd Annual AACR meeting in Orlando, Florida last April 2-6 and presented a poster entitled, “Design and Discovery of Novel Small Molecule Modulators of Reactive Oxygen Species-Mediated Cell Signaling.” Divya’s mentor is Nouri Neamati.
Tino Sanchez

- VDM Verlag Dr Müller published on paperback the master’s thesis of Tino Sanchez entitled, “Discovery of HIV-1 Integrase Inhibitors: Furan and Sulfonamide-based Integrase Inhibitors,” and is now available in Amazon. Below is the cover page. Tino’s mentor is Nouri Neamati.

Graduate and Professional School Senate (GPSS)

- Siti Mohd Janib (Andrew Mackay Lab), Martha Pastuszka (Nouri Neamati Lab) and Megan Yardley (Ronald L. Alkana Lab) attended the 3rd Annual GPSS Poster Symposium on April 6, 2011, a whole day event at the VKC Courtyard of the University Campus.

Pictured are (L-R) Siti, Martha and Megan in front of Martha’s poster entitled, "Development of a Rapid Reversible Protein Switch in Eukaryotes."

Siti entertaining a question about her poster entitled, "Cancer Nanotechnology with Elastin-like Polypeptides."

Megan Yardley’s poster presentation is entitled, “Preclinical Assessment of Ivermectin in Reducing Alcohol Consumption.”

Letisha Wyatt

- Engaged last November 26, 2010 to Jake Staniels whom she met when they were in college in 2004; Letisha was at University of California at Davis and Jake at San Francisco State University. Letisha is in the early stages of planning for the wedding set for Spring 2012.
AFPE Fellowship

As the messages from the American Foundation for Pharmaceutical Education (AFPE) stated, Martha Pastuszka (on the left), from the lab of Andrew Mackay, and Megan Yardley (right) from the labs of Ronald Alkana and Daryl Davies, are now members of “a very distinguished group of men and women who have received AFPE Pre-Doctoral Fellowships in national competition since 1942.”

Martha’s project that won her the fellowship is entitled, “Development of a rapid, reversible protein switch for studying cellular biology in eukaryotes.”

Megan’s project is entitled, “Development of Ivermectin (IVM) as a therapeutic agent for alcohol-related disorders.”

PCT Program Award

Erik Serrao has just been accepted into the Pre-doctoral Clinical & Translational Training (PCT) Program by the Center for Education, Training and Career Development (CTCD) under the Southern California Clinical and Translational Science Institute (SC CTSI). The PCT training award is a very prestigious and competitive award that supports the research career development of promising doctoral students with an emphasis on clinical and/or translational research.

The project for which Erik has secured funding is entitled, “Analysis of Alterations in Human Gene Expression in Response to HIV-1 Infection.” Erik will establish a collaboration between Nouri Neamati’s lab (Erik’s mentor) and that of Andrea Kovacs, from the Keck School of Medicine and Principal Investigator of the USC IMPAACT Clinical Trials Unit.

“What we have found is that HIV-1 acutely alters the expression of certain human genes during its replication cycle,” Erik said. “In this proposal we will go further to probe the specific immune cell type harboring these changes in host gene expression, as well as the effect of various commonly prescribed HAART treatment regimes in reversing these HIV-induced changes.”

This is Erik’s third funding award in three years, for three different projects. Interestingly, he had to interview for this award via conference call while on vacation in an Incan village in Peru. “It made the trip more memorable,” Erik said.

STUDENT SEMINARS FOR THE ACADEMIC YEAR 2010-2011

Suhaas Aluri
Faculty Mentor: ANDREW MACKay
“Liposome stabilization using elastin like peptide amphiphiles”
May 25, 2011, Student Host: Yang Li

Jennifer Ann Bayan
Faculty Mentor: BANGYAN STILES
“PTEN regulates beta-cell regeneration intrinsically and independently of development”
December 15, 2010, Student Host: Helen Ha

Janette Contreras
Faculty Mentor: SARAH HAMM-ALVAREZ
“Analysis of Trafficking Pathways and Application to Drug Delivery”
October 20, 2010, Student Host: Vivian Galicia

Fan Ding
Faculty Mentor: ROBERTA D. BRINTON
“17B-estradiol Prevents OVX-induced Bioenergetic Fuel Shift in the Triple Transgenic Alzheimer’s Disease Mouse Brain”
March 2, 2011, Student Host: Divya Pathania

Likun (Paul) Fei
Faculty Mentor: WEI-CHIANG SHEN
“pH-sensitive MAP-based targeted drug delivery systems for cellular and nuclear delivery”
June 8, 2011, Student Host: Hsien-Chun Lo

Helen Ha
Faculty Mentor: NOURI NEAMATI
“Discovery of CXCR2 inhibitors for cancer treatment”
December 8, 2010, Student Host: Fei Yin

Siti Mohd Janib
Faculty Mentor: ANDREW MACKay
“Thermo-sensitive nanoparticles from elastin-like polypeptides”
November 17, 2010, Student Host: Ni Zeng

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Randall Kenien  
Faculty Mentor: WEI-CHIANG SHEN  
“Cell penetrating properties and therapeutic potential of cytochrome c and cpp-cytochrome c conjugates”  
September 15, Student Host: Kavya Ramkumar

Chen Li  
Faculty Mentor: ENRIQUE CADENAS  
“PI3K/Akt Signaling and the Regulation of the Mitochondrial Energy-Redox Axis”  
March 9, 2010, Student Host: Fan Ding

Yang Li  
Faculty Mentor: BANGYAN STILES  
“PTEN regulates mitochondrial biogenesis and function”  
May 18, 2011, Student Host: Michelle Ren

Yiyu Li  
Faculty Mentor: IAN HAWORTH  
“Computational Modeling of the Fibril Structure of Human Islet Amyloid Polypeptide (hIAPP)”  
April 13, 2010, Student Host: Shili Xu

Hsien-Chun Lo  
Faculty Mentor: CLAY WANG  
“Identification and Characterization of Secondary Metabolite Gene Cluster of Aspergillus nidulans”  
February 2, 2011, Student Host: Melissa Millard

Melissa Millard  
Faculty Mentor: NOURI NEAMATI  
“Novel Phosphonium Salts Targeting Cancer Cell Mitochondria”  
January 26, 2011, Student Host: Flora Han

Robert Mo  
Faculty Mentor: WEI-CHIANG SHEN  
“Design of siRNA Polyplex for Enhanced Cellular Uptake”  
October 6, 2010, Student Host: Maya Popova

Nick Mordwinkin  
Faculty Mentor: STAN LOUIE  
“The role of angiotensin-(1-7) in diabetes-induced oxidative stress”  
January 5, 2011, Student Host: Jennifer Ann Bayan

Martha Pastuszka  
Faculty Mentor: ANDREW MACKAY  
“Development of a rapid, reversible protein switch in eukaryotes”  
April 27, 2011, Student Host: Natasha Sharma

Divya Pathania  
Faculty Mentor: NOURI NEAMATI  
“Design and discovery of quinazolinediones as modulators of ROS-mediated cell signaling”  
February 23, 2011, Student Host: Letisha Wyatt

Maya Popova  
Faculty Mentor: RONALD L. ALKANA/DARYL DAVIES  
“Sites for Ethanol Action in P2X4 receptors”  
September 29, 2010, Student Host: Randall Kenien

Kavya Ramkumar  
Faculty Mentor: NOURI NEAMATI  
“Design of GRP78 inhibitors as novel therapeutics for breast cancer”  
September 8, 2011, Host: GAC

Jared Russell  
Faculty Mentor: STAN LOUIE  
“The Impact of Drug-Drug Interactions within HAART: Efficacy vs. Toxicity”  
March 30, 2011, Student Host: Tino Sanchez

Tino Sanchez  
Faculty Mentor: NOURI NEAMATI  
“Design and Discovery of Novel Small Molecules inhibiting HIV-1 Integrase and Cellular Cofactor LEDGF/p75 Protein-Protein Interaction”  
March 16, 2011, Student Host: Chen Li

Yumna Shabaik  
Faculty Mentor: NOURI NEAMATI  
“In vitro mechanistic studies of AS421 for the treatment of pancreatic cancer”  
November 3, 2010, Student Host: Shi (Ben) Xu

Natasha Sharma  
Faculty Mentor: STAN LOUIE  
“Evaluating the anticancer effects of QC 001”  
April 20, 2011, Student Host: Yiyu Li

Yan Wang  
Faculty Mentor: WEI-CHIANG SHEN  
“Conversion of proinsulin to insulin as a transferrin fusion protein via transferrin receptor-mediated endocytosis”  
January 12, 2011, Student Host: Nick Mordwinkin

Letisha Wyatt  
Faculty Mentor: RONALD L. ALKANA/DARYL DAVIES  
“Ethanol Modulation of Neuronal P2X4 Receptors”  
February 16, 2010, Student Host: Likun (Paul) Fei

Shi (Ben) Xu  
Faculty Mentor: SARAH HAMM-ALVAREZ  
“Rab11a in Lacrimal Gland Acinar Cells (LGACs)”  
October 27, 2010, Student Host: Janette Contreras

Shili Xu  
Faculty Mentor: NOURI NEAMATI  
“Targeting gp130 for Ovarian Cancer Therapy”  
April 6, 2011, Student Host: Jason Yamaki

Jason Yamaki  
Faculty Mentor: ANNIE WONG-BERINGER  
“Methicillin Resistant Staphylococcus aureus (MRSA) virulence mechanisms: clinical significance and potential novel therapeutics”  
March 30, 2011, Student Host: Jared Russell

Fei Yin  
Faculty Mentor: ENRIQUE CADENAS  
“The Mitochondrial Energy-Redox Axis in Aging and Caloric Restriction: Potential Role of Nicotinamide Nucleotide Transhydrogenase”  
December 1, 2010, Student Host: Siti Mohd Janib

Ni Zeng  
Faculty Mentor: BANGYAN STILES  
“PTEN Controls Beta-Cell Aging through p16-regulated Cell Senescence”  
November 10, 2010, Student Host: Yumna Shabaik
**PUBLICATIONS**

**Ronald L. Alkana**

**Marco Bortolato**


**Roberta D. Brinton**


**Enrique Cadenas**


**Julio Camarero**

**Andrew MacKay**

**Bogdan Olenyuk**

**Wei-Chiang Shen**

**Jean C. Shih**


( more next page)
Nouri Neamati


Rajindar S. Sohal


Clay C. Wang


NEW FACES

Teshome L. Aboye was hired by Julio Camarero, his “Opponent” during his Ph.D. thesis defense at the University of Uppsala, Sweden on March 25, 2011. His educational journey for higher learning started in his native country, Ethiopia where he graduated with bachelor of pharmacy in 2000 from the School of Pharmacy, Addis Ababa University. Then in 2004, he received his MSc in medicinal chemistry from National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India. His research at the lab of Julio Camarero focuses on the design, synthesis and pharmacological studies of microproteins.

Richa Aggarwal joined USC in Fall 2010 to pursue her Ph.D degree in Genetic, Molecular and Cell Biology as a PIBBS student. She has chosen Dr. Julio Camarero’s lab after her rotations. She has a master’s degree in biological sciences at the California State University, Fullerton and a master’s of science degree in microbiology from the Bangalore University in Karnataka, India. She graduated with honors for her Bachelor of Science degree at the University of Delhi.

As a student at CSU, Fullerton, Richa received an ASI (Associated students, CSUF Inc.) grant for her work on “Use of liposomes as delivery vehicles to deliver antisense oligonucleotides into bacterial cells” and also received a 2nd prize at CSUF research competition May 2010 for the same project. At CSUF, She also worked on another project, “Development of antibiotic free selection system for the recombinant cells”.

At the Camarero Lab, Richa started working on the use of cyclotide based molecular scaffold for rapid in cell screening and selection for specific protein-protein antagonists.

Commencement Speaker, Lucinda Maine, Executive Vice President and CEO, AACP (American Association of Colleges of Pharmacy).

Jennifer-Ann Bayan gave the Ph.D. graduates' testament of all their experiences and challenges as Ph.D. candidates of the School. Below she is hooded by mentor, Bangyan Stiles.

Fei Yin with Dean Pete Vanderveen and mentor, Enrique Cadenas.

Daryl Davies and Ronald Alkana hooding Maya Popova.

Sarah Hamm-Alvarez, Janette Contreras

Wei-Chiang Shen ... Robert Mo

.... Randall Kenien.

.... Yan Wang

Sarah Hamm-Alvarez, Asma El-Magboub

Clay Wang, James Sanchez

Wei-Chiang Shen hooding Yu-Shen Chen

Clay Wang, Sofina Jain
Doctor of Philosophy Degree

Yan Wang, Janette Contreras, Randall Kenien

Randall Kenien, Robert Mo, Maya Popova

Jared Russell with mentor, Stan Louie

Fei Yin with wife, Tian Wang

Maya Popova with joyful lab mates, Miriam Fine and Liana Asatryan

Jared Russell, James Sanchez, Fei Yin

Master of Science Degree

L-R: Dimple Modi, Yu-Sheng Chen, Asma El-Magboub, Sofina Jain, Mihir Shah

Asma with husband, Khaled Al Sherif

Mihir with mentor, Andrew MacKay

Dimple with proud parents, Ashok & Jayshree Modi, and fiancée, Yash Jalundhuala