



# Welcome James Colbert

By Providence Morris

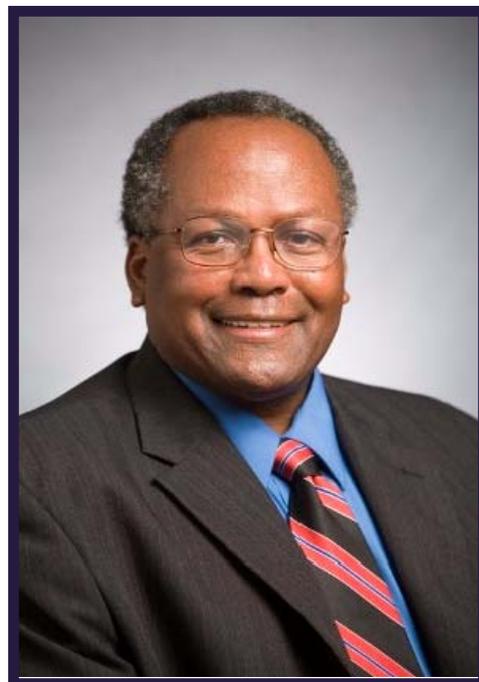
Dr. James Colbert is an Associate Clinical Professor of Pharmacy and an Assistant Dean for Experiential Education in the UCSD Skaggs School of Pharmacy and Pharmaceutical Sciences. He also serves as an Assistant Clinical Professor, Department of Pediatrics in the UCSD School of Medicine.

Dr. Colbert received his undergraduate degree in Biological Sciences from the University of California, Berkeley in 1977 and his Doctor of Pharmacy degree from the University of California, San Francisco in 1981. Most recently, Dr. Colbert was the Clinical Manager and Education Coordinator for the Department of Pharmacy at the UCSD Medical Center. A former U.S. Army officer, Dr. Colbert was decorated for his service during the First Persian Gulf War (Operation Desert Shield and Desert Storm, 1990-1991) and the Bosnia peacekeeping campaign (1996). He has had extensive overseas military experience, including service as Chief of army pharmacy operations in Stuttgart and Hanau, Germany, and service as Assistant Chief of pharmacy operations in Heidelberg, Germany.

His clinical practice is in the area of general pediatrics, with particular interests in pediatric asthma, cystic fibrosis, congenital heart diseases and heart failure, and hemoglobinopathies (sickle cell anemia). He is the recipient of numerous honors for his work with pharmacy and medical residents. For his work with the San Diego Chapter of the Sickle Cell Disease Association of America, The San Diego Combined Health Agencies (CHAD) recognized Dr. Colbert as a "Health Hero" in 2002.

Dr. Colbert is very active in professional pharmacy associations at local, state, and national levels. He is a past-president of the San Diego Society of Health-System Pharmacists (SDSHP). He is also a past recipient of the "Pharmacist of the Year" award from this organization (2000). He is a fellow of the California Society of Health-System Pharmacists (CSHP) and the American Society of Health-System Pharmacists (ASHP). In the 24th edition of the Aetna African American History Calendar (2005), highlighting outstanding African American Pharmacists, Dr. Colbert is featured for his many years of professional and community service.

Dr. Colbert's first major task at the School has been to develop an Introductory Pharmacy Practice Experience (IPPE). This early experience gives first year pharmacy students real life experience in pharmacy practice (inpatient and outpatient). The program began in early January 2007. We look forward to its expansion and success.



Dr. James Colbert

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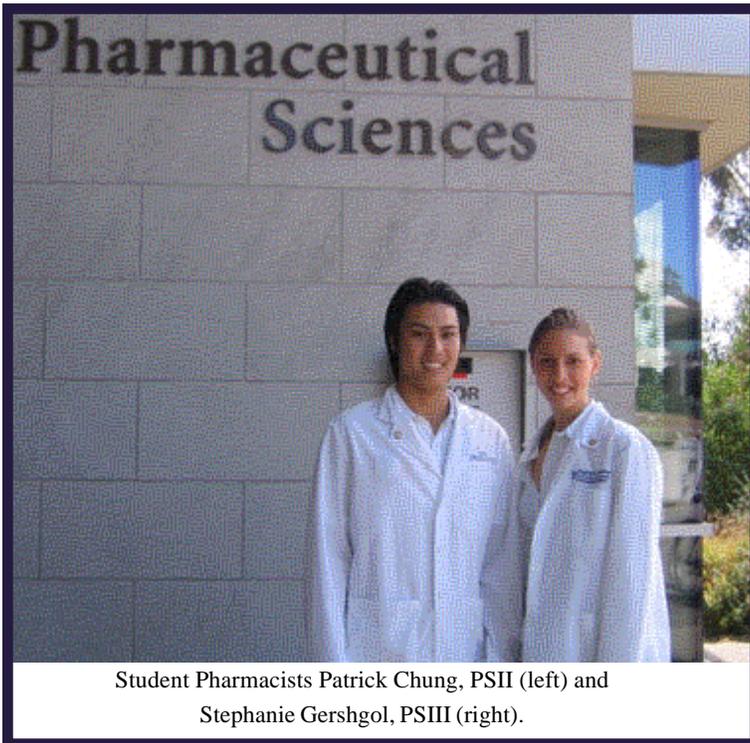
# Student News

## **APhA Annual Patient Counseling Competition**

**By: Jennifer Lai**

To kick off the Winter Quarter, APhA held its annual Patient Counseling Competition on January 11, 2007. The winner of the competition was Patrick Chung, a second year student pharmacist, and runner-up was Stephanie Gershgol, a third year student pharmacist. Each will have an opportunity to compete at the State and National competitions at CPhA Outlook in Palm Springs and APhA Annual Meeting in Atlanta, Georgia.

Student Pharmacists were each given five minutes to review a prescription and patient history and five minutes to consult a patient based on their patient profile. Contestants were judged based on their ability to ask open-ended questions, utilize the patient's medication history, and communicate all pertinent information to the patient. At the end of the competition participants received feedback from the judges to see what their strengths were as well as areas to help them improve their counseling skills. As a prize, all participants received \$100 book gift certificates courtesy of APhA.



Student Pharmacists Patrick Chung, PSII (left) and Stephanie Gershgol, PSIII (right).

We were fortunate to have Isabel Mactal, from Walgreens Pharmacy, Dr. Sarah Lorentz, UCSD faculty member, and Ashley Dalton, a UCSD Clinical Pharmacist judging the event. It was a very successful event and we hope to expand and continually improve upon it every year because it gives students an excellent opportunity to put what they learn into practice.



## **AGRC Mini-Grant Awarded to William Wong**

**By Renu Singh**

In January 2007, William Wong, a second year student pharmacist, received a mini-grant from the UCSD Academic Geriatric Resource Center (AGRC) for his proposal: Training Pharmacy Students in Hyperlipidemia Screening and Management for Geriatric Patients. William intends to purchase two point-of-care lipid screening devices and accompanying testing kits to train third year student pharmacists in their use and result interpretation. Students will be able to use their training to offer lipid screening and appropriate recommendations based on their lipid tests and risk profiles to underserved communities, including geriatric patients. William's faculty mentor for this project is Renu Singh. Great job, William!

# The TET Festival: Providing Health Awareness to the Vietnamese Community

By Edward Su and Tuan Nguyen

“In Vietnamese, to celebrate Tet is to eat Tet, literally meaning "eat [for] Tet", showing the importance of food in its celebration.”

In the midst of all the festivities surrounding the celebration of Tet, the Vietnamese New Year, are scores of fatty, sugary, and salty foods that make it easy to forget the importance of moderation in a healthy lifestyle. There were few places that could make people forget their New Year’s resolutions like the Vietnamese American Youth Association (VAYA) Tet Festival held at Qualcomm Stadium on February 10<sup>th</sup>. Fortunately, student volunteers from the UCSD SSPPS student chapter of the American Pharmacists Association (ASP-APhA) were there not only to join the fun but to educate festival-goers that maintaining their good health should be a priority in everyday life.

Under the supervision of Sally Smith R.Ph, Marlene Maron, Pharm.D, and Ethan Truong, Pharm.D over 20 student pharmacists took the opportunity to refine their counseling skills and put their clinical knowledge to use in helping the community. Throughout the day, patients were screened for hypertension, heartburn, and educated the community about the importance of immunizations, and diabetes control. Each volunteer left the festival secure in the knowledge that they had made a positive impact on someone’s life.

The screening and education event at the VAYA Tet Festival was also the first ever collaboration between all four of the UCSD SSPPS ASP-APhA health awareness committees, including Operation Hypertension, Operation Immunization, Operation Diabetes, and the Heartburn Awareness Challenge (HAC). By combining volunteers and the creativity of all the different health services, the students were able to



provide a larger diversity of services that catered to a wider audience of festival attendees and maximized the time available to spread the message of health awareness at the festival.

Many thanks to all the students who were involved and volunteered with this event: Yen Nguyen, Eric Cooper, Lina Meng, Edward Su, Naz Askari, Heather Gao, Wendy Dinh, Sarah Pham, Ai-Hang Do, Karen Anderson, Tuan Nguyen, Jennifer Curello, Rob Lo, Fred Makino, Amie Nguyen, Julie Nguyen, Samar Yalda, Angie Lee, Stan Chu, Kim To, Anna Nguyen, Rachel Sperling, and Kevin Mee.

# A Joint Heartburn Awareness and Hypertension Screening Event

By Kevin Mee and Tuan Nguyen

Fifteen enthusiastic first-year student pharmacists offered risk assessment for heartburn symptoms as well as blood pressure (BP) measurements for hypertension screening at Walgreens Pharmacy in El Cajon on January 21, 2007. Many patients were screened over a three hour period. Four patients were noted to have Stage 1 hypertension ( $BP \geq 140/90$ ), while many others had either normal BP or BP in pre-hypertension range. All of our patients received appropriate counseling and recommendations based on their BP reading, and were given a pamphlet describing blood pressure-lowering tips such as eating a diet low in salt and high in fiber, fruit and vegetables, exercising regularly, and lowering alcohol intake. Patients with heartburn symptoms were assessed for risk factors contributing to their condition, and were educated on the importance of eating smaller meals, losing weight (if overweight), smoking cessation, and avoiding foods or beverages that exacerbate heartburn. A small goodies bag containing some over-the-counter medication samples were provided to these patients.

Students were involved in both screening within the store and providing educational information outside the store. Students passed out brochures, educated customers about heartburn and hypertension, and invited them to get a free screening inside the store.

We were surprised yet pleased to see a large number of elderly patients utilizing our services. Overall, it was a very enjoyable experience for us, while at the same time providing us with an opportunity to counsel patients and to make the community more aware of heartburn and hypertension.



Our many thanks to the students to participated in this event: Sarah Pham, Wendy Dinh, Kim To, Robert Lo, Steven Tan, Fred Makino, Connie Tang, Karen Anderson, Naz Askari, Heather Gao, Kevin Mee, Tuan Nguyen, Stanton Chu, Angie Lee, Amie Nguyen, and Edward Su. We are also very grateful to Walgreen's Pharmacy, El Cajon, for hosting this event, and to our faculty advisors Dr. Singh and Dr. Tsunoda for helping to make this event a rousing success.

## A New Partnership for Doc-4-A-Day

by Stephanie Gershgol

On December 2, 2006, the UCSD Skaggs School of Pharmacy & Pharmaceutical Sciences (SSPPS) joined the UCSD Medical School to carry out “Doc-4-A-Day,” an event geared towards exposing middle school students from underrepresented communities throughout Southern California to the fields of medicine and pharmacy. Doc-4-A-Day is an elective course headed by Dr. Sandra Daley, the Assistant Dean of the School of Medicine, but is organized and executed solely by participating medical and pharmacy students. While the School of Pharmacy has participated in recent years, this year marked the beginning of a new partnership between medicine and pharmacy in this educational experience. UCSD SSPPS hosted the event in our new building, and during four consecutive one-hour workshops, we were able to interactively introduce all 130+



middle school students to a number of diverse opportunities in pharmacy. By utilizing our Patient Simulation Lab, the students were able to rotate through mini-sessions, practicing compounding, patient counseling, participating in a mini-clinical trial, and learning about drug information and over-the-counter products. It was a valuable opportunity for the student pharmacists to teach, and offered the middle school participants a glimpse into the range of opportunities in pharmacy.

# Genentech Tour

By Joe Stalder

On December 1, 2006, a group of AAPS members were joined by other pharmacy and medical students to take a tour of Genentech's new manufacturing plant in Oceanside, CA. The 500,000 square-foot, \$500 million facility was built with the intent to produce the world's supply of Avastin, a VEGF-inhibiting antibody used in the treatment of metastatic colon cancer and non-small cell lung cancer. This facility represents a unique scale of



technology and of investment, while providing a snapshot of state of the art delivery of biotechnology products for health care.

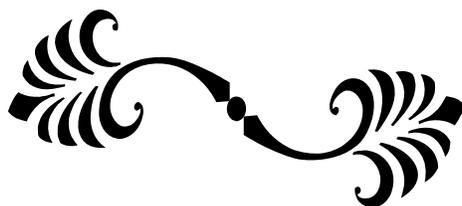
The tour began in the scaled-down research area where 3 L glass carboys are used to optimize the growing conditions of the cells that produce Avastin (modified Chinese hamster ovary cells). Parameters such as growth medium, oxygen concentration, pH, temperature, and mixing speed are analyzed and fine-tuned at this level before scaling up to the mass production level.

We then moved over to the manufacturing area where six

15,000 L steel bioreactors that span two vertical floors are used to produce the drug. We also visited the control room where computers are used to monitor and control every parameter of bioreactor activity. We completed our tour with a trip through the purification room where antibody-binding resins and cross-flow filtration are used to isolate the final product. The purified product is then frozen in smaller tanks for delivery to distribution centers throughout the country.

We learned that each bioreactor produces enough Avastin for about 3000 patients, accounting for nearly \$7 million worth of drug. Also, with a run-time of 30 days, the six reactors are run simultaneously so that enough drug is produced to supply hundreds of thousands of patients.

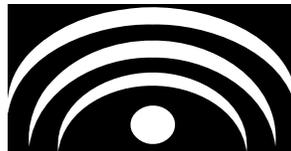
Special thanks to Dr. John Wooley of UCSD for coordinating the tour, and to Tim Kirchner of Genentech for hosting.



# Students Honored at the California Pharmacists Association Outlook Meeting

By Tony Manoguerra

Stephanie Gershgol, Class of 2008, (center) was one of three students honored at the California Pharmacists Association Outlook meeting in Palm Springs, CA in February. Stephanie was awarded the Robert C. Johnson Scholarship for excellence in scholarship, leadership and service to the community and the profession. Each of the seven schools of pharmacy in the state nominated a student for the award from which three students were selected by an awards committee. Patrick Chung, Class of 2009, (left) represented the School as a participant in the Patient Counseling Competition. Also shown in the photograph is Chris Woo, Pharm.D. (right), Assistant Clinical Professor and preceptor for UCSD student pharmacists.



## Operation Diabetes in Action: Making a Difference in Peoples' Lives

By Candis Morello and Rachel Sperling

Diabetes is a disease with serious health consequences. If left untreated, chronic hyperglycemia results in complications ranging from poor wound healing and high blood pressure to kidney disease, blindness, heart attacks and even death. However, early progression of the disease may be slow and asymptomatic, and, as a result, nearly a third of the estimated 20.8 million Americans with diabetes do not know they have this metabolic disorder. Healthcare professional practitioners play a vital role in identifying those at risk for the disease and ensuring that patients receive proper treatment. Student pharmacists are actively involved in these efforts through Operation Diabetes, a project under the auspices of American Pharmacist Association-Academy of Students of Pharmacy (APhA-ASP). For the 2006-2007 academic year at UCSD Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS) Rachel Sperling, a first year student pharmacist, is chairing our Operation Diabetes project under the mentorship and guidance of faculty advisor, Candis Morello, Pharm.D., CDE. Through this program, student pharmacists at UCSD SSPPS and across the nation provide diabetes education and free screenings to the public. The goals of the program are to increase public awareness, identify patients at risk and ensure that all patients with diabetes reach the best possible outcomes.

In pursuit of these goals, the UCSD SSPPS chapter of Operation Diabetes held a free blood glucose screening on Wednesday, Feb. 28, 2007 at the UCSD Free Clinic in Pacific Beach. Located in the Pacific Beach United Methodist Church, this clinic caters to the homeless, the working poor and others who fall through the cracks of our medical system. Fourteen 1<sup>st</sup> year student pharmacists volunteered at the event, including Rachel Sperling, Megan Chynoweth, Mo Cui, Judy Hsiao, Naz Askari, Heather Gao, Shida Hashemi, Cassandra Schmid, Melissa Wallace, Annie Chen, Steven Chen, Sarah Pham, Angie Lee, and Irina Oykman. Under the supervision and guidance of Drs. Candis Morello, Pharm.D., CDE and Sunny Smith, MD, student pharmacists screened a total of 21 patients. Most of those screened had blood glucose concentrations within normal limits and low risk factors for developing diabetes. However, we identified one patient with a glucose concentration over 500 mg/dl, which is well above the 200 mg/dL screening concentration for a causal (any time of day without regard to food) glucose concentration. Upon further assessment, the patient reported having progressive symptoms of diabetes over the previous three years. Due to the screening and subsequent intervention, this patient is now being treated for type 2 diabetes at the UCSD Free Clinics and will receive education and tools to help control diabetes and prevent further complications.

This patient is but one representative of the millions who remain unaware that they suffer from diabetes. Our hope is that future screenings will allow us to continue our quest to raise the public's awareness about diabetes, identify people at risk and help them learn how live a healthy lifestyle with diabetes. . . .and one by one, we hope to continue making a difference in peoples lives. This patient is but one representative of the millions who remain unaware that they suffer from diabetes. Our hope is that future screenings will allow us to continue our quest to raise the public's awareness about diabetes, identify people at risk and help them learn how live a healthy lifestyle with diabetes. . . .and one by one, we hope to continue making a difference in peoples lives.



## Farmacy Funnies

### New Drugs For Women

#### **EMPTYNESTROGEN**

Suppository that eliminates melancholy and loneliness by reminding you of how awful they were as teenagers and how you couldn't wait till they moved out.

#### **PEPTOBIMBO**

Liquid silicone drink for single women. Two full cups swallowed before an evening out increases breast size, decreases intelligence, and prevents conception.

#### **DUMBEROL**

When taken with Peptobimbo, can cause dangerously low IQ, resulting in enjoyment of country music and pickup trucks.

#### **FLIPITOR**

Increases life expectancy of commuters by controlling road rage and the urge to flip off other drivers.

#### **BUYAGRA**

Injectable stimulant taken prior to shopping. Increases potency, duration, and credit limit of spending spree.

#### **ANTI-TALKSIDENT**

A spray carried in a purse or wallet to be used on anyone too eager to share their life stories with total strangers in elevators.

#### **MENICILLIN**

Potent anti-boy-otic for older women. Increases resistance to such lethal lines as, "You make me want to be a better person ... Can we get naked now?.."

#### **NAGAMENT**

When administered to a husband, provides the same irritation level as nagging him all weekend, saving the wife the time and trouble of doing it herself.

# SSPPS News

## Applied Pharmacoeconomic and Outcomes Research Forum

By Jan Hirsch

Fall 2006

The second Southern California Applied Pharmacoeconomic and Outcomes Research Forum was held October 16<sup>th</sup> on the University of California San Diego campus. The event was hosted by the Skaggs School of Pharmacy and Pharmaceutical Sciences and supported by a grant from Allergan.

Attendees of the Forum represented Managed Care Organizations, Government Agencies, Medical Centers, Academia, and Pharmaceutical and Biotech companies in Southern California. Each attendee was invited because they had a demonstrated interest in expanding the practical application of pharmacoeconomic and outcomes research to enhance decision-making.

### Topic

#### “Biologics: Drawing (or Crossing) the line of Cost vs. Benefit? A Case in Oncology

The case, prepared by Margaret Stull, PharmD, Pharmacoeconomic Clinical Specialist at the VA San Diego Healthcare System, was for a hypothetical new biologic agent - Expenzumab (Vegitin™) - indicated for first-line treatment of metastatic colorectal carcinomas.

### Case Summary

Expenzumab has been shown to halt progression of disease by up to 6 months longer when added to standard therapy and to increase median survival by up to one year with addition to first line 5-fluorouracil based chemotherapy. There are increased risks associated with expenzumab. Risks of GI perforation and arterial thromboembolic events are increased by 60% with addition of expenzumab therapy. While risks are very rare they have been fatal in half of the patients affected. Expenzumab therapy is five times more costly than standard therapy. Medicare will require patients to pay 20% of both drugs which with addition of expenzumab could increase costs for patients up to thousands of dollars a month.

### Perspective Views

Three speakers commented from their institution’s perspective regarding issues they may face if evaluating and managing Expenzumab within their health care system.

- ❖ Government - US Navy - Ted Briski, PharmD, MBA, BCPS
- ❖ For-profit Medical Group - Sharp - Melissa Christopher, PharmD
- ❖ Integrated Delivery System Kaiser – Doug Monroe, RPh, MS, FCSHP

#### *Common views among speakers:*

- 1) Risks with Expenzumab usage were perceived as: adverse drug reactions, economic liability, and political / public relations impact of the decision.
- 2) More evidence based data is needed earlier (beyond that required by FDA), nearer to the introduction of new drugs – perhaps more patients and longer term
- 3) Guidelines should be expected to be developed and used as mechanisms for ensuring appropriate use of Expenzumab.

- 4) Guidelines do not generally consider financial implications of recommendations

***Speaker views differed based on their organization's:***

- 1) Exposure as a direct payer and assumed risk of payment (e.g. IPA vs. Staff Model)
- 2) Financial structure and incentives (e.g. For-profit MD group vs. governmental prover-payer)
- 3) Patient's expectation of their healthcare system (e.g. HMO, PPO, VA)
- 4) Degree of patient input on decision making and the system approach to assess the relative value of the product
- 5) Outpatient vs. inpatient environment and thus utilization sites and reimbursement source for Expenzumab
- 6) Legal obligations of the payer (e.g. legislation affecting governmental payer, contract for For-profit MD group)

**Break-Out Group Opinions**

Two questions were put to break-out groups for their consideration.

Considering the clinical, economic and humanistic aspects of the case, what ***advice*** could you give to *each perspective* that would **allow them to best afford or manage Expenzumab** as a covered and reimbursed benefit for their population?

***Recommendations***

Overall

- 1) Limit use of Expenzumab to labeled indications.
- 2) Measure and monitor utilization and outcomes achieved with Expenzumab as possible within system - Patient Registry
- 3) Use (continue or start) prior authorization for patients that meet only inclusion criteria for Expenzumab
- 4) Need an individual - not just physician - to discuss risk vs. benefit of Expenzumab use as well as its associated cost so patients can make more informed decisions. This will assist physician as well.
- 5) Cost share with patients.
- 6) Advice from one perspective may have negative influence on a stakeholder with a different perspective in the health care system
  - ❖ Government should
    - a. use its buying power as much as possible to drive down cost of Expenzumab
    - b. try to decrease political influence in system to make decisions more evidence based
  - ❖ For-profit group medical group should remove the physician from the purchasing process of Expenzumab

- ❖ Integrated Delivery system should wait for sufficient evidence regarding Expenzumab before making decisions (beyond the initial limited evidence the speaker deemed lacking)

### Has Expenzumab **crossed the line of cost vs. benefit?**

- ❖ One group clearly said Yes “if it exceeds an “acceptable” dollar value per Quality Adjusted Life Year (QALY)” which was data not available in the case.
- ❖ Two groups were unsure saying the answer would “depend on your perspective” and “not sure... need to know Number Needed to Treat for benefit as well as would like to have Quality of Life data”
- ❖ One group questioned the question. “What line are we referring to? Cost/QALY? What Dollar/QALY is the line? Oncologists do not consider even \$200,000/QALY as inappropriate”

### Next Forum

Our next Applied Pharmacoeconomic and Outcomes Research Forum will be held on **Monday May 14<sup>th</sup> 2007**. The topic will be related to **Quality Adjusted Life Years (QALY's)** as voted on by attendees at the October Forum. Final date and time are to be determined.

With the success of our first two Forums, we are on our way to accomplishing the Forum's second goal of fostering the creation of a broad, multi-perspective Pharmacoeconomic and Outcomes Research Interest Group in our region.

### Purpose of the Forum

The number of individuals in the Southern California region with interest in pharmacoeconomics (PE) is growing rapidly across the healthcare system - from those involved with creation of PE data within pharmaceutical and biotech companies to those incorporating results into decision making within a plethora of managed care organizations. The region provides an excellent opportunity to gather individuals to debate issues, and propose solutions that are vetted from multiple perspectives – not just individual silos defined by employer.

The Applied Pharmacoeconomic and Outcomes Research Forum was created to facilitate this cross perspective communication. The goals of the forum are to:

1. Discuss commonly encountered obstacles to conducting or utilizing results of applied pharmacoeconomic studies and explore solutions from various perspectives of the health care system.
2. Create an environment and foundation to foster the creation of a Southern California Pharmacoeconomic and Outcomes Research Interest Group

Our committee members representing major perspectives of the healthcare system are:

**Charles Daniels, R.Ph., Ph.D.**

UCSD Healthcare Department of Pharmacy

**Ted Ganiats, MD**

UCSD School of Medicine

**Jan D. Hirsch, R.Ph., Ph.D.**

UCSD, Skaggs School of Pharmacy

& Pharmaceutical Sciences

**Mirta Millares, Pharm.D., FCSHP, FASHP**

Kaiser Permanente – CA Regions

**Anthony P. Morreale, Pharm.D., MBA, BCPS**

VA San Diego Healthcare System

**Robert Schoenhaus, Pharm.D.**

UCSD Healthcare Department of Pharmacy

**Frank J. Papatheofanis, MD, MPH, PhD**

Aequitas

**Ray Townsend, Pharm.D.**

Elan Pharmaceuticals, Inc.

The Forum is only one of the activities in our larger effort to promote the application of pharmacoeconomic and outcomes analyses to provide timely, actionable data for enhanced decision-making regarding the value of pharmaceuticals and medication related services for key across stakeholders in the U.S. health care system. Other activities include education, training, research, and dissemination activities, including Continuing Education Programs to support this goal.

*The Skaggs School of Pharmacy and Pharmaceutical Sciences would like to thank the following organizations for their continued support and generous donations to our Pharmacy Practice Course.*

**Abbott Industries**

**Bayer Health Care Diagnostics**

**Longs**

**Microlife**

**Ralphs Pharmacy**

**Respironics**

**Roche**

**Sav-On/Albertson's**

**Shering-Plough**

**Target**

**Vons:A Safeway Co.**

**Walgreens**

**Wal-Mart**

# The Proteomics Laboratory

## The Proteomics Laboratory at the Skaggs School of Pharmacy and Pharmaceutical Sciences

By Vivian Hook



Drug actions largely involve interactions of the drug molecule with a critical protein(s) that regulates physiological systems in health and disease. It is, therefore, essential to investigate the system of proteins that interact in pathways underlying disease mechanisms as a means for (1) identifying new drug targets and for (2) defining mechanisms of drug regulation of protein systems for improvement of disease conditions in translational research. Such studies of proteins in pathways of biological systems is known as ‘*proteomics*.’ ‘*Proteomics*’ is defined as the study of the structure, quantities, and coordinated functions of interacting proteins in a biological system. Proteomic

research will facilitate development and discovery of new therapeutic agents for the treatment of human diseases.

*The ‘Proteomics Laboratory’ at the Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS)* is designed to utilize current mass spectrometry instrumentation for proteomic research in biomedical and pharmaceutical sciences. Mass spectrometry (MS) determines the molecular masses of proteins and peptides (small proteins), as well as small molecule pharmaceuticals, that defines their structural features based on analyses of MS data by bioinformatic database methods. Advanced mass spectrometry instrumentation achieves identification of proteins, determination of post-translational modifications that regulate protein function, quantitation of protein species, and evaluation of drug molecules. LC-MS/MS approaches combine protein/peptide separation by liquid chromatography (LC) with on-line introduction into the mass spectrometer to provide identification of multiple protein and/or peptide species in a biological sample. Off-line 1D- and 2D-LC separation of proteins/peptides based on their physicochemical properties, including activity-based fluorescent affinity probes, facilitates proteomic studies. Furthermore, nanospray-FTICR-MS (Fourier transform ion cyclotron MS) defines large protein structures in top-down MS approaches; FTICR-MS also facilitates identification of new drug molecules from a variety of natural and synthetic sources.

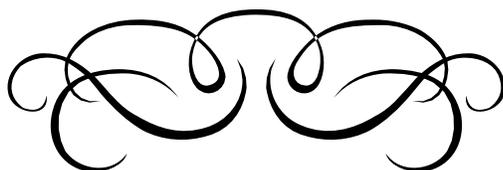
The laboratory facility can investigate quantitative comparisons of proteins in normal and disease conditions. This information can identify candidate regulatory proteins involved in the disease process. Such disease regulated

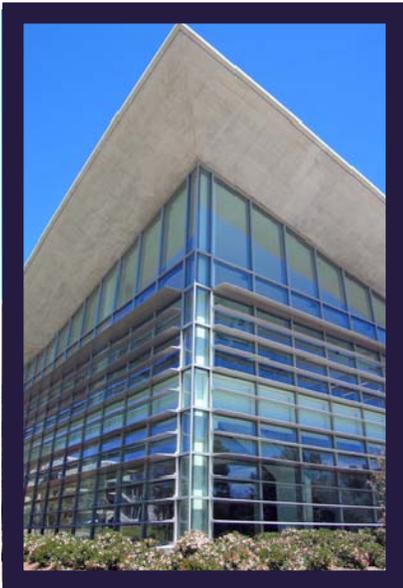
proteins provide strategies for new drug targets and drug discovery. Alternatively, drug-mediated alterations in protein pathways by proteomic approaches can enhance our understanding of drug mechanisms, which may be termed ‘pharmacoproteomics.’

Complementary expertise of the ‘Proteomics Laboratory’ provides knowledge in protein chemistry and biochemistry, mass spectrometry, and bioinformatics for collaborative proteomic research. Dr. Vivian Hook, Professor, has experience in peptide and protein biochemistry for understanding neuropeptide mechanisms of cell-cell communication in health and disease, utilizing extensive LC-MS/MS approaches. Dr. Hook joined SSPPS from the School of Medicine at UC San Diego. Dr. Pieter Dorrestein, Assistant Professor, brings specialized experience in FTICR-MS for analyses of large protein structures responsible for biosynthesis of therapeutic agents; Dr. Dorrestein joined SSPPS from the Univ. of Illinois. Dr. Steven Bark, Project Scientist, has much experience for application of analytical technology in chemistry and mass spectrometry for macromolecular structures; Dr. Bark joined SSPPS from The Scripps Research Institute. Bioinformatic expertise for proteomics is facilitated by Dr. Phil Bourne, Professor, who leads the Protein Data Bank (PDB), a world-wide repository for 3-D protein structures that is housed in SSPPS. Associated with the analytical facility of the Proteomics Laboratory is the ‘NMR Suite’ for protein structure analyses, led by Dr. Tracy Handel, Professor, who joined SSPPS from UC Berkeley. Extension of proteomic research to drug discovery is facilitated by the expertise of medicinal chemists Dr. William Gerwick, Dr. Bradley Moore, and Dr. Tadeusz Molinski of SSPPS, Scripps Institute of Oceanography (SIO), and Chemistry at UCSD.

The Proteomics Laboratory participates in training students with the graduate course ‘Proteomics for Biologists’ taught by faculty of SSPPS and collaborative faculty from multidisciplinary departments at UCSD from medicine to chemistry and bioinformatics. Students are guided on approaches to integrate proteomic strategies into their thesis research projects.

The Proteomics Laboratory has the opportunity to provide the link for translational research between biomedical and pharmaceutical science research areas of protein functions, as the basis for enhancing efforts for drug discovery and understanding drug actions. The Proteomics laboratory looks forward to exciting new research accomplishments for understanding human health and disease.





## Electronic Class Reserves at the Biomedical Library Website

By Sue McGuinness

Our pharmacy students always appreciate free, online access to course content and other learning materials, and the Biomedical Library (BML) electronic class reserves service provides all that and more. Upon request, library staff will create a web page for your class and post items such as syllabi, powerpoint presentations, lecture notes, old exams, class handouts, image or audio files, journal articles, or even scanned sections of books (in compliance with copyright law.) We can also create links to other essential library resources needed for your class, or stored PubMed searches, which connect students to current literature on your topics. If the library does not own an item you request, we will attempt to purchase any book needed for class reserves.

Access to class reserves is restricted to UCSD IP addresses. Students, staff, and faculty can access reserves from off-campus through our proxy or VPN service, using their UCSD network user name and password.

To take advantage of the electronic class reserves service, complete the request form at <http://libraries.ucsd.edu/services/reserves-form.html>. The request form allows you to provide complete citations to articles or book sections, or to attach your own materials for posting. Please allow 24-48 hours for our library staff to create your course reserves website and post electronic documents. If you need print documents scanned and posted please allow 3-4 days. Now is the time to submit requests for Spring Quarter!

For more information about the BML electronic class reserves service, go to the BML home page at <http://biomed.ucsd.edu> and click the link to Class Reserves under Services, or contact the BML Class reserves coordinator, Jay Dailey at (858) 534-7092 or [jdailey@ucsd.edu](mailto:jdailey@ucsd.edu).

## Alumni News

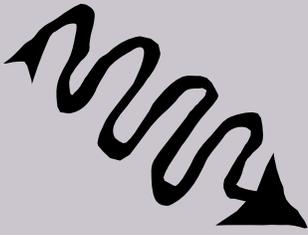
**Jason Lam** is a member of the charter class that graduated from the Skaggs School of Pharmacy and Pharmaceutical Sciences last June. Medicine is a tradition in his family. Jason's grandfather was a physician in Eastern medicine in Taiwan, as were many other members of his family in previous generations. When Jason was young, his four uncles chose not to follow the family legacy into the medical field, so Jason's mother encouraged him at an early age to become a medical physician. He was headed in that direction until he took a pharmacology class and worked in a pharmacy. That's when he saw the important and large role pharmacists play in patients' lives, and Jason decided he wanted to pursue a career in pharmacy.



Jason is now helping to support other students who wish to pursue a career in pharmacy. He recently pledged to contribute \$10,000 to provide student scholarship support at the Skaggs School of Pharmacy and Pharmaceutical Sciences. The scholarship fund has been named "The Paul John Scholarship Fund" to honor his grandfather's clinic in Taiwan.

# Welcome!

A Warm Welcome to our New and Reappointed  
Voluntary/Non-Salaried Clinical Faculty



## *New Appointments*

Jeremy Babendure

Beatriz Batarse

Jennigrace Bautista

Timothy Chen

Olga DeTorres

Larry Drechsler

John Eastman

Jason Kim

Michael Kruse

Kelly Lee

Joseph Ma

Susan McGuinness

Khanh Nguyen

Maricela Ochoa

Jason Sauberan

Sally Smith

Craig Steinberg

Dieter Steinmetz

Juan Toledo

Danny Vu

Sherry Watanabe

## *Reappointments*

Yogesh Bhakta

Frank Cantrell

Edmund Capparelli

Alex Dominguez

Candace Eacker

Melissa Egan

Anthony Fox

Richard Gordon

Vivian Hook

Yelena Itkin

Farivar Jahansouz

Scott Johns

Joe Kern

Tung Le

Heather Minger

Anthony Morreale

Edna Ng-Chen

Annette Nguyen

Nina Nguyen

Annette Nguyen

Jagwant Rai

Linda Reynolds

Jillian Skog