PRESCRIPTION FOR THE FUTURE
Experts weigh in on the implementation of SB 493.
About the USC School of Pharmacy

One of the top 10 pharmacy schools nationwide and the highest-ranked private school, the USC School of Pharmacy continues its century-old reputation for innovative programming, practice and collaboration. The School created the nation's first Doctor of Pharmacy program, the first clinical pharmacy program, the first clinical clerkships, the first doctorates in Pharmaceutical Economics and Regulatory Science, and the first PharmD/MBA dual-degree program, among other innovations in education, research and practice. The USC School of Pharmacy is the only private pharmacy school on a major health sciences campus, which facilitates partnerships with other health professionals as well as new breakthroughs in care. It also is the only school of pharmacy that owns and operates three pharmacies.

The School is home to the International Center for Regulatory Science at USC, and is a partner in the USC Leonard D. Schaeffer Center for Health Policy and Economics and the USC Center for Drug Discovery and Development. The School pioneered a national model of clinical pharmacy care through work in safety-net clinics throughout Southern California. A focus on clinical pharmacy, community outreach, regulatory science, drug discovery and development, and health economics and policy positions the USC School of Pharmacy as a leader in the safe, efficient and optimal use of medication therapy that can save lives and improve the human condition.

Results magazine, published semi-annually, highlights some of the School's latest advances and achievements, as well as the faculty, students, alumni and donors who make this work possible.
A Day in the Life

The clinical pharmacy team at the AltaMed safety-net clinic in Pico Rivera proves invaluable to patients while demonstrating the value of the pharmacist on the healthcare team.
Next summer, I will step down as dean of the USC School of Pharmacy, as I have decided not to seek a third term. The decision is a bittersweet one. When I arrived at the School more than nine years ago, I found an amazing institution on which to continue to build an enduring legacy that serves the students we educate, the community we serve and the profession we love.

At that time, I said I wanted to serve as dean for two terms, allowing me 10 years in which to lead one of the nation’s premier pharmacy schools—a School nationally known for innovation and leadership. My stepping down provides an opportunity for another leader to take the helm in piloting this great School even further as an innovator in pharmacy education, research and practice. Personally, this transition allows me to turn more attention to national issues surrounding health policy and the promotion of the pharmacy profession during this pivotal time in its evolution. I am especially looking forward to joining the faculty and serving as a senior adviser to the USC Leonard D. Schaeffer Center for Health Policy and Economics.

I believe true leadership requires one to know when to pass the baton. I remain dedicated to making sure the School continues as a pioneer in both the academic and professional evolution of the pharmaceutical fields. So while I want all of our stakeholders to know that I will not seek a third term, I also want you to know that, during this final year of my deanship, I will do everything in my power to sustain our national upward trajectory—in innovating in education and practice and creating new programs and curricula that meet the demands of the dynamic healthcare landscape. I will also strive to put us closer to meeting our campaign goal, as this support is imperative for the continued success of our School, our faculty and, most importantly, our students.

Finally, I will work with the provost’s office to help find an amazing leader to sit in the dean’s chair upon my departure. Serving as dean of the USC School of Pharmacy continues to be the greatest honor and reward in my long career, and I look forward to making many contributions during this academic year and beyond to help our School become even better and our future brighter still.

Fight On!

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USC Schaeffer Center Hosts Major Health Economics Conference

Leading experts at the intersection of healthcare and economics converged at USC June 22–25 to exchange ideas on a diverse range of topics relating to improving medical care while reining in ever-increasing costs. Hosted by the USC Leonard D. Schaeffer Center for Health Policy and Economics, this fifth biennial conference of the American Society of Health Economists (ASHE) featured presentations and lively discussions that shed light on today’s most pressing healthcare challenges and opportunities.

The more than 800 participants at ASHEcon 2014 ranged from students to senior health economists and came from government, industry and academia to address the theme “Health & Healthcare in America: From Economics to Policy.” USC School of Pharmacy faculty members were among the prominent presenters on topics ranging from implementation of the Affordable Care Act (ACA) to Alzheimer’s disease. More than 190 presentations were given during the four-day conference.

During the opening plenary session, Neeraj Sood, USC School of Pharmacy associate professor and director of International Programs at the Schaeffer Center, presented results from a survey of ASHE membership regarding such topics as how to reduce rising Medicare spending, the predicted annual growth for healthcare costs and whether increasing health insurance coverage will improve lifespans for the newly insured. Sood also served as host committee chair for ASHEcon 2014.

Leonard D. Schaeffer, the Judge Robert Maclay Widney Professor at USC, introduced a roundtable discussion on innovative models for payment reform. The discussion brought together the four scholars holding Schaeffer endowed chairs of health policy throughout the nation: Dana Goldman, director of the USC Schaeffer Center, who served as moderator; Michael Chernew of Harvard; Alice Rivlin of the Brookings Institution; and James Robinson of the University of California, Berkeley.

USC School of Pharmacy Associate Professor Jason Doctor was among the speakers at the plenary session “Behavioral Economics for Altering Physician Behavior.” The panel discussed “nudges” that can influence physicians’ decision-making and improve clinical practices. These include social cues from both peers and patients, which can be even more effective than the mixed results achieved by financial incentives alone. Indeed, a recent *Journal of the American Medical Association* article found that dollar increases had no significant effect.

During the plenary session and in a presentation later the same day on research co-authored with USC Pharmacy Professor Joel Hay, Doctor focused on ways to reduce the needless prescription of...
antibiotics, which not only wastes millions of dollars annually and risks adverse side effects, but also contributes to the rise of antibiotic-resistant bacteria. His randomized study had physicians place posters in their exam rooms explaining safe antibiotic use. The results indicated that unnecessary prescriptions fell by nearly 10 percentage points among physicians who used the poster, while they actually rose by more than 9 percent among those who did not. Doctor estimates this simple notice could eliminate 2.6 million unnecessary antibiotic prescriptions each year and save $70.4 million in drug costs if adopted nationwide.

Kevin Volpp of the University of Pennsylvania served as discussant for Doctor’s presentation. He called the research “ambitious and policy relevant,” adding: “There are few randomized trials on what works in practice in the field. You should be commended for that.”

Hay shared his and co-author Doctor’s National Institutes of Health-funded research on provider preferences regarding methods to reduce antibiotic overprescribing: “Annually in the U.S., there are 94,000 life-threatening events and 18,500 deaths relating to antibiotic overprescription.” Hay added that, of the 41 million prescriptions for antibiotics each year, 55 percent are inappropriately prescribed. Of the options he studied, the most effective and preferred method was giving doctors an alternative prescribing option when they are charting patients.

Attendees at ASHEcon 2014 had a once-in-a-lifetime opportunity to stand beneath the dinosaurs at the Los Angeles County Museum of Natural History while being serenaded by the storied USC Trojan Marching Band as a prelude to a dinner for conference participants.

The Schaeffer Center is a collaboration between the USC School of Pharmacy and the USC Price School of Public Policy.

Chen in New Leadership Role

Steven Chen, PharmD ’89, has been appointed chair of the Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics & Policy. A faculty member at the School since 1998, he holds the Hygeia Centennial Chair in Clinical Pharmacy, is a Distinguished Faculty Fellow of the Center for Excellence in Teaching and is among the leaders of the Interprofessional Education Committee on the Health Sciences Campus.

“Dr. Chen is a recognized national leader in designing and implementing innovative clinical pharmacy practice models, a two-time winner of the American Pharmacists Association highest honor (Pinnacle Award) and a truly superb clinician,” says Dean R. Pete Vanderveen.

He is recognized as a pioneer in establishing the pharmacist as a pivotal member of the healthcare team and in utilizing the pharmacist in this role to improve health outcomes while saving financial resources in clinics serving homeless and uninsured patients. His innovative work in Los Angeles safety-net clinics has emerged as a national model that has been replicated at clinics across the country. He currently oversees teams of clinical pharmacists, residents and students at more than 20 safety-net clinics throughout Southern California.

Chen is a co-investigator on the largest grant ever received by the School, a $12 million innovation grant from the Centers for Medicare and Medicaid Services. This project, currently in its third year, aims to improve medication use and safety and access to primary care among vulnerable populations in Southern California.

He also has served as national co-chair of the Health Services Research Agency’s Patient Safety and Clinical Pharmacy Services Collaborative, which has exponentially expanded the footprint of clinical pharmacy services in clinics nationwide.
Out-of-This-World Research

The USC School of Pharmacy is launching its research into orbit, thanks to Associate Professor Clay Wang’s three-year, $600,000 grant from NASA’s Space Biology Program.

Wang received the funding for his project “Influence of Microgravity on the Production of Aspergillus Secondary Metabolites (IMPAS)—A Novel Drug Discovery Approach with Potential Benefits to Astronauts’ Health.” This is the first time the School of Pharmacy has received grant support from NASA.

The project will examine how microgravity environments influence the effectiveness of drugs. Wang will partner with experts from Jet Propulsion Laboratory to conduct his research.

“NASA is interested in the biology of organisms—their DNA, RNA and metabolic levels—and how they behave in space,” explains Wang, whose area of expertise is natural organisms that produce drugs. “Organisms produce different drugs under different conditions. They are smart, and only make drugs when they need them.”

Wang will be looking specifically at fungi, making history as heading the first-ever such spaceborne study.

“I hope that my research will lead to the discovery of new drugs that could be used in space, as well as the potential for drug creation in space,” he says.

Only 26 proposals from across the nation received funding. Wang’s is unique in that it is the only one taking on a project from a drug discovery perspective. The approved research projects will be conducted aboard the International Space Station.

“The research will help uncover new basic knowledge that other NASA researchers and engineers can use to solve problems confronting human exploration of space, or that could lead to new biological tools or applications on Earth,” NASA noted in its announcement.

Wang also has received funding from the Department of Defense, the National Science Foundation, the Department of Energy and the National Institutes of Health.
Championing the Role of Community Pharmacy

After 31 years at Walgreens, where he advanced from interning to ultimately serving as president of pharmacy, health and wellness, Kermit Crawford has joined the USC School of Pharmacy as executive in residence and senior adviser to the dean.

Crawford will continue to serve as a senior counselor to Walgreens President and CEO Greg Wasson, who calls him the architect and driver of the company’s strategy to advance the role of community pharmacy in America. He now shifts this drive to USC, where he will also work with the USC Leonard D. Schaeffer Center for Health Policy and Economics.

“To me, community pharmacy has long been an unsung hero in our healthcare system, helping primary caregivers to provide convenient, affordable and essential health and wellness services in neighborhoods across America,” Crawford says. “I look forward to continuing to advance the role of community pharmacy in healthcare through my work at USC.” He has been a member of the School’s Board of Councilors since 2010.

“Having one of the most respected executives in the pharmacy industry join the USC School of Pharmacy is an incredible opportunity for us,” says Dean R. Pete Vanderveen, the John Stauffer Decanal Chair in Pharmaceutical Sciences. “Kermit shares the School’s passion for changing the professional role of the pharmacist and will provide a great new perspective on our profession with real-world vision and application.”

Crawford joined Walgreens in 1983, rising through the ranks at a time of dramatic changes in the healthcare industry. He led a transformation of the pharmacy experience at Walgreens, moving it from a model focused on product delivery to one in which pharmacist–patient interaction is central.

Over the years, his titles at the pharmacy chain included store pharmacist, district manager, vice president of store operations and vice president of pharmacy benefit management (PBM) services. He oversaw all aspects of Walgreens PBM, which covered more than 10 million customers. In 2010, he ascended to lead all pharmacy, health and wellness services of the company.

In each of his roles, Crawford stressed that the value of medication exists in the clinical outcome, which is a result of proper medication use enhanced by interactions with the pharmacist.

Chain Drug Review honored Crawford in 2009 as Pharmacy Executive of the Year. In 2011, the publication named Walgreens Retailer of the Year and recognized Crawford among the company’s top five executives. In 2012, Savoy Magazine named him one of the Top 100 Most Influential Blacks in Corporate America.

Also that year, Black Enterprise Magazine named him among the Top 100 Most Powerful Executives in Corporate America.

Crawford is national chair of the American Diabetes Association’s Ad Council campaign and serves on the board of directors of the Allstate Corp. and the National Association of Chain Drug Stores. He earned a bachelor of science degree in pharmacy from Texas Southern University in 1983, ranking second in his class.

Goldman Addresses Congressional Group

In testimony before the Congressional Diabetes Caucus, Dana Goldman warned of the need to account for heterogeneity among those with diabetes when using comparative effectiveness research (CER) to determine which treatments work best for most patients. Goldman spoke at the briefing “The Health and Economic Value of Comprehensive Diabetes Management,” which drew more than 60 Capitol Hill staffers.

Congress funded CER research from 1972 to 1995. The concept resurfaced during the healthcare reform debate and became central to the Affordable Care Act. Proponents argue the method could improve medical care while also saving costs.

But Goldman, director of the USC Leonard D. Schaeffer Center for Health Policy and Economics, which is jointly housed at the USC School of Pharmacy and the USC Price School of Public Policy, urged caution. Care must be taken in applying CER to diabetes because the optimal treatment for each patient is different, he said.

Patients will be hurt if “the ultimate effect of this is we will have [insurance] payers steering patients to the cheaper drug because of CER,” Goldman said.

In addition to his professional expertise, Goldman shared his personal experience with diabetes and patient differences. He was diagnosed with Type 1 diabetes at the age of 29, even though the disorder usually manifests during childhood.

Diabetes affects about 30 million Americans, or more than 9 percent of the population, and accounts for half of all Medicare spending.
Remembering Dean Emeritus John A. Biles

John A. Biles, who led the USC School of Pharmacy as dean for 27 years, died on June 27 at his home in Pacific Palisades after a long illness.

Helming the School from 1968 to 1995, Biles’ leadership encompassed industry as well as the academy and changed the course of the pharmacy profession. He helped transform the pharmacist’s perceived role as a dispenser of medicines to an essential clinical partner in optimizing patient health. Under his direction, the School became the first in the nation to offer students clinical clerkships like those in medical schools. This model has since become the standard in pharmacy education throughout the country.

His unique vision and dedication to students’ success also led to launching the country’s first PharmD/MBA in 1988 and first PharmD/certificate in gerontology in 1990, enabling students to add valuable specialties to their portfolios.

That same year, realizing the growing need for cost-effectiveness in providing optimal health care, Biles pioneered the PhD in pharmaceutical economics and policy. The program prefigured the School’s partnership in the USC Leonard D. Schaeffer Center for Health Policy and Economics, which now ranks among the best in the nation.

“The imprint of Dean Emeritus John Biles on our School is deep and strong,” says School of Pharmacy Dean R. Pete Vanderveen. “He truly stands as one of the nation’s greatest-ever pharmacy deans. Pharmacists from USC and nationwide owe him a great debt of gratitude.”

Biles grew up in the small Colorado town of Del Norte and started working for a local pharmacist at the age of 8. According to his daughter, that early pharmacy experience greatly influenced his ultimate career choice. He earned a BS in pharmacy and a PhD in chemistry from the University of Colorado. Biles then taught at Midwestern University in Wichita Falls, Texas, and Ohio State University before joining USC in 1952.

After his appointment to USC, a small pharmaceutical company called upon him to help recreate vital product formulas that were lost with the unexpected death of its chief chemist. Biles succeeded, and that company, Allergan, went on to become a global force in the healthcare industry.

“There would be no Allergan today had John not recreated those formulas,” says Allergan Chairman Emeritus and USC Life Trustee Gavin S. Herbert. Their professional collaboration launched a partnership between Allergan and the School that lasts to this day, providing numerous fellowship opportunities to USC PhD and PharmD graduates.

Biles—whose father died before he was born—valued personal relationships even more than professional ones. During his time as dean, he made a point of getting to know every faculty and staff member. Many who served during his tenure still marvel at his ability to remember all their children’s names. For students, his door was always open—they paid his salary, he used to say, and so they were welcome in his office anytime.

Biles generously shared his expertise throughout his storied career. In 1975, he served on the Millis Commission on Pharmacy, which issued a watershed report instrumental in moving the profession from being product-centered to patient-centered. He served as president of the American Association of Colleges of Pharmacy, was a Fellow of the Academy of Pharmaceutical Sciences and of the American Association of Pharmaceutical Scientists, and reviewed for the Journal of the American Medical Association. He also consulted for the Bureau of Health Manpower, and was a member of the National Advisory Board.
Council on Education for Health Professions and the National Advisory Health Services Research Council. In 2003, he was selected for inclusion in Who’s Who in America.

“John Biles was a renaissance man who was extremely accomplished and knowledgeable about science, business, healthcare, arts and literature, and was blessed with excellent leadership skills,” says Phillip R. Oppenheimer, dean of the Long School of Pharmacy at the University of the Pacific, who served as an associate dean under Biles at USC.

Biles’ legacy at the School continues with the John A. Biles Professorship in Pharmaceutical Sciences, currently held by Professor Wei-Chiang Shen, and the Margaret and John Biles Scholarship. During his lifetime, Biles’ USC plaudits included the 1962 Associates Award for Excellence in Teaching, the 1998 Faculty Lifetime Achievement Award and the 2001 Teaching and Mentoring Award. The University of Colorado honored its distinguished alumnus with the Distinguished Coloradan Award in 1992.

Biles is survived by his wife of 71 years, Margaret; their daughter, Paula Murphy; son-in-law, Patrick Murphy; and two grandsons, Brendon and Christopher Murphy.

Those wishing to make a gift to the School of Pharmacy in Biles’ memory may send their donations to Jennifer Watson, USC School of Pharmacy, 1985 Zonal Ave., Los Angeles, CA 90089-9121. Please note “Dean Emeritus John Biles” in the check memo. Friends also may honor Dr. Biles with donations to the Pacific Palisades Presbyterian Church, attention Nancy Takacs, noting “Biles-Music” in the check memo. The address is 15821 Sunset Boulevard, Pacific Palisades, CA 90272.

Antidepressants May Also Fight Prostate Cancer

An international team of researchers studying a behavior-altering enzyme commonly targeted by depression medications has uncovered a link to prostate cancer. The team, which included Jean Chen Shih, University Professor at the USC School of Pharmacy, found that suppressing the enzyme monoamine oxidase A (MAO-A) reduced or even eliminated prostate tumor growth and metastasis in mice, opening the door for physicians to possibly use MAO-A-targeting antidepressant drugs as cancer suppressants.

“This is the first paper showing that MAO-A plays an important role in prostate cancer progression and metastasis. MAO-A inhibitors may provide an unmet need in cancer treatment,” says Shih of the research, which was published in the Journal of Clinical Investigation in May.

Shih, who was the first to clone MAO-A and has studied it for 30 years, collaborated with fellow co-corresponding author Leland Chung, a prostate cancer expert from Cedars-Sinai Medical Center. Their team included researchers from the Keck School of Medicine of USC and the Fourth Military Medical University in China. The first author, Boyang Wu, was Shih’s doctoral student at USC.

The team’s next steps include a Phase II clinical trial of the MAO-A inhibitor in prostate cancer, in collaboration with Mitchell Gross of the Keck School of Medicine of USC and the Fourth Military Medical University in China. The first author, Boyang Wu, was Shih’s doctoral student at USC.

Above: MAO-A model
5 MYTHS ABOUT CANCER CARE IN AMERICA
Two of the nation’s leading economists debunk common misconceptions about cancer care.
Maybe the sky isn’t falling after all.

**MYTH #1** The war on cancer has been a failure.

**REALITY** Survival rates for all cancers increased by almost four years between 1988 and 2000, creating 23 million additional life years and generating $1.9 trillion in additional value to society.

**MYTH #2** Detection, not treatment, accounts for most of the survival gains.

**REALITY** Almost 80 percent of survival gains were attributable to improvements in treatment, with the remaining 20 percent attributable to better detection.

**MYTH #3** Treatment costs are unsustainable.

**REALITY** The focus should be on the price of health, not the price of healthcare services.

**MYTH #4** Cancer treatment at the end of life is of low value.

**REALITY** Behavior demonstrates that life is more precious when less of it remains.

**MYTH #5** Supportive care is overused.

**REALITY** Supportive care enables the administration of more aggressive chemotherapy regimens by avoiding or managing the debilitating effects of the toxicity.

Source: Dana P. Goldman—Leonard D. Schaeffer Chair and director of the Leonard D. Schaeffer Center for Health Policy and Economics—and Tomas Philipson, a University of Chicago economist, in an October 2014 article in the journal Health Affairs.

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**Pharmacist Poet**

Poet and future pharmacist Ruth Madievsky emigrated from Moldova to the United States at age 2 with her pharmacist mother and physician father. Although she has long wanted to work with patients, she also harbors a strong interest in the arts. The 2013 Trojan Admission Pre-Pharmacy (TAP) program graduate majored in biology and minored in USC’s Thematic Option honor’s program with a focus on humanities and society. Her passion is poetry.

“I’m a conceptual learner, so I like the big picture and seeing how everything works together,” she says. “There is a lot of poetic stuff about how the body works.”

Her work has been published in numerous literary journals, including RHINO Poetry, The Doctor T.J. Eckleburg Review, Atticus Review and Revolution House. She earned a Student Recognition Award from Phi Kappa Phi for her chapbook Ghosts I Am Giving Up. The collection of poems includes three sections: The first focuses on her Russian Jewish descent and its influence on her worldview; the second on her experiences traveling in Europe for a summer poetry program; and the third on her work as a research assistant at an HIV clinic.

“My parents were big influences,” she says. “Healthcare is in my genes. I like the balance between the different ways I can touch people’s lives—tangible and intangible—through science and writing.”

Madievsky, who interns at Mission Road Pharmacy, plans to become an ambulatory care pharmacist specializing in pain management and oncology. In the tradition of such Russian medical minds as Chekhov and Bulgakov, she will also keep writing. She even hopes to earn a master of fine arts in poetry.
Los Angeles Magazine has named Roberta Diaz Brinton its Woman of the Year for her trailblazing research to combat Alzheimer’s disease. Brinton developed two compounds currently in clinical trials that have immense potential to address the condition that afflicts more than 5 million Americans.

A leading neuroscientist, Brinton has dedicated decades to pursuing answers to one of the nation’s most urgent health issues—Alzheimer’s disease and its brutal impact on individuals, families and society. Every 67 seconds, another American develops the disease, which costs the nation more than $200 billion each year. Since women—who comprise two-thirds of those with Alzheimer’s—are disproportionately affected, Brinton has focused on developing safe and effective natural formulations that provide the brain-saving benefits of estrogen without negative effects on breast and uterine health.

Women also provided the basis for the discovery that a molecule made during pregnancy can generate neural stems to regenerate the brain and restore memory function in females and males. This discovery forms the basis of a clinical trial currently underway of the compound allopregnanolone in persons with early-stage Alzheimer’s, the first regenerative therapy ever tested for the disease.

“My motto is envision the impossible and make it possible,” says Brinton, the R. Pete Vanderveen Chair in Therapeutic Discovery and Development at the USC School of Pharmacy. “When your vision is to do what no one else has done, you need to develop creative and innovative strategies and teams to achieve the goal. USC creates an environment where creativity and innovation thrive and are connected to the human spirit.”

Brinton’s work is unique in many ways. It is rare for a single lab to lead the discovery, therapeutic development and clinical trials of a project, as her lab has done for both of the current clinical trials she is spearheading. Her lab also serves as an incubator for the next generation of scientists, with seasoned researchers who hold PhD, MD and PharmD degrees working shoulder to shoulder with graduate, undergraduate and even high school students.

Brinton’s support of aspiring scientists stems from growing up in the ’50s and ’60s, when science and math were considered beyond the realm of girls and minorities. When she arrived at USC, a teacher in East Los Angeles invited her to speak to students in a science class housed in a trailer. The shabby surroundings could not dim the excitement she saw as the students discussed science. The experience prompted her to initiate the Science, Technology and Research (STAR) program, which recently celebrated its 25th anniversary. (See Rising STARs on page 12.) Every participant in the program has gone on to complete college, with most pursuing STEM graduate studies and careers. These outcomes are even more impressive considering that many in the STAR program are the first in their family to go to college.

“Professor Brinton’s interdisciplinary approach exemplifies the Trojan spirit of USC,” says Dean R. Pete Vanderveen. “She is able to harness the unique expertise of many to discover new approaches to Alzheimer’s disease and to inspire the next generation of scientists.”

For the Woman of the Year title, nearly 200 nominees were judged on their community service, mentorship and leadership, as well as their proven ability to inspire and innovate. Helena Chui, MD—a professor of neurology at the Keck School of Medicine of USC and an Alzheimer’s disease expert and colleague of Brinton’s—nominated Brinton for this honor.
With a quarter century of giving under-represented high school students hands-on laboratory experience, the Science, Technology and Research (STAR) program continues to spark passion for research and foster careers in science and medicine. To commemorate this milestone, STAR united current and past participants for a special celebration of its history and successes, and shared a vision for an even more impactful future.
For 25 years, the USC Science, Technology and Research (STAR) program has shown talented high school students that the sky’s the limit when it comes to what they can achieve in these fields—regardless of gender, ethnicity or economics. All they need is a push in the right direction.

“STAR students prove that ‘disadvantaged’ simply means undiscovered,” says Roberta Diaz Brinton, the program’s founder and director, and the R. Pete Vanderveen Chair in Therapeutic Discovery and Development at the USC School of Pharmacy.

Gendelman, who worked in School of Pharmacy Associate Professor Ian Haworth’s lab during his STAR experience, adds that the program “helped me get better at presenting, which is important to this day.”

At a recent celebration marking STAR’s silver anniversary, alumni spoke about the experiences and successes that the program helped set in motion. “I couldn’t wait to come to this reunion to say thank you,” said Arthur Ohannessian during the festivities. The first in his family to attend college, he is now a physician at UCLA. “I would not have the career I have and be able to make an impact on my patients and my family if not for the STAR program.”

During his time as a STAR student, Ohannessian received credit on three professional publications. Like Gendelman, he still includes that co-authorship on his CV.

“I am grateful for the fundamentals that were instilled in me by STAR,” said David Akhavan, who recently completed an MD/PhD in the UCLA-Caltech Medical Scientist Training Program.

Other STAR graduates have become medical scientists, hospital pharmacists, AIDS researchers and policy advisers, to name just a few professions. They went on to earn degrees at institutions including Harvard, Yale, Princeton, Stanford, Columbia, MIT, the California Institute of Technology, the University of California and USC. Invariably, they share a “eureka” moment when their path forward seems clear and they resolve to let no hurdles hamper them.

For Bangladesh native Raqibul Mollah, who will graduate from high school next year, STAR gives reality to possibilities that could only be hinted at by his science teachers and glimpsed in documentaries. He currently works in the lab of Heather Wipfli, associate director of the USC Institute for Global Health—a field to which he wants to dedicate his career.
“STAR has disciplined my mind,” he says. “Working with people at such a high education level is great. It has taught me how to be professional—and even to be a better person.”

Mollah adds that the experience has meant “everything” to him.

According to Alicia Sherents, a high school senior in her second STAR year, “The program is differentiated from other classes because you put in a lot more effort and work at one of the largest research institutions in the world. I love it.”

Plus, she adds puckishly, “It looks great on college applications.”

Sherents, who plans to become a physician and researcher, works in Stephen Swenson’s cancer research lab at the Keck School of Medicine of USC. The STAR program, she explains, focuses her efforts “even harder into what I’m going to be,” making her take more initiative and increasing her motivation.

Other USC labs with STAR students on their teams include the California Institute for Regenerative Medicine and the Ostrow School of Dentistry of USC. Still, says Dean R. Pete Vanderveen, “The USC School of Pharmacy has been the hub for the STAR program since its inception.”

“Regardless of your socioeconomic or ethnic background, if you want to change the world for the better, become a scientist,” are among the words of encouragement Brinton has for everyone associated with STAR.

In 2010, the White House awarded Brinton a Presidential Citizens Medal for her efforts as STAR program director. The medal, which recognizes recipients “exemplary deeds of service for their country or their fellow citizens” is one of the highest honors an American civilian can receive.

But for Brinton, not even that award can match the feeling of opening up paths of opportunity for the 600 young graduates of the program. Countless more will join them as the program forges ahead, each of them helping make the world better through science, technology and research—and every one a STAR.

PREVIOUS PAGE

1 David Akhavan, a STAR alumnus who recently completed the MD/PhD Medical Scientist Program of UCLA-Caltech, talks with STAR alumna Elvia Ahmed, currently a student at Princeton.

2 STAR alumnae Stella Gukasyan, MPH, now a researcher with AIDS Project Los Angeles, and Roxana Rodriguez, an undergraduate at Williams College

3 Maria Torres-Flores, principal of Bravo Medical Magnet High School, Thomas S. Sayles, senior vice president of USC University Relations, R. Pete Vanderveen, dean of the USC School of Pharmacy, and Roberta Diaz Brinton, director of the USC STAR program

4 USC freshman and STAR alumna Manisha Sajnani tells the audience about when she decided to become a neurosurgeon.

5 Dr. Arthur Ohannessian thanks Dr. Brinton from the podium.
When California Senate Bill 493 was signed into law on October 1, 2013, it heralded a new era recognizing the integral role pharmacists increasingly play in patient care. It underscored what implementation of the Affordable Care Act was already making clear: that including pharmacists as valued members of the healthcare team not only helps contain costs but, more importantly, also ensures that patients receive optimal care and better overall health outcomes.

But passage of SB 493 raised additional questions—from who is responsible for implementing the new law to how an advanced practice pharmacist (APP) will be defined. To address these issues, the USC School of Pharmacy surveyed a group of experts—all of whom were actively involved in helping secure the bill’s passage and/or have long been advocates of provider status for pharmacists. Below, these leaders share their insights on the likely next steps for this landmark legislation.

Who is responsible for implementing SB 493?
While a momentous accomplishment, the law’s passage actually triggers an even more complicated process to ensure success for both providers and patients—one that begins with the California Board of Pharmacy.

“The Board of Pharmacy must review the legislation and determine where additional regulations are necessary to implement the measures called for in the bill,” says California Pharmacists Association (CPhA) CEO Jon Roth. He explains that the Board of Pharmacy’s members must also work with the state Board of Medicine to establish protocols for allowing pharmacists to provide such services as hormonal contraception and smoking cessation. In addition, the Board of Pharmacy will have to create an application process for the APP credential.

While the board is officially responsible for implementing SB 493, the legislation’s ultimate success is up to pharmacists themselves, notes Sarah McBane, CPhA president-elect. “California pharmacists will be the ones providing patient care under SB 493, so, in that sense, pharmacists will be the ones implementing it.”

Current CPhA President and USC School of Pharmacy Assistant Dean for Curriculum and Assessment Kathleen Hill Besinque agrees, adding: “The professional organizations have an unofficial role that is critical to the success of the bill’s provisions.”

How is APP defined, and will all pharmacists need the same additional training?
“APPs are pharmacists who meet requirements specified by SB 493 that qualify them for unique authorities such as performing patient assessments, referring patients to other providers and engaging in collaborative drug therapy management outside of institutional settings,” says Steven Chen, chair of the Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics & Policy at USC.

“There are three criteria for being an APP,” explains USC School of Pharmacy Dean R. Pete Vanderveen. “One is a board-approved credential such as the established Board
Experts weigh in on the implementation of SB 493—the landmark legislation that gives pharmacists provider status.

of Pharmaceutical Specialties’ Credentials. I believe APhA is interested in and may have licensed Canada’s ADAPT Program, a well-studied and documented 20-week, practice-based program. ADAPT, along with other programs that several schools are developing, may be approved at the board’s discretion. Another criterion is documented work for a year under a pharmacist providing direct patient care through a collaborative agreement with a physician. The third is to complete a patient care residency with the required hours of direct patient care experience.”

Roth adds, “Pharmacists may have an array of training and experiences, but need only meet two of these criteria in order to submit their application to the Board of Pharmacy for APP recognition.”

Ryan Gates, Kern Medical Center senior clinical pharmacist and residency program director, believes the issue is far from resolved. “The exact criteria are available for review in the bill, but the Board of Pharmacy must now provide guidance on the objective criteria that certification programs must meet in order to qualify for APP,” he says. “This is a source of much debate.”

McBane notes that the training will to some extent depend on the individual pharmacist’s practice area. “For example, a pharmacist practicing in an oncology clinic may pursue a certification in oncology or have a year of collaborative practice in a cancer clinic,” she says. She hopes that the Board of Pharmacy will recognize multiple certification opportunities so that pharmacists across practice settings will be recognized as APPs able to provide patient care.

What is the timeframe for establishing APP criteria and for providing access to practicing pharmacists who want to pursue the credential?

The process is ongoing, according to Besinque, who expects “at least some APP criteria to be available in early 2015—with modifications over time.”

Gates believes that official applications for APP licensure could take until mid- to late 2015 to appear. “I’d rather it take a bit longer but get done right rather than rush through, have it done wrong and hamstring our efforts to safely expand access to quality care.”

Chen says, “Once the Board of Pharmacy provides specific details about APP standards—such as which current certifications apply or what the requirements are for new certification courses—then pharmacists can begin pursuing the designation.”

Will non-APPs face second-class status in the profession?

According to Besinque, the answer is no. “Pharmacists can perform a number of activities included in the legislation without being an APP,” she says.

Roth points out that the APP is a credential and not a second licensure category. Through the legislation, “all pharmacists … received an expanded scope of practice, which will allow them to provide additional services to their patients.”

Vanderveen agrees but adds, “Since there is little profit left in dispensing medications, I believe enlightened pharmacists in every setting should seize this opportunity to be necessary members of the healthcare team.” He insists that only this will “prevent community pharmacy from going the way of bank tellers” and become obsolete.
Does SB 493 give community pharmacists access to electronic medical records?

“Pharmacists now have permission to share in health information exchange, but sharing is not mandated,” says Chen.

“Ideally, community pharmacists will partner with accountable care organizations [ACOs], health systems and so on to get fully integrated into the electronic health record system,” adds Vanderveen. “Mobile apps are being developed that could potentially bridge the gap until full integration is a reality.”

Will future students have the training needed for designation as APPs upon graduation, or will residencies be required?

Pharmacy graduates will not automatically be eligible for the APP credential upon graduation, says Roth. Since only two of the three criteria for APP status must be fulfilled, a residency will not be required. But, he adds, students would “need to complete a certificate in a relevant area of practice and have a year of experience performing APP duties in collaboration with a physician, another APP or a health system.”

Can pharmacists serving as healthcare providers now bill for services?

“Any pharmacist who performs a covered service can bill,” says Besinque. “Getting paid, however, requires being included in the network of providers—which they can do.”

According to Roth, a taskforce of payers and pharmacists is exploring methods for allowing pharmacist compensation for services such as those delineated in SB 493.

Vanderveen adds: “Those on the cutting edge will either be employed by healthcare systems or will find ways to bill through their partnering physician groups or insurance providers on a contractual basis. Eventually, the hope is that pharmacists will have their own billing codes.”

Chen believes that, instead of this question, pharmacists should be asking, “What is the value proposition that my services can bring to hospitals, healthcare providers and payers in the health system?” He reminds us, “The primary intent of the bill is to give pharmacists the opportunity to improve medication-related outcomes and address problems created by the growing primary care shortage. This requires collaboration and alignment with the needs and struggles of payers and healthcare providers, which will in turn lead to payment for services.”

Who is responsible for establishing and implementing the billing structure?

“Each person who wants to bill is responsible,” says Besinque, who points out that billing matters are beyond the legislature’s purview. “MediCal will help set precedence,” says Gates. “But as healthcare shifts to managed care, each entity will have its own way of contracting for services—fee-for-service, capitation, capitation with risk for outcomes/quality, etc.

ABOUT THE EXPERTS

KATHLEEN HILL BESINQUE, PharmD, MSEd
Assistant Dean for Curriculum and Assessment, Director of Experiential Programs, USC School of Pharmacy
President, California Pharmacists Association
ROLE IN SB 493 PASSAGE: proposed concept and language for hormonal contraception section of bill; worked with bill sponsors; provided input to the Board of Pharmacy
ROLE IN SB 493 IMPLEMENTATION: serves on the Provider Status Joint Task Force of the California Pharmacists Association (CPhA) and the California Society of Health-System Pharmacists (CSHP)

STEVEN W. CHEN, PharmD
Chair of Titus Family Department, Hygeia Centennial Chair in Clinical Pharmacy, USC School of Pharmacy
ROLE IN SB 493 PASSAGE AND IMPLEMENTATION: met with Senator Ed Hernandez to share the results of integrating pharmacists into safety-net medical homes and to discuss the barriers associated with pharmacists not being recognized as healthcare providers

RYAN GATES, PharmD
Senior Clinical Pharmacist, Residency Program Director, Kern Medical Center
ROLE IN SB 493 PASSAGE: only pharmacist to testify before the assembly and senate committees; participated in the Board of Pharmacy subcommittees on SB 493 implementation
ROLE IN SB 493 IMPLEMENTATION: co-chairs the Provider Status Joint Task Force of CPhA/CSHP
Do pharmacists now need to obtain national provider identification numbers?
All of our experts agreed that the answer is “yes.” “Many payers use these,” adds McBane.

How is APP likely to roll out in community settings?
“Specific implementation will vary from pharmacy to pharmacy, and probably from community to community, depending on the needs of patients in each setting,” says McBane. “Regions of California that lack adequate supply of primary care physicians—which is actually most of the state—are regions where an APP in the community pharmacy may have the most benefit to patients.”

Roth considers the “rapid public acceptance of pharmacy-delivered immunizations” to be a harbinger of the legislation’s future success. “Both chain drugstores and independent community pharmacists can benefit their patients by expanding the number and type of clinical services they offer. These services will also add to the value of the pharmacist and reduce the financial burden on pharmacies that have been solely reliant on dwindling product-based sources of revenue.”

Why should an independent pharmacist pursue this path?
“Because it makes for good patient care and good business sense,” says Besinque. But, she adds, resources to aid in deciding this course are not yet available.

How will SB 493 foster interdisciplinary collaboration?
“To my knowledge, all health professional schools are mandated to include interprofessional education and training for their students,” says Vanderveen. “Team-based care is the most effective and efficient way of providing quality healthcare.” Collaboration is crucial to the legislation’s framework, adds Roth. “As the overall healthcare delivery system continues to evolve, we believe pharmacists will gain greater footing into integrated care systems such as ACOs, managed care plans and others, and will be generally recognized for the knowledge they contribute to the team.”

What’s next?
“The hard work lies ahead,” says Chen. “Pharmacists must continue to refine collaborative practices and share the results with all stakeholders. The profession needs to gear up education efforts aimed at senior leaders of health plans, medical providers and other healthcare professions and agencies to ensure that everyone understands the purpose and value that pharmacists bring to the healthcare team through SB 493.”

“Want patients asking ‘Where’s my pharmacist?’ because they expect to have us on their care team,” says McBane. Gates agrees—and adds a rallying cry: “The ‘holy grail’ is federal provider status. Fight on my friends, fight on!”

SARAH McBANE, PharmD
Health Sciences Associate Clinical Professor, University of California-San Diego
President-elect, California Pharmacists Association

ROLE IN SB 493 PASSAGE: met with stakeholders, including the California Medical Association, and legislators to discuss SB 493; championed grassroots advocacy efforts
ROLE IN SB 493 IMPLEMENTATION: co-chairs Provider Status Joint Task Force of CPhA/CSHP, member of the CPhA SB 493 Implementation Task Force to facilitate implementation of the bill’s components; co-chairs APP Certification subgroup

JON R. ROTH, CAE
CEO, California Pharmacists Association

ROLE IN SB 493 PASSAGE: co-sponsor of the legislation and coalition; established and co-led the legislative coalition in collaboration with California schools/colleges of pharmacy, the CSHP and individual pharmacist experts
ROLE IN SB 493 IMPLEMENTATION: spearheads fulfillment of SB 493 provisions

R. PETE VANDERVEEN, PhD, RPh
Dean, John Stauffer Decanal Chair, USC School of Pharmacy

ROLE IN SB 493 PASSAGE: testified before the joint Senate Health and Small Business committee as well as at the final meeting of the assembly’s Health Committee; accompanied Sen. Hernandez to several newspaper op-ed meetings to explain the bill and its necessity; served on the Provider Status Joint Task Force of CPhA/CSHP to develop bill’s language
ROLE IN SB 493 IMPLEMENTATION: serves on the Provider Status Joint Task Force of CPhA/CSHP
A Day in the

by Susan L. Wampler
The clinical pharmacy team at the AltaMed safety-net clinic in Pico Rivera proves invaluable to patients while demonstrating the value of the pharmacist on the healthcare team.

In 2012, the Centers for Medicare and Medicaid Services (CMS) awarded researchers at the USC School of Pharmacy a $12 million grant—the largest ever at the School—to improve healthcare outcomes, reduce avoidable hospitalizations and emergency visits, enhance medication adherence and safety, and lower overall costs for high-risk, underserved populations. USC partnered with AltaMed Health Services to embed pharmacy teams in six safety-net clinics in communities with populations vulnerable to health disparities and with limited access to care.

The study “is designed to address both the widespread misuse of prescribed medications and the shortage of primary care providers in low-income populations,” says Geoffrey Joyce, principal investigator on the grant and an associate professor at the School of Pharmacy.

According to Steven Chen—the Hygeia Centennial Chair in Clinical Pharmacy, chair of the Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics & Policy, and co-investigator overseeing the effort’s clinical aspects—the project is expected to lower overall healthcare costs for patients served, not to mention the enormous benefit to individual patients in terms of better health quality, safety and satisfaction. “It will serve as a model not only for other safety-net clinics, but also for all healthcare settings in the U.S. since medication misuse is not limited to the underserved,” he adds.

To observe how a pharmacy team interacts with one another and with patients, *Rx* magazine spent a day visiting the AltaMed safety-net clinic in Pico Rivera. Headed by clinical pharmacist Lily Yip, PharmD ’11, and including pharmacy resident Connie Chu, pharmacy care manager Melanie Sarabia and medical assistant Fanny Sanchez, the team sees patients with chronic conditions such as diabetes, hypertension, high cholesterol, asthma and heart failure, as well as those on blood thinners. About 60 percent to 70 percent suffer from diabetes, and many have multiple conditions.

*Pharmacy resident Connie Chu checks patient Gilbert Melendrez’s blood sugar.*
At first, some physicians at the clinic were skeptical of partnering with a pharmacist, recalls Yip, who has been there since the project’s inception. “After a month or two, the volume really picked up,” she says, attributing the rapid growth in physician referrals to positive patient feedback and health outcomes. “We’ve come a long way.” Today the team sees an average of 15 patients a day and approximately 300 a month.

Keith Somsanith, DO, who practices family medicine at the clinic, needed no convincing of the value of a pharmacist on the healthcare team. “I trained with clinical pharmacists—going on rounds with them—during my residency,” he says. “Having them on the team provides great care.”

He adds: “Having the pharmacy team has really increased access to care for our patients. Those who need followup care can get it more quickly as we can leapfrog between physician visits and pharmacist visits. This ultimately brings the patient into better disease control. Two heads are better than one.”

—KEITH SOMSANITH, DO

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The pharmacy team has a great deal of autonomy to adjust patients’ medications and initiate therapy when patient results fall outside guidelines, says Chu. “Most of the time, the patients we see here are not strictly
following physicians’ plans,” she says. “You have to deal with other issues patients face, like social issues and making sure they have access to a medication in the first place. Sometimes you come in with a huge plan in mind and all these goals for the patient, but you have to target the most important first and take everything one step at a time.”

Emily McGee attributes the pharmacy team’s care with getting her blood sugar under control, as well as providing much-needed moral support. “They’ve done wonders for me,” she says. A year and a half ago, McGee struggled to get her blood sugar below a dangerously high 400. Today, her levels are in the 90s.

“The pharmacy team changed my perspective on how I see food,” she says. “They’ve helped me empower myself. Together we’ve taken a proactive course at getting my numbers down and getting my life back. They are the backbone of my support system.”

Gilbert Melendrez tells a similar story. He developed diabetes 15 years ago but didn’t have insurance or access to medical care. A year ago, when he started working with the pharmacy team at the AltaMed clinic, his blood sugar was at 476. Now it’s routinely in the 90s. “I watched my father die of kidney failure due to complications from diabetes,” he says. “I was blessed to get into this program and blessed with a good pharmacy team. They treat you as a person.”

A vocational pastor frequently on the go, he adds that the team works with him to find an approach to healthy eating and medication adherence that works for his unique needs and hectic schedule. Before he leaves the appointment, Sarabia—a pharmacy technician—sets him up with a nutritionist appointment to coincide with his next visit.

Sarabia, who joined the team in November 2012, provides a wide array of patient assistance—from support with insurance questions to following up with patients who miss an appointment and from helping ensure they don’t run out of refills to collecting data for the grant. She also coordinates other needed care, such as referrals for podiatry, cardiology and ophthalmology services. The group expanded again in August 2013 with the addition of medical assistant Sanchez, who takes patient vital signs, tests blood sugar levels and collects full medical histories to allow the pharmacists more one-on-one time with the patients.

On the day results visited the clinic, Yip spent an hour with new patient Steven Williams, reviewing every medication and the optimal timing and method for taking each. She gave him a log sheet and explained how to use it for tracking his sugar levels. She listened sympathetically as he shared concerns about insurance coverage, and asked about his next dental appointment when he complained about his loose teeth and how
hard they make it to follow a healthy diet. She offered free smoking-cessation patches for when he is ready to give up the habit. And she asked if he is checking his feet daily for cuts, and when his next appointment with the podiatrist is scheduled.

Phyllis Antolick remembers when she first began working with the pharmacy team almost two years ago. “They helped me understand blood sugar, and worked with me on exercise and what to look for on food labels,” she says. Working with the team, Antolick—who hates needles—says she was able to go off of insulin over a year ago.

“[The pharmacy team] helped me empower myself. Together we’ve taken a proactive course at getting my numbers down and getting my life back. They are the backbone of my support system.”

—PATIENT EMILY MCGEE

For patients with complicated issues, visits might be weekly until they become stable. “You make little steps at a time, and then once they see the results and they start feeling better, that’s when they really start listening and doing more,” Yip says.

“They soon realize that we listen and we provide advice based on their needs and wants, and they appreciate that,” she says. “That’s why they keep coming back.”
The Case for Expanding the Pharmacist’s Role in the U.S. Healthcare System

1 in 4 Americans (nearly 75 million people) lack sufficient access to primary care.

45% of Americans suffer with chronic diseases.

Chronic diseases account for:

- 76% of all physician visits
- 81% of all hospital admissions
- 91% of all prescriptions

Poor prescription adherence costs the U.S. an estimated $290 billion per year.

By 2020, the nation will have 91,500 fewer primary care providers than needed to meet the population’s needs.*

The U.S. has only 2.6 doctors per 1,000 people and the numbers of primary care providers continue to decline.

Nearly 50% of patients fail to adhere to their prescribed treatment regime.

25M to 30M

The Affordable Care Act covers an additional 25 million to 30 million patients — increasing demand even more.

*The Association of American Medical Colleges

Source: Leonard D. Schaeffer Center for Health Policy and Economics
The USC School of Pharmacy is committed to expanding student opportunities, advancing the profession and improving people’s health—not only nationally but also around the world. Under the direction of Michael Z. Wincor, associate dean of Global Initiatives and Technology, the School’s international outreach efforts are extensive and longstanding. Whether hosting students from abroad on USC’s Health Sciences Campus for intensive research and educational programs or traveling halfway around the globe to provide screenings and health education to communities in need, the USC School of Pharmacy’s influence is far-reaching.
OUTREACH TO GHANA

In May, residents in Gomoa Dago, a village in Ghana, welcomed 13 members of the university’s chapter of the Student National Pharmaceutical Association (SNPhA). But this was no summer vacation—the students came to work and learn. They conducted health fairs and screenings for high blood pressure and diabetes, along with providing HIV/AIDS information and testing. They also offered body-fat analysis and cholesterol monitoring. Bringing their own supplies, the students coordinated a slate of education, counseling, and caregiving efforts with local health professionals.

The pharmacy students delivered these services to severely underserved rural areas throughout the West African nation, including two fishing villages and a farming community. The students also partnered with local clinics to ensure proper followup care.

In Anomabo, they visited the local chief and council. The students then volunteered at the town’s clinic, where they were paired with local healthcare providers.

Ruth Awosika, PharmD ’12, and a past president of the USC SNPhA, served as a preceptor to the students during the trip. “The biggest barriers to better health in Ghana are lack of education and sanitation,” she says.

“The students went to schools, orphanages, town halls and youth crisis homes to share facts about hygiene, immunization, poison prevention and sexually transmitted diseases—information that people can use to improve their lives.”

In addition to the Ghana effort, students in the chapter travel quarterly to Tijuana, Mexico, in collaboration with Healing Hearts Across Borders. Ten pharmacy students and one pharmacist visit Tijuana clinics as part of an interdisciplinary team providing much-needed services to vulnerable populations.

USC SNPhA students were among those honored at the Student National Pharmaceutical Association national conference in Arlington, Virginia, in July. They were recognized with scholarships honoring proactive leadership addressing pressing health issues locally and around the world. At the conference, chapter President Renata Ahegbebu received the Target National Leadership Scholarship. Vice President Victoria Schells garnered the Walgreens–SNPhA Diversity Advancement Scholarship. The chapter was also recognized with second place in the Walgreens HIV/AIDS Health Outcomes Award.
The USC School of Pharmacy hosted four undergraduate students from Mexico this past summer as part of the U.S.-Mexico Commission for Education and Cultural Exchange (COMEXUS). The commission administers the Fulbright-Garcia Robles Scholarship Program and aims to increase and enhance academic exchange between the two countries.

Their program culminated with the COMEXUS students presenting their research to an audience that included USC students and faculty, as well as visiting students from Japanese and Korean universities. The global reach extended even further as a visiting scholar from China mentored one of the Mexican presenters throughout the summer.

Mariana Ponce de León Rodríguez worked with visiting scholar Zhigang Liu in the laboratory of Professor Enrique Cadenas, the Charles Krown/Pharmacy Alumni Professor in Pharmaceutical Sciences. Rodríguez, an undergraduate at the Universidad Autónoma de Guadalajara, studied the effects of lipoic acid on various types of diets, examining its effect on synapse elasticity in the brain, which impacts learning and memory.

“I was able to learn a great deal in a short time on the effect of obesity and metabolic syndrome on brain function,” says Rodríguez. She presented her research to students and faculty after returning to Guadalajara.

Karen Zamora Hernández, a student at the Universidad La Salle in Mexico City, was assigned to the laboratory of Associate Professor Paul Beringer, whose research focuses on therapeutic approaches to cystic fibrosis. The team investigated the potential of the peptide RTD-1 as a drug to combat the effects of the lung-damaging disease.

Ana Aurora Dorantes Reyes was mentored by Associate Professor Julio Camarero.

“"We are part of a binational effort that aims to bring 100,000 Mexican students to the U.S. over the next four years."”
—CLAUDIA ARRUÑADA, COMEXUS COORDINATOR

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Ana Aurora Dorantes Reyes, who also attends the Universidad La Salle, performed her research project under the mentorship of Associate Professor Julio Camarero.
Program participant Azucena González Gómez engaged in a computational chemistry project under the mentorship of Associate Professor Ian Haworth. Gómez’s project explored RNA aptamers, which bind to target molecules and have broad potential for future diagnostic and therapeutic compounds.

“I will continue to work on this project with Dr. Haworth through distance collaboration when I return to school in Mexico,” says Gómez, a student at the Instituto Tecnológico y de Estudios Superiores de Monterrey who hopes to become a neuroscientist. “My brother has multiple sclerosis, and someday I hope to find a cure or treatment for it.”

According to Claudia Arruñada, a coordinator at COMEXUS who visited the students while at USC, the summer exchange helps young academics develop their potential as possible future Fulbright Fellows pursuing graduate programs at U.S. universities. “We are part of the binational effort that aims to bring 100,000 Mexican students to the U.S. over the next four years,” she explains.

“Our faculty were very impressed with the visiting students and their work,” says Wincor. “We look forward to continuing this relationship in the future.”

AROUND THE WORLD
Following are a few other examples of the USC School of Pharmacy’s global reach during spring and summer 2014:

> Ten student visitors from Chinese University of Hong Kong participated in the two-week Spring Program, which focused on clinical pharmacy and therapeutics;

> Two students from the Graduate Institute of Clinical Pharmacy at National Taiwan University attended the licensure examination review and visited safety-net clinics in Los Angeles;

> The four-week Taiwan Summer Program brought 45 students from five Taiwanese schools, along with two faculty members, to USC to benefit from the School of Pharmacy’s expertise in regulatory science, clinical pharmacy and therapeutics;

> The School’s International Student Summer Programs attracted 46 students and five faculty members from schools in Japan and Korea for two-week sessions on clinical pharmacy and therapeutics;

> Two students from Trinity College Dublin and two from Université d’Auvergne Pharmacie were placed in USC School of Pharmacy laboratories for summer research projects; and

> The Korean Pharmacists Association and Kumamoto University in Japan each led student groups on visits to the USC School of Pharmacy.
Herbert Gift Launches Biles Center

Allergan Chairman Emeritus and USC Life Trustee Gavin Herbert and his wife, Ninetta, have given $1 million to launch the Margaret and John Biles Leadership Center and the USC John Biles Speaker Series on Leadership at the USC School of Pharmacy. The gift honors the dean emeritus, who died this past summer, and his wife, Margaret. Biles led the USC School of Pharmacy from 1968 to 1995.

The Margaret and John Biles Leadership Center will bring together representatives from all constituencies involved in healthcare—from providers to payers to policymakers—to improve policy decisions through annual conferences and speaker series that ensure fair dialogue of all key concerns. The center, which aims for global impact, will attract influential voices from the public and private sectors to address pressing health-related concerns.

Uniquely, this center will cross programmatic boundaries, giving all of the School’s students (PharmD, PhD, MS) the opportunity to develop leadership and entrepreneurial skills applicable to their areas of study. As John Biles advanced both the School and the pharmacy profession during his years as dean, the center will further promote the School’s leadership position in shaping the pharmaceutical profession as healthcare evolves.

The center is expected to include the expertise of leaders such as Leonard D. Schaeffer, founding chairman and CEO of WellPoint, Judge Robert Maclay Widney Chair at USC, USC trustee and benefactor of the USC Leonard D. Schaeffer Center for Health Policy and Economics; Kermit Crawford, executive vice president of the pharmacy, health and wellness division for Walgreens through the end of the year, and effective January 1, executive in residence and senior adviser to the dean of the USC School of Pharmacy; Scott Evans, CEO of Keck Hospital of USC and USC Norris Cancer Hospital, and associate dean of the USC School of Pharmacy; and Gavin Herbert himself.

“The potential success of this unique center is unlimited,” says Dean R. Pete Vanderveen. “The visionary talent from which it will draw represents the ‘best of the best,’ and their participation in the center’s development and activities will underscore the School’s national leadership position for decades to come.”

The USC John Biles Speaker Series on Leadership will feature thought leaders from industry, healthcare practice, policymaking and academia whose work pushes boundaries and breaks new ground in areas including regulatory science, pharmacoconomics, innovations in treatment, medication management, hospital discharge planning, international travel medicine, personalized medicine, pharmacy practice in safety-net clinics, improving health policies and integrating technology into the pharmacy field to support medication adherence.

Dean Emeritus Biles is considered a foundational pillar of the School and how pharmacy students are now educated across the country. He led the national transformation of pharmacist training by incorporating clinical clerkships, similar to those of medical students, into the curriculum. Under his leadership, the School moved from the University Park Campus to its current location on the Health Sciences Campus, giving students full access to all the medical facilities of the university. This provided students with the opportunity to develop as pivotal members of the healthcare team.

He also launched the School’s pharmacoconomics program, which has grown as a vital partner in the Leonard D. Schaeffer Center for Health Policy and Economics, ranked among the nation’s top health policy programs.

Like Biles, Gavin Herbert has had a powerful influence on the School throughout his more than six-decade involvement. He is chairman emeritus of the School’s Board of Councilors and has provided support to establish the Gavin S. Herbert Professorship in Pharmaceutical Sciences, the Herbert Hall of Administration in the Pharmaceutical Sciences Center, the John A. Biles Professorship in Pharmaceutical Sciences and the Allergan Fellowship Program. Herbert, who is founder and chairman emeritus of Allergan, has served on the USC Board of Trustees since 1974.

“Ninetta and I feel privileged to be able to name this center in honor of John and Margaret,” says Herbert. “It is appropriate that the leadership center in the School that John loved and dedicated so much of his career to will forever bear his name.”

The Herberts’ gift supports the Campaign for the University of Southern California, a multiyear effort that seeks to raise $6 billion or more in private philanthropy to advance USC’s academic priorities and expand its positive impact on the community and world. Three years after its launch, the campaign has raised more than $3.7 billion.
As personalized medicine becomes ever more crucial to modern healthcare, drug compounding is an increasingly pivotal skill in the pharmacy profession. To aid the USC School of Pharmacy in maintaining state-of-the-art facilities for teaching this expertise, Walgreens has given $250,000 to completely renovate and augment the School’s compounding pharmacy lab suite.

The new Walgreens Teaching Center will establish a multipurpose environment for compounding training and other pharmacy education. Located in the USC Center for Health Professions on the USC Health Sciences Campus, the facilities are scheduled for completion this year. When not in use by students, the center will help bring working pharmacists up to speed in this key competence.

“As the role of the pharmacist expands through Senate Bill 493 and other clinical programs, Walgreens is excited to collaborate with the USC School of Pharmacy on multiple fronts that support community pharmacists as healthcare providers,” says Paul Huynh, Walgreens district pharmacy supervisor.

SB 493 is the California legislation signed into law in October 2013 that recognizes the role of pharmacists as healthcare providers,” says Paul Huynh, Walgreens district pharmacy supervisor.

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SB 493 is the California legislation signed into law in October 2013 that recognizes the role of pharmacists as healthcare providers.

The gift is the latest from the pharmacy chain leader, which has a longstanding history of supporting scholarships, student organizations and programmatic advances at the School.

“We are honored by the support that Walgreens has provided to our students,” says School of Pharmacy Dean R. Pete Vanderveen. “We greatly value our strong relationship with Walgreens and its innovative approach to providing the best possible pharmaceutical care to patients.”
Blake Earns Widney Alumni House Award

Roslyn Ellison Blake, PharmD ’92, received the Widney Alumni House Award at the Volunteer Recognition Dinner hosted by the USC Alumni Association. A member of the School of Pharmacy’s Board of Councilors, Blake and her husband, Bob, are active supporters of the School. The couple—whose companies include Bob Blake & Associates and MB Ellison, Inc.—established the Roslyn Ellison Blake Diversity Scholarship for pharmacy students, among other gifts of mentorship and philanthropy to benefit the School.

“USC gave me excellence. ... I remember being one of only a few African-Americans while in pharmacy school—it all came together for me. This is a place where my story and our support can really help someone else.” — ROSLYN ELLISON BLAKE, PharmD ’92

ALUMNI UPDATES

Lawrence Dolph, PharmD ’83, was appointed regional manager in Northern California for Comprehensive Pharmacy Services.

Janice Feinberg, PharmD ’73, JD, received the 2014 Advancing the Public Understanding of Science & Technology Award from the Chicago Council on Science & Technology.

Mark Henschke, PharmD ’83, received a Top Ten Doctor (Internist Specialist) in Your Neighborhood Award from Vitals; was selected by Consumers’ Research Council of America as one of America’s Top Physicians and is being listed in its 2014 Guide to America’s Top Physicians; and was reappointed to a three-year designation as clinical assistant professor of internal medicine at the University of New England College of Osteopathic Medicine.

Jason Lebowitz, PharmD ’12, has been named senior sales consultant for MedMined in Birmingham, Alabama. MedMined is owned by San Diego–based CareFusion.

Alice Marlis, PharmD ’74, continues her work as a consulting pharmacist. On the side, she harbors a secret life as a screenwriter and fiction writer. Her rags-to-riches romantic comedy Rags recently was a Diamond Award winner for comedy in the Filmmakers International Screenwriting Competition. She says a future literary work will feature a pharmacist as the central character. She and her husband established the Alice Marlis Noble and Randolph Noble Endowed Scholarship at the School.

Robert Popovian, MS ’96, PharmD ’03, senior director of U.S. government relations at Pfizer Pharmaceuticals, authors a monthly column for Morning Consult.

James Roache, PharmD ’70, received the 2014 Circle of Care Award from CalOptima.

Stephen Sloan, PharmD ’74, retired as regional vice president for the West Region of Comprehensive Pharmacy Services.

IN MEMORIAM

Captain Walter F. Mazzone ’48 died at age 96 in August 2014. He won the Silver Star, among other honors, for his legendary service in the U.S. Navy. He was instrumental in the Sealab project, which tested human endurance in deep waters—conducting the first tests on himself. During World War II, his efforts helped save 40 Americans rescued from the Philippines.

Paul Watari, PharmD ’96, passed away in July 2014.
PhD Grad Continues Research on Treatment of Alcohol Disorders

Megan Yardley, PhD ’14, won the USC Graduate Research Symposium Health Sciences Competition and was featured by Fox News’ Norfolk, Virginia, affiliate WNIS-AM in June for her research on how drugs commonly used to treat parasites affect brain proteins and how they could be used to treat alcohol intake. While at USC, she studied in the labs of Associate Professor Daryl Davies and the late Professor Ronald Alkana, with research focusing on the use of the drug ivermectin to prevent and treat alcohol disorders.

She continues studying ivermectin in a postdoctoral appointment at the University of California, Los Angeles, where she is working with principal investigator Lara A. Ray, an addiction researcher in the UCLA Department of Psychology who collaborates with Davies. The ongoing research is supported through a dual-Clinical and Translational Science Institute (CTSI) partnership between the Southern California CTSI housed at USC and UCLA’s CTSI. The Southern California CTSI grant to Davies covered preclinical toxicology studies at USC, while the UCLA CTSI grant funds clinical costs for human research participants at UCLA.

Hawaii Continuing Education Program

Some 36 USC alumni and friends obtained 21 hours of pharmacy continuing education credit on the island of Maui in August. Associate Professor Cynthia Lem-Lee Lieu emphasized the role of healthy diet and judicious supplement use to promote healthy living and prevent cancer. She advised attendees to consider Vitamin D supplementation for prevention of Alzheimer’s disease and for better pain control. Professor Julie Dopheide, director of continuing professional development, presented the latest information on autism spectrum disorder, attention deficit hyperactivity disorder and mood disorders in youth while providing an overview of acute care psychiatry and significant drug interactions among psychotropics. Associate Dean Fred G. Weissman discussed key issues in California pharmacy law, including the legislation that requires labeling in a patient’s native language and laws regulating substances of abuse. For information on USC School of Pharmacy continuing education programs, visit pharmacyschool.usc.edu/programs/ce.

ALUMNI SPOTLIGHT

ANGELA NA HYUN LEE, PharmD ’13, received the 2014 Resident/Fellow of Distinction Award from the California Society of Health-System Pharmacists (CSHP). The award is given in recognition of exemplary new practitioners who have made significant contributions to local CSHP chapters. She served as a volunteer and then as communications chair for the South Bay/Long Beach CSHP chapter. Lee completed her pharmacy residency at Veterans Affairs Healthcare System—Long Beach and is currently a fee-basis pharmacist there.
Scott Evans, PharmD ’98, MHA ’12, CEO of Keck Hospital of USC and USC Norris Cancer Hospital, was named Hospital CEO of the Year at the Healthcare Leadership Awards held by the Los Angeles Business Journal. The associate dean of academic medical center programs at the USC School of Pharmacy, Evans was honored along with 15 other healthcare leaders in Los Angeles at the annual ceremony, which recognizes the accomplishments of individuals and organizations that have contributed to improving healthcare delivery in Los Angeles.

“It’s a great honor to be recognized for being part of an organization dedicated to delivering compassionate patient care to those Southern Californians who seek help and hope for their serious healthcare issues,” said Evans. “By honoring me, you honor our entire medical center team—the expert physicians, surgical teams, nurses, administrative staff and everyone who goes beyond exceptional medicine in what they do every day.”

After earning his PharmD at the USC School of Pharmacy, Evans completed postgraduate residency training at the Department of Veterans Affairs and the USC School of Pharmacy. He earned an executive master of health administration from the USC Price School of Public Policy and is working on an EdD in organizational leadership at Pepperdine University.

He joined USC University Hospital—now Keck Hospital—in 2004 as director of pharmacy services and residency program director for the USC School of Pharmacy. Under his direction, the hospital was recognized by the National Patient Safety Congress for a pioneering patient safety project related to telepharmacy services in California.

Evans served as chief operating officer for Keck Hospital of USC and USC Norris Cancer Hospital for five years before being appointed CEO in 2012.
FACULTY UPDATES

James Adams, PhD, presented “Adenostoma Fasciculatum, California Chamise, Chemistry and Use in Skin Conditions” at the International Research Congress on Integrative Medicine and Health in Miami in May, and was featured by Malibu Surfside News in July for his work with Chumash medicine.

Melvin Baron, PharmD, MPA, spoke at the Beverly Hills High School Career Day in April; presented “Evaluation of a Diabetes Educational Fotonovela for Low-Literate Latinos” at the Comics & Medicine Conference in Baltimore in June; was an invited speaker in July at the National Youth Leadership Forum: Explore STEM in Los Angeles; and was an invited speaker in July at the Comics & Medicine Conference in Baltimore in June; was an invited speaker in July at the National Youth Leadership Forum: Explore STEM in Los Angeles; and was an invited speaker in July at the International Research Congress on Integrative Medicine and Health in Miami in May, and was featured by Malibu Surfside News in July for his work with Chumash medicine.

Paul Beringer, PharmD, was awarded a two-year, $119,408 grant from Cystic Fibrosis Research Inc. for the project “Mechanism of Macrocyclic Peptide Regulation of Pseudomonas-Induced Pulmonary Inflammation.”

Kathleen Hill Besinque, PharmD, MSEd, assistant dean of curriculum and assessment, and director of Experiential Programs, presented “Improving Collaboration among AACP Members: Recommendations from the Council of Faculties Consortia and Collaborations Taskforce” and “Interprofessional Care: An Introductory Session on the Roles of Health Professionals” at the 2014 American Association of Colleges of Pharmacy (AACP) Annual Meeting in Grapevine, Texas, in July.

Roberta Diaz Brinton, PhD, R. Pete Vanderveen Chair in Therapeutic Discovery and Development, was quoted by The Washington Post in September about why women are more susceptible to Alzheimer’s disease than men. She also received a one-year, $329,167 planning grant from the National Institutes of Health for “Systems Pharmacology for Predictive Alzheimer’s Therapeutics: SysPharmRx-AD,” which will help her develop a $25 million center.

Julio Camarero, PhD, was awarded a $187,000 grant by Bristol-Myers Squibb for the project “Design of Biologically Active Cyclotides”; gave the invited talk “Disrupting Protein-Protein Interactions Using Cyclotides,” at AMGEN in Thousand Oaks in March; and presented “Novel Peptide Therapeutics: Targeting Intracellular Protein-Protein Interactions with Engineered Cyclotides” at the Constrained Peptides and Macrocycles Drug Discovery meeting in San Diego in April.

Steven Chen, PharmD, Titus Family Department chair and the Hygeia Centennial Chair in Clinical Pharmacy, was featured by the Los Angeles Register in April in an article about how pharmacists who expand beyond their traditional role can help patients control diabetes; was featured on the American Pharmacists Association’s (APhA) CEO Blog in June for his innovative work with underserved patients; and presented “Innovation to Improve Health and Reduce Costs: Two Models” at the 2014 National Health Journalism Fellowship in Los Angeles in July.

Roger Clemens, DrPH, was quoted by Reuters in April about whether or not probiotics can help babies with colic and by WPTF-AM radio in April about the factors affecting the nation’s dietary habits.

Daryl Davies, PhD, presented at the Research Society on Alcoholism’s 37th Annual Scientific Meeting and the International Society for Biomedical Research on Alcoholism’s 17th Congress in Bellevue, Washington, in June; presented “Development of Novel Compounds for the Treatment of Alcohol Use Disorders” at the Tribute to Dr. Ronald Alkana: Recent Progress & Challenges in Drug Discovery & Drug Development for Alcohol Use Disorders in the University Setting symposium, which he also organized and chaired; and presented the invited talk “Translational Research and Drug Discovery in Academia” at the Eshelman School of Pharmacy, in Chapel Hill, North Carolina, in July.

Jason Doctor, PhD, authored the PsychsTalk blog post “Cost-Effectiveness and Patient Choice of PTSD Therapy” in June.

Julie Dopheide, PharmD, presented “Patient Care Delivery and Pharmacist Integration” as part of the Consensus Recommendations Panel at the Ambulatory Care Conference and Summit in Dallas in March; and presented “Improving the Treatment of ADHD” at the APhA Annual Meeting & Exposition in Orlando in March.

Melissa Durham, PharmD, presented “Practicing Evidence-Based Medicine: From IRB Approval to Bench Research” as a panelist in a national webinar for the International Academy of Compounding Pharmacists in April; and presented “Interprofessional Care: An Introductory Session on the Roles of Health Professionals” at the 2014 AACP Annual Meeting, in Grapevine, Texas, in July.
Dana Goldman, PhD, Leonard D. Schaeffer Director’s Chair, authored an op-ed in Forbes in April about balanced healthcare markets; had his discovery that heart patients treated by Medicare spend four times longer in the hospital than comparable private patients cited by The Wall Street Journal in April; participated in the congressional briefing “The Health and Economic Value of Comprehensive Diabetes Management” in July; and had his July article in The American Journal of Managed Care, “Medicaid Prior Authorization Policies and Imprisonment Among Patients with Schizophrenia,” featured on the news website Vox.

Geoffrey Joyce, PhD, was quoted by KPCC-FM radio in June about Los Angeles County being forced to compete with private health insurers as a result of the Affordable Care Act (ACA), and had his July article in The American Journal of Managed Care, “Medicaid Prior Authorization Policies and Imprisonment Among Patients with Schizophrenia,” featured on the news website Vox.

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Grant Lawless, RPh, MD, program director of the Healthcare Decision Analysis Program, was session co-chair at the Association for Value-Based Cancer Care’s fourth annual conference in Los Angeles in May.

Jeffrey McCombs, PhD, director of graduate studies, presented “The Impact of Fibrosis on the Risk of Long-Term Morbidity and Mortality in Chronic Hepatitis C Patients Treated in the Veterans Administration Health Care System” at the International Liver Congress 2014 in London in April.


Edith Mirzaian, PharmD, presented “Think Like a Pharmacist: Applying the New ACC/AHA Cholesterol Guidelines to Clinical Practice” and “MTM: Mastering the Method,” at the California Pharmacists Association’s West Coast Exchange in Palm Desert in April.

Tien Ng, PharmD, presented “New Oral Anticoagulants for Stroke Prevention in Atrial Fibrillation—Which Drug for What Patient?” at Heart Failure 2014: An Update on Therapy in Los Angeles in April.

Frances Richmond, PhD, director of the International Center for Regulatory Science, presented “Positioning Regulatory ‘Science’ in the Academy: Past, Present and Future,” at the University of Kansas School of Pharmacy in April. Richmond and other staff members of the International Center for Regulatory Science—Associate Director Michael Jamieson, DRSc, Associate Director of Consulting Services C. Benson Kuo, PhD, and Educational Liaison Nancy Smerkanich—traveled to China in September to provide instructions on good manufacturing practice and auditing to the Binhai Food and Drug Administration in Tianjin and gave invited lectures to students and faculty at Tianjin University School of Pharmaceutical Science and Technology. Richmond and Kuo also traveled to Taiwan to sign a memorandum of understanding with the Taipei Medical University in Taipei, and visited the Center for Pharmaceutical Regulatory Science at National Cheng Kung University in Tainan.

Kathleen Rodgers, PhD, was awarded a grant from the Leona Helmsley Trust; was accepted to participate in the 2014–2015 cohort of the AACP Academic Research Fellows Program; presented “My Perspectives on Drug Development as an Academic Sponsor” at the Tianjin University School of Pharmaceutical Sciences and Technology in China in May; presented “Use of Protective Arm of the Renin Angiotensin System in Regenerative Medicine” at the Tianjin International Joint Academy of Biomedicine in China in May; presented “Preclinical and Clinical Development of DSC127” at the 13th Annual Wound Healing Science and Industry Symposium 2014 in San Juan, Puerto Rico, in June; and presented “Preclinical and Clinical Development of Angiotensin Peptides for Regenerative Medicine” at the Renin-Angiotensin-Aldosterone System Satellite Meeting 2014, in Cape Town, South Africa, in July.
People with schizophrenia are 22 percent more likely to end up in prison in states with stricter Medicaid policies governing antipsychotic drugs, according to researchers at the USC Leonard D. Schaeffer Center for Health Policy and Economics. The study, published in *The American Journal of Managed Care*, found that states trying to save money by requiring prior authorization for atypical antipsychotics had higher shares of inmates with psychotic symptoms than the national average, even though their mental illness rates were lower overall.

“The media has picked up on how incarcerating the mentally ill raises a range of troubling concerns, from the high cost of incarceration to the inadequate treatment of mentally ill inmates, and the potential for self-inflicted harm,” says Darius Lakdawalla, Quintiles Chair in Pharmaceutical Development and Regulatory Innovation, and the Schaeffer Center’s director of research.

“At the same time, the American public is increasingly worried about untreated mental illness triggering violent behavior in the community.”

Dana Goldman, USC Schaeffer Center director, adds: “This paper demonstrates that our policies around schizophrenia may be penny-wise and pound-foolish. Limiting access to effective therapy about priapism, the medical term for an erection that doesn’t go away, and the importance of timely treatment.

**Neeraj Sood**, PhD, had his study showing that for-profit clinics may be more likely than large public hospitals to prescribe expensive treatments for children with diarrheal illness featured by *JAMA* in April; had the abstract of his article “HIV-Related Social Intolerance and Risky Sexual Behavior in a High HIV Prevalence Environment” featured in *HIV This Month* in May; and was quoted by *Modern Healthcare* in July about the need to find a working alternative to the fee-for-service model.

**Glen Stimmel**, PharmD, presented “Getting a Good Night’s Sleep” at the APhA Annual Meeting & Exposition in Orlando in March, and was quoted by *U.S. News & World Report* in May about priapism, the medical term for an erection that doesn’t go away, and the importance of timely treatment.

**Clay Wang**, PhD, was elected to the USC Academic Senate Executive Board.

**Bradley Williams**, PharmD, received the Extraordinary Engagement Award at the USC Civic Engagement luncheon in April.


Are State Medicaid Policies Imprisoning Schizophrenics?

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Moving Targets Hits Bull’s Eye

More than 200 people attended the USC School of Pharmacy’s 2014 Moving Targets conference, “New Horizons in Anti-Cancer Therapeutics,” in August. The student-run event brought together top experts and an audience from academia, industry and government.

SPEAKERS INCLUDED:

- Fuyu Tamanoi, UCLA, on nanomedicine in targeting and delivery of cancer drugs
- Erkki Ruoslahti, Cancer Center at Sanford-Burnham Medical Research Institute, on the potential of tumor-penetrating peptides
- Mark Davis, Caltech, on nanoparticle cancer therapeutics
- Peter Senter, Seattle Genetics, on antibody drug conjugates for cancer therapy
- Cindy Xia, Takeda Boston, on drug metabolism and pharmacokinetics in anti-cancer drug discovery and development
- Y. John Wang, principal scientist at Genentech, on stability issues of antibody therapeutics for cancer
- Karen Cha, Agensys, a Santa Monica-based biotechnology company, on regulatory issues relating to biologics in cancer treatment

USC School of Pharmacy Assistant Professor Andrew MacKay—adviser for Moving Targets—moderated a panel discussion. Mary Jo Bean of the American Association of Pharmaceutical Scientists (AAPS) was on hand to congratulate the USC AAPS chapter on the successful event.

The program concluded with the Young Investigator Poster Awards and cash prizes to six recipients chosen from a field of 35 student poster entrants. USC School of Pharmacy winners were PhD candidates Anna Naito, Maira Soto and Megan Yardley. Winners from the Keck School of Medicine were Jieli Shen, Shelby Chen and Thomas Schmidt. The program was livestreamed and may be viewed at http://new.livestream.com/uscpharmacyschool/movingtargets2014.

Two PhD Students Win CET Awards

PhD candidates Zoë Fokhman-Wagner and Alick Tan have won Teaching Assistant Fellowships from the USC Center for Excellence in Teaching (CET). Fellows in the program receive mentoring from CET faculty fellows and advanced training in the modern theory and practice of pedagogy while gaining experience in instructional design.

Fokhman-Wagner has served as a TA in courses including pharmaceutics—for which she created a case study on drug interactions—and self-care/non-prescription therapies. She received the Outstanding Teaching Assistant Award for the School of Pharmacy’s Pharmaceutical Sciences program in 2014.

She is president of the USC Pharmacy Graduate Alliance and was one of three students representing the School at the 2014 Globalization of Pharmaceuticals Education Network conference in Helsinki.

Tan has assisted in teaching a variety of classes at the School of Pharmacy, including pharmacy literature, pharmacokinetics and public health. He received the School’s Outstanding Teaching Assistant Award for the Clinical and Experimental Therapeutics program in 2014 and has mentored students in the USC Science, Technology and Research (STAR) program at Bravo Medical Magnet High School.
Fellowships for Three Promising PhD Candidates

The American Foundation for Pharmaceutical Education (AFPE) has awarded predoctoral fellowships to three PhD candidates at the School of Pharmacy. Christine Solinsky, Anna Naito and John Gallagher received the highly competitive fellowships, which go to students who have the potential to become leaders in the pharmaceutical profession.

Solinsky, a student in Professor Roberta Diaz Brinton’s lab, is the first PhD student in the School’s Clinical and Experimental Therapeutics program to win the fellowship.

“With this fellowship, I will continue my doctoral research project through which I aim to develop induced pluripotent stem cell—or adult stem cell—models for the Jalisco and Colombian familial Alzheimer’s disease mutations,” says Solinsky. “I will also be evaluating the efficacy and mitochondrial mechanisms of the investigational therapeutic allopregnanolone in rescuing the compromised phenotypes associated with Alzheimer’s.”

Solinsky, who has also received a USC PhD Provost Fellowship, adds that her ultimate career objective is to work in regenerative therapeutic development related to Alzheimer’s disease.

Naito’s research focuses on neuropharmacology, addiction, reward, motivation, and identifying molecular mechanisms and drug targets. Specifically, she is working on developing “ultra-sensitive ethanol receptors to understand the underlying causes and targets of alcohol reward and addiction.”

She adds: “The idea that we can change so many people’s lives by defining the molecular targets of reward and addiction is inspiring. By understanding the mechanism that drives alcoholism, we can reduce the 100,000 annual deaths in the U.S. and lower the annual $235 billion in healthcare costs associated with alcoholism.”

Naito, whose mentor was the late Associate Dean Ronald Alkana, is pursuing a PhD concurrently with a master’s degree in regulatory science and hopes to eventually lead clinical development teams in the pharmaceutical industry.

Gallagher, a student in Associate Professor Clay Wang’s lab, focuses on studying natural products that are of interest as potential pharmaceuticals.

“With this fellowship, I will make novel derivatives of fungal metabolites to test them against protein complexes that are involved in the acquisition of a more malignant phenotype, which is seen when tumors become deprived of oxygen,” he says. “Additionally, the study and production of these metabolites will give further insight into the biosynthetic processes that are responsible for making these metabolites.”

Gallagher is also the recipient of a Russell Endowed Fellowship from USC.

Pharmacy Student Success at Managed Care Meeting

Pharmacy students Shannon Dervin, Kevin Hong, Karen Kowalski and Aidan Metzinger, along with adviser Ed Lieskovsk, PharmD ’85, MBA, earned second place in the 14th Annual National Student Pharmacist Pharmacy & Therapeutic Competition, out of 34 teams competing. The top eight teams gave live presentations at the competition, held in April at the Academy of Managed Care Pharmacy Foundation’s 26th Annual Meeting & Expo in Tampa, Florida. The team’s prowess earned a $1,500 scholarship for each student member.

STUDENT UPDATES

Melissa Agnello, PhD candidate, has received the 2014-15 Krown Fellowship.

Justin McGinnis, PhD candidate, authored the article “Scapegoating the Pharmaceutical Industry Will Not Solve the Healthcare Crisis and Might Even Make It Worse,” which was published in Forbes in July.

Christina Xie, PharmD candidate, received a 2014 Student Leadership Award from the California Society of Health-System Pharmacists.

Ni Zeng, PhD, postdoctoral student, received a $25,000 USC Provost’s Postdoctoral Scholar Research Grant.
PhD Candidate Earns NIH Fellowship

PhD candidate Tim Bensman, PharmD’11, has been awarded a two-year, $82,000 fellowship from the National Institutes of Health (NIH) for his project “Theta Defensins for Targeting the Metalloproteinase System in CF Airway Disease.” He is the first student in the School’s Clinical and Experimental Therapeutics program to receive the honor. His faculty mentors are Associate Professor Paul Beringer and Wei-Chiang Shen, the John Biles Professor in Pharmaceutical Sciences. Also involved in his training are Associate Professor Kathleen Rodgers and Professor Michael Selsted of the Keck School of Medicine.

“I chose the PhD in Clinical and Experimental Therapeutics because it afforded me the opportunity to do biomedical research in both clinical and foundational science,” explains Bensman. “Despite current standards of practice, the daily limitations in drug therapy and disease management seen in the clinic raise important questions as to which hypotheses and therapeutics are experimentally tested in the lab. We hope this approach efficiently translates into new disease treatments and care.”

Bensman was one of the first USC students to pursue the dual PhD/PharmD degree program. His numerous previous awards include a $10,000 scholarship from the Medco Foundation, administered by the American Association of Colleges of Pharmacy; the Best Student Poster Award and the Kelly Award from the American College of Clinical Pharmacy; and an NIH Training Award. He has also been invited to give podium presentations twice at the North American Cystic Fibrosis Conference.

His research focuses on the discovery of novel drugs, as well as new uses for existing medications, to combat chronic inflammation in chronic obstructive pulmonary disease and cystic fibrosis. “There is a real need for new and optimized pharmacotherapy,” he adds.

Students Provide Health Education with Award Funding

USC School of Pharmacy students Halema Buzayan and Karen Tan have received prestigious Los Angeles Albert Schweitzer Fellowships in support of their community outreach. They are among only 15 students from across Los Angeles this year to receive this honor.

Tan, a third-year pharmacy student, will use the fellowship funds to promote safe medication usage within the geriatric Chinese population. Her adviser on the project is Titus Family Department Chair Steven Chen, the Hygeia Centennial Chair in Clinical Pharmacy.

“My goals are to improve the quality and safety of the medication therapy for seniors and to empower them to take control of their health through seminars on chronic diseases and appropriate medication use,” says Tan.

Buzayan, a fourth-year pharmacy student, is using her fellowship funds to increase awareness and minimize the risk of osteoporosis in Muslim-American women. Chen serves as her adviser as well.

“I will be conducting osteoporosis workshops and one-on-one counseling sessions with members of the Islamic Center of Irvine,” she says.

The Los Angeles Schweitzer Fellows Program is one of 13 Schweitzer program sites across the U.S. dedicated to developing a pipeline of emerging professionals who enter the workforce with the skills and commitment necessary to address unmet health needs. Seven of the area’s 2014 Schweitzer Fellows are in programs at USC.

Halema Buzayan and Karen Tan

Students Provide Health Education with Award Funding

PhD Candidate Earns NIH Fellowship
The late Bob Hahn was not an alumnus of the School, nor was he a pharmacist. But he gave generously to scores of students over the years, creating his own mini Trojan Family and fostering an invaluable connection with the students he supported. Through his estate, he established the K. Robert and Mary C. Hahn Endowed Scholarship to ensure ongoing support for the School and our students in perpetuity. To learn how to design a scholarship gift that fits into your estate planning, contact Joann Tusia at tusia@usc.edu or 323-442-0162.

pharmacist.usc.edu/giving/making-a-gift

“Bob Hahn redefined what scholarship means to me. He goes far beyond the tremendous financial support that he provides to also include personal interest and accountability. Bob always wanted to make sure of our success.”

DAVID BRUHN, PharmD/MBA ’01, speaking at a Scholarship Luncheon in 2010

Photo above: At the Scholarship Luncheon in 2010, Bob Hahn (center) was feted by some of his scholarship recipients and by Dean R. Pete Vanderveen (third from left). The pictured Hahn Scholars are David Bruhn, PharmD/MBA ’01, Winnie Chan, PharmD/MBA ’07, Paul Vasquez, PharmD/MBA ’10, Raffi Svadjian, PharmD/MBA ’97, and Emmanuel Akinwole, PharmD ’12.
**USC School of Pharmacy**

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**save the date…**

**JANUARY 23–25, 2015**

20th Annual QSAD Centurion Winter Retreat
*A Journey through the Desert on Highway SB 493*
Rancho Las Palmas Resort and Spa
Palm Springs, California
Information: 323-442-1738 or stanovic@usc.edu

**APRIL 9–12, 2015**

California Pharmacists Association Conference
West Coast Pharmacy Exchange
USC School of Pharmacy Alumni Breakfast
Anaheim, California
Information: 323-442-1381 or mlsantan@usc.edu

**MAY 9, 2015**

Alumni/Senior Awards Banquet
Town & Gown
University Park Campus
Information: 323-442-1738 or stanovic@usc.edu

**MAY 15, 2015**

USC School of Pharmacy Commencement
Health Sciences Campus
Information: 323-442-1738 or stanovic@usc.edu

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Above: Dean R. Pete Vanderveen and Dean Jack Knott (left) of the USC Price School of Public Policy take part in the Ice Bucket Challenge to benefit the ALS Association. The duo are being doused by willing faculty Cherry Short and Jeff McCombs in front of the USC Leonard D. Schaeffer Center for Health Policy and Economics’ new home in Dr. Verna and Peter Dauterive Hall.