LANDMARK LEGISLATION:
THE FUTURE OF THE
PHARMACY PROFESSION
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On the cover: USC School of Pharmacy student leaders

To the right: PharmD student Dorin Natan conducts a patient screening at the USC Festival of Books Health Pavilion.

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 partnership 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.

Rx 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.
IN THIS ISSUE

Landmark Legislation

How California Senate Bill 493 and the implementation of the Affordable Care Act are changing the future of the profession, with pharmacists performing a wider range of duties than ever before.
This is an exciting time for the pharmacy profession. Implementation of the Patient Protection and Affordable Care Act is shedding new light on the benefits of having pharmacists on the healthcare team, and, here in California, Senate Bill 493—which gives pharmacists provider status—is breaking new ground for our profession.

The USC School of Pharmacy has helped pave the way for the future of our field, with innovative curricular advances, novel laboratory investigations with clinical application, and groundbreaking work in our safety-net clinics. The School is only as good as our faculty, students and alumni, and it is through the generosity of our supporters that we continue to attract the best and brightest, and offer the resources they need to succeed.

Among our most vital and dedicated supporters are our distinguished Board of Councilors. Giving freely of their energy, expertise and funds, these philanthropic leaders help us realize the ambitious aim of ensuring that every aspect of the profession works for the maximum benefit of society—now and for generations to come. In particular, I want to thank Board of Councilors Chair William Heeres and Vice Chair Raymond Poon, who work tirelessly on behalf of the School of Pharmacy.

In addition, it gives me great pleasure to welcome the Board’s newest members: Gustavus A. Aranda, Jr., PharmD ’04, MS ’05, Bristol-Myers Squibb; Diana Hendel, PharmD, Long Beach Memorial Medical Center, Community Hospital Long Beach and Miller Children’s Hospital Long Beach; Sang Ju Lee, RPh, Lee’s Drug and Gifts; and Richard Spivey, PharmD, PhD, Allergan Inc. I also want to recognize I.R. Patel, RPh, of Bi-Rite Quality Pharmacy, who joined the Board in fall 2012 and recently received the National Association of Retail Druggists Ownership Award for embracing entrepreneurial spirit through promotion of and demonstrated excellence in community pharmacy ownership.

That entrepreneurial spirit permeates all of our Board of Councilors members, as well as our faculty and students, who continuously look for innovative prescriptions for the future of the profession and for the betterment of the world. As dean of this amazing School, I thank our supporters, whose vision and generosity steer us toward excellence and create a legacy for future generations.

R. Pete Vanderveen, PhD, RPh
Dean
John Stauffer Decanal Chair in Pharmaceutical Sciences
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School Launches Master’s in Healthcare Decision Analysis

The USC School of Pharmacy’s new Master of Science in Healthcare Decision Analysis (HCDA) will offer the skills needed at the intersection of business intelligence, healthcare analytics and applied health policy. The program also will help graduates navigate an industry made ever more challenging by changing regulations, global competition and technological advances.

“This program is definitely unique and needed,” says Cyrus Arman, principal and head of West Coast operations for Deallus Consulting. “I am not aware of any other school that has combined these particular areas.”

The intensive, interdisciplinary program is the first to unite such areas as healthcare economics, data analysis, international market access, product pricing, reimbursement, insurance operations and competitive business practices. Graduates will be experts in this emerging field, with preparation to meet the needs of pharmaceutical, biotech, specialty pharmacy, diagnostics, manufacturing and related industries nationally and globally.

“Having knowledge of access and reimbursement is just a requirement now,” notes Mike Ryan, vice president and general manager for U.S. Value and Access at Amgen. “Comparative effectiveness research has bloomed as a science in Europe and Australia, and now we’re starting to see it here in the U.S. in a big way. At the same time, the U.S. is exporting things like patient cost sharing and co-pays, never heard of in Europe until the last few years. The curriculum of USC’s new master’s program is right on track with these changes in the industry.”

The four-semester program can be completed in as little as 15 months. Courses can be taken in any combination—on campus and/or online in either real time or on demand. Students can enroll in just one or two classes, which could count toward their degree if they later choose to pursue it. The first offerings—Competitive Intelligence and Pricing, Comparative International Healthcare Systems, and Healthcare Literature Analysis and Applications—will begin in spring 2014.

“Students will gain practical skills they can use at work the next morning,” says Grant Lawless, program director and a former Amgen executive. “The program embeds communication skills, team leadership and mentoring abilities—skills employers are looking for—into every course,” adds Lawless. “It also offers tremendous networking opportunities.”

For admission and other information, email HCDA@usc.edu, call 323.442.1276 or visit http://HCDA.usc.edu.

Mariam Eghbal-Ahmadi, director of market analytics and business intelligence for xIQ Group, says she wishes the program had been around when she was making the transition from the research side to the business side.

“It’s ambitious to say any academic program can give you a working knowledge of all areas, but this program comes close,” she says. “HCDA gives a solid introduction and a baseline into all the different key functions within pharma.”

Faculty will come from the USC School of Pharmacy, the USC Leonard D. Schaeffer Center for Health Policy and Economics, and the USC International Center for Regulatory Science, with sessions featuring current leaders from both the public and private sectors who will offer students vital real-world information and perspectives. The curriculum will focus on practical education, emphasizing team projects and case studies.

The highly flexible program can be completed in 15 months in this emerging field, with preparation to meet the needs of pharmaceutical, biotech, specialty pharmacy, diagnostics, manufacturing and related industries nationally and globally.

“The program embeds communication skills, team leadership and mentoring abilities—skills employers are looking for—into every course,” adds Lawless. “It also offers tremendous networking opportunities.”

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Dean R. Pete Vanderveen received the 2013 Outstanding Dean Award from the American Pharmacists Association (APhA) at the organization’s annual meeting in Los Angeles. The award recognizes Vanderveen’s long-term dedication to expanding the role of the pharmacist in safety-net clinics as well as his launch of the Diversity Initiative at USC, aimed at increasing minority representation in the pharmacy field.

“This initiative shows the dean’s genuine desire to advocate for the minority population in Los Angeles by spreading awareness among Latinos and African-Americans about the profession of pharmacy,” says a student who nominated Vanderveen for the award.

The APhA established the Outstanding Dean Award in 2004 to recognize significant contributions in promoting the welfare of student pharmacists through community service, leadership and professional activities.

“Dr. Chen is an extraordinarily unique leader whose energy and passion make his interactions with patients, colleagues and students inspiring.”

—Dean Pete Vanderveen

Steven Chen, the Hygeia Centennial Chair in Clinical Pharmacy, was honored with the 2013 Pinnacle Award for Individual Career Achievement by the American Pharmacists Association Foundation. This marks USC’s third Pinnacle Award—the only pharmacy school nationwide to be so distinguished.

The Individual Career Achievement Award recognizes exceptional leadership in enhancing healthcare quality and medication use. Chen is renowned for promoting clinical pharmacy services—especially for underserved populations—as a way to improve patient outcomes and save costs. He currently oversees the School’s safety-net clinic work, including six that are part of a $12 million grant from the Center for Medicare and Medicaid Innovation studying this model of care and its benefits.

Dr. Chen with his wife, Sophia Chen, PharmD '91, at the awards ceremony

“Dr. Chen is an extraordinarily unique leader whose energy and passion make his interactions with patients, colleagues and students inspiring,” says Dean R. Pete Vanderveen. “He personifies the pinnacle to which our profession strives—providing optimal care for patients in an efficient manner.”

Chen co-chaired the Health Resources Administration’s Patient Safety and Clinical Pharmacy Services Collaborative and developed a medication intervention and safety measurement tool adopted by pharmacy teams in clinics across the country. He led the development of a resource guide to assist California pharmacists in initiating advanced medication management programs while chairing the California Society of Health-System Pharmacists Medication Therapy Task Force. At USC, he directs the pharmacy practice residency program in primary care, overseeing residents in safety-net clinics throughout the region.
Putting the Brakes on Cancer

USC School of Pharmacy Assistant Professor Bogdan Olenyuk and his research group, in collaboration with New York University chemists led by Paramjit Arora, have created a synthetic molecule that could potentially put the brakes on liver cancer. The molecule, a protein domain mimetic called HBS 1, appears to arrest tumor growth by disrupting oncogenic signaling between proteins—without any toxicity or negative impact.

The team’s studies, published in September in the Proceedings of the National Academy of Sciences, represent a new frontier in cancer research—especially since this approach differs from the usual search for small molecules that target cellular kinases. The method also holds promise for patients with cardiovascular diseases and diabetic complications.

“There is an urgent need to accelerate the discovery of mechanism-based anticancer therapeutics,” says Swati Kushal, a postdoctoral scholar at the USC School of Pharmacy and lead co-author on the paper.

The synthetic molecule HBS 1 is based on a chemically stabilized protein that mimics the molecule on which it has been modeled and shows outstanding potential for tumor suppression. This compound was specifically designed to interrupt the cell signaling that promotes the growth of cancer cells. It did not show any signs of toxicity or negative impact in the test host.

Olenyuk and his collaborators will next initiate the project’s translational aspects, testing the compound in advanced tumor models before proceeding to clinical trials.

Funding for the research came from the National Science Foundation and the National Institutes of Health.
When the only thing to fear is fear itself—and yet anxiety still persists—a missing brain protein might be to blame, according to research from a team led by Jean Shih, University Professor and the Boyd P. and Elsie D. Welin Professor of Pharmacology and Pharmaceutical Sciences. Shih and her team examined mice without the enzymes monoamine oxidase A and B (MAO-A and MAO-B), which sit next to each other in both human and mouse genetic codes.

Their study, which appears in the July 15 Proceedings of the National Academy of Sciences, compares mice without MAO-A or MAO-B to wild mice. Researchers placed all the mice in a new, neutral environment and then administered a mild electric shock. While every mouse showed fear the next time it was tested in the same environment, the mice lacking the enzymes displayed greater terror. The wild mice continued to explore new environments freely after the trauma, but mice without the enzymes generalized their phobia, applying it to places without negative stimuli.

“These mice may serve as an interesting model to develop interventions to these neuropsychiatric disorders,” says Shih, whose previous research uncovered an association between deficiencies of these enzymes in humans and developmental disabilities along the autism spectrum.

Her lab was the first to successfully clone human MAO-A and MAO-B genes, pioneering research that helped lead to the current advances.
Robert Diaz Brinton, R. Pete Vanderveen Chair in Therapeutic Discovery and Development, has received $2.4 million in new funding from the National Institutes of Health (NIH) for the first clinical trial to evaluate the effectiveness of Allopregnanolone (Allo) in treating Alzheimer’s disease. Lon Schneider of the Keck School of Medicine of USC serves as the study’s co-principal investigator.

Both aging and Alzheimer’s disease are characterized by declines in the brain and body’s abilities to self-renew and repair, but, according to Brinton, the capacity for regeneration still exists—although at a decreased level. Allo, a neurosteroid found in the brain and bloodstream, may be able to spark that regeneration.

“Our research has shown that Allo activates neural stem cells in the brain to generate new nerve cells and to restore cognitive function while also reducing the pathology of Alzheimer’s,” explains Brinton. “Allo is the first regenerative therapeutic for Alzheimer’s that has the potential to regenerate nerve cells and the pathways necessary for memory.”

The funding was awarded through the National Institute on Aging (NIA), the NIH’s lead agency for Alzheimer’s research. The NIA has supported Brinton’s research over many years, and this new funding helps bring Brinton and Schneider’s research to a human Phase 1 trial. Their study is among the first to be developed with direction from the 2012 NIH “Alzheimer’s Disease Research Summit: Path to Treatment and Prevention.”

Earlier this year, Brinton presented her research on Allo at the 2013 Alzheimer’s Association International Conference in Boston.

In addition to the NIA funding, Brinton’s work is supported by the Kenneth T. and Eileen L. Norris Foundation, the Whittier Foundation and the Alzheimer’s Drug Discovery Foundation.

“Allo is the first regenerative therapeutic for Alzheimer’s that has the potential to regenerate nerve cells and the pathways necessary for memory.”
Camarero Shows Cyclotides’ Potential for Drug Development

Associate Professor Julio A. Camarero has produced a natural cyclotide that contains unnatural amino acids inside a living cell. It promises new pathways to better treatments and earlier detection of diseases.

“It’s not unlike the Lotto. The more tickets you buy, the more likely you’ll have a winner.”

Cyclotides are plant proteins that can be used as substitutes for antibodies that are unstable and more difficult to make. With colleagues from USC and the Salk Institute for Biological Studies, Camarero developed a novel process using cyclotides for in-cell molecular evolution strategies to evaluate millions of compounds and identify those with the best potential to bind and inhibit targets.

“This provides a fast way to interrogate huge numbers of cells and to ascertain which ones are talking to our target,” says Camarero, whose research is supported by the National Institutes of Health, the Department of Defense and Bristol-Myers Squibb.

Lakdawalla Presents Health Reform Alternatives

Darius Lakdawalla, Quintiles Chair in Pharmaceutical Development and Regulatory Innovation, served as lead author of an alternative vision of healthcare reform. The report, funded by the American Enterprise Institute’s National Research Initiative, offers suggestions for achieving universal coverage and maintaining quality, while restraining cost growth. Lakdawalla assembled a team of health policy experts from institutions such as Stanford and Harvard as well as USC—including Dana Goldman, director of the USC Leonard D. Schaeffer Center for Health Policy and Economics.

Although the plan is a response to the Patient Protection and Affordable Care Act (ACA), Lakdawalla says: “In many ways, the ACA has been a distraction, because people think that all of the healthcare debate boils down to ‘do you support the ACA or do you oppose it?’ To us, that is really a very narrow and misleading question.”

The plan proposes allowing health insurers to charge premiums that reflect consumers’ healthcare costs and providing subsidies to help the poor obtain coverage. Every consumer would have access to a basic health plan at no cost but could purchase more generous coverage if they wished. Also, employers would no longer receive tax exemptions for providing health insurance to employees.

The Washington Post covered the plan’s announcement; a discussion led by Lakdawalla aired on C-SPAN and remains available at c-span.org.

UPCOMING CONFERENCE

The USC School of Pharmacy is hosting a national conference, “Optimizing Medication Safety and Healthcare Quality—Best Practices and Collaborations,” which aims to share strategies and promote partnerships between clinical pharmacy services and healthcare providers, payers and value-based systems. A national slate of speakers will be on hand to facilitate this interactive conference that promises to bridge gaps and open dialogue among pharmacists, physicians, nurses, health plan administrators, other payers and government agencies. The conference will be held February 20-21, 2014, at USC. For information, contact Cheryl Stanovich at stanovic@usc.edu or 323.442.1738.
Some 400 individuals were screened and/or immunized at the Korean American Pharmacy Student Association Health Fair in fall 2012.

During the Trojan Family Weekend Health Fair, USC Pharmacy students offered visiting parents a slate of health screenings and information.

Students at the PharmSC Interdisciplinary Health Fair in Alhambra administered 100 flu vaccinations and screened 200 people for diabetes, cholesterol, high blood pressure and more.

At the annual Festival of Books, USC Pharmacy students joined other USC health-profession students in the Health Pavilion in providing health outreach to festival-goers.

The Skull & Mortar/American Pharmacy Student Alliance event last fall provided diabetes, cholesterol, blood pressure and osteoporosis screenings, as well as flu shots.

Results

USC SCHOOL OF PHARMACY
The USC Associated Students of the School of Pharmacy hosted 25 health fairs during the 2012-13 academic year, screening more than 6,100 people, referring roughly a sixth of them to area clinics and providing health education to nearly 4,300 more throughout the community. The most commonly requested screening was the blood glucose test for diabetes. As many as 150 student pharmacists participated in some events, with support from a network of 200 volunteer pharmacist preceptors.
LANDMARK
A LOOK AT THE

USC School of Pharmacy
A look at the future of the Pharmacy Profession

USC Pharmacy students Mai-An Pham, Jiehye Sarah Park, Nana Numapay, Candice Chiaramonte, Manan Shah and Ravi Timbarwala

LEGISLATION

FUTURE OF THE PHARMACY PROFESSION
The Affordable Care Act and California Senate Bill 493 are changing the future of the profession, with pharmacists performing a wider range of duties than ever before.

For more than a century, the USC School of Pharmacy has been ahead of the curve in innovating pharmacy education, practice, research and policy. As the pharmacist’s role becomes even more integral to directly improving patient outcomes, the School remains committed to maximizing professional preparation for the wide array of opportunities and responsibilities awaiting future pharmacists. The following pages highlight two recent conferences convened by the School about what lies ahead for the pharmacy profession, as well as a timeline of key milestones for the profession—and the School—over the past century-plus.

As the USC School of Pharmacy helps pilot the profession forward, join us in viewing the future of pharmacy—including its challenges and opportunities—on this virtual flight over California and the nation.

The National Need for Provider Status
People are living longer, which translates into more people needing more care. Meanwhile, the Patient Protection and Affordable Care Act of 2010 (ACA) is adding new patients to the system, physicians are already overloaded and spiraling costs must be contained without sacrificing the quality of care. As pharmacists hold a key piece of the solution to this challenge, the USC School of Pharmacy joined with the American Pharmacists Association (APhA), the National Alliance of State Pharmacy Associations (NASPA) and the California Pharmacists Association (CPhA) to convene “Provider Status for Pharmacists: Creating a National Action Plan” in Los Angeles last winter. The conference brought together nearly 200 pharmacy leaders from across the nation to address how to best integrate pharmacists into the evolving system of patient-centered, team-based healthcare to
optimize patients’ health while containing costs and most effectively using limited resources.

The attendees were given an opportunity to react to a slate of draft principles being developed by the National Provider Status Coalition. These principles aim to develop a unified voice for the profession as it seeks recognition for pharmacists’ role as healthcare providers. When completed, the broad-based principles will serve to frame the profession’s efforts to seek increased access for patients to pharmacists’ patient care services.

As CPhA CEO Jon Roth—who launched the conference by reviewing pharmacists’ efforts toward achieving provider status in California—pointed out, “With the Affordable Care Act and Medicaid expansion set for implementation [a few] short months from now, we must press forward with opportunities to ensure that the millions of people who will be receiving insurance coverage have avenues to achieve care.

“By affirming pharmacists as healthcare providers,” continued Roth, “it will ensure patients can receive a range of primary care services from highly trained and widely available pharmacists.”

School of Pharmacy Dean R. Pete Vanderveen emphasized the campaign’s prospects for success. “The forces have never before been so perfectly aligned for pharmacists to be recognized providers on the healthcare team,” he said. “Our government is trying to take control of healthcare costs, and pharmacists have hard data that show our value—both in improving patient outcomes and saving healthcare dollars.”

Dana Goldman, director of the USC Leonard D. Schaeffer Center for Health Policy and Economics and professor at the School of Pharmacy and Price School of Public Policy, got to the heart—and the numbers—of the important role pharmacists can play. “Healthcare spending as a portion of total income is rapidly increasing, from 5 percent of GDP in the 1960s to almost 18 percent in 2009,” he observed. “Prevention is key to controlling healthcare costs, and pharmacists can play an important role in managing this process” by helping keep...
people healthy enough to not need hospital stays in the first place.

Goldman discussed the role of technology in healthcare and how technological advances have improved health. As an example, he emphasized the success in turning HIV from a virtual death sentence into a manageable chronic illness. “Our twin goals are to improve health and decrease cost,” he said. “Technology improves health, but it also increases costs.” Indeed, Goldman calculates that technology has accounted for half of these increases, more than aging, insurance and inflation combined.

The University of Minnesota’s Stephen Schondelmeyer asked how to get policymakers to think of pharmacists beyond the money spent on a drug.

Goldman replied that this is the fundamental problem in how healthcare expenses are charged because the pricing is determined by input rather than output. “There’s no long-term incentive to reimburse for value,” he said. Goldman stressed that pharmacists should play an important role in patient compliance and in prevention, noting the importance of each in controlling costs.

Susan Winckler, a senior associate at the healthcare intelligence company Leavitt Partners, discussed the “three big healthcare gears” of accountable care organizations (ACOs), Medicaid and health insurance exchanges. “Delivery systems are changing,” she said. “They’re moving away from fee for service to integrated systems.” She suggested that, as no one knows how the pharmacy profession will fit into these systems, pharmacists can decide their placement for themselves.

“For success to be achieved, pharmacy representatives from local, regional and national pharmacy organizations and stakeholders need to help shape the discussion,” concluded NASPA Executive Vice President and CEO Rebecca Snead. “There are many next steps that will need to occur to reach our goal, and we will all have to work together to make this successful.”

The Affordable Care Act in California

The USC School of Pharmacy further addressed the issue of provider status with the conference “How the Affordable Care Act Changes Everything,” held last summer. The School invited pharmacy leaders from across the state to join with alumni, faculty members and students to assess the state of the profession and discuss what more could be done toward achieving such recognition.

Jon Roth also addressed this gathering. Referring to the additional four million people who will be covered by the act’s expansion of Medi-Cal to low-income adults under age 65, he noted, “Coverage does not equal care.”

Of the shortage of physicians available to handle the increased patient rolls, Roth added: “The ACA has established the need. Pharmacists can fill the gap.”

Not only can they, but they must, according to USC Associate Professor Steven Chen, the Hygeia Centennial Chair in Clinical Pharmacy. “Physicians are overwhelmed
as the demand for services has skyrocketed,” noted Chen, who works to help fill that gap for the otherwise underserved in Southern California safety-net clinics.

One answer, at least in California, is Senate Bill 493, which authorizes pharmacists to provide basic care services in collaboration with physicians, medical homes and other systems of care in which patients receive treatment. While all the abilities addressed in this bill are currently within the pharmacist’s scope of practice, they are generally limited to specific care settings. Written by Ed Hernandez (D-West Covina), SB 493 expands the range of settings in which pharmacists can practice these services, while also allowing them to independently administer certain vaccines, as well as selected nicotine replacement drugs and hormonal contraceptives.

Pharmacists in Indian Health Service are given prescribing authority.

Only 4 percent of working pharmacists nationwide are women.

San Francisco pharmacist Donald Brodie delivers Rho Chi Society annual lecture, making first reference to term “pharmaceutical care.”

Health Care Financing Administration (HCFA) requires pharmacist-conducted drug reviews in skilled nursing facilities at least every 30 days.

USC Pharmacy Dean Emeritus John Biles works on Millis Commission “Pharmacist of the Future” report, which notes: “The greatest weakness to the schools of pharmacy is a lack of an adequate number of clinical scientists who can relate their specialized scientific knowledge to the development of the practice skills required to provide effective, efficient and needed patient services.”
“If we are going to be mandating that every single person buy health insurance, then we better make sure that there are enough people to see these people safely,” Hernandez told the *Los Angeles Times*. Hernandez has also expressed concern that the already serious shortage of primary care providers in California threatens to worsen in 2014, as millions more seek care under the ACA.

Still, some suggest that the bill might not even be necessary in the long run. Geoffrey Joyce, associate professor of Clinical Pharmacy and Pharmaceutical Economics & Policy, questioned whether provider status should be a primary goal for the profession of pharmacy. “Is it a game changer?” he asked, positing that the movement toward ACOs and coordinated care should lead toward more efficient models of care delivery.
“These will lead to substitution of labor from MDs to pharmacists, nurse practitioners and other health professionals,” said Joyce. Although he acknowledged the difficulty of attributing cost savings and efficiency gains within an ACO to specific components, Joyce maintained that, over time, organizations making greater use of pharmacists will see better outcomes. “Given this, a movement toward coordinated, cost-effective care will open up opportunities for pharmacists to demonstrate their value.” He called this transition the “catalyst for change” that could be “even more important than legislation that recognizes ‘provider status,’ but little else.”

Ryan Gates, president and CEO of Frontline Pharmacy Consulting and senior clinical pharmacist at Kern Medical Center, offered a different perspective. A major booster of provider status for pharmacists, Gates said that “the future of clinical pharmacy in the outpatient setting [would be] very uncertain” if SB 493 failed to become state law. This is because its passage recognizes pharmacists as providers under Medi-Cal. Gates also supported pharmacy’s importance to enhanced treatments at lower expense by sharing his successful experiences in three initiatives: a medication therapy management pilot, a pharmacist-led diabetes management program and a geriatric medical home project. “All resulted in reductions in ER visits and hospitalizations, as well as drug cost savings,” he said.

The Road Ahead
After unanimous passage by the Assembly Health Committee and the Assembly Appropriations Committee, SB 493 unanimously passed the full California State Assembly on September 11, 2013. The bill was signed into law by Governor Jerry Brown on October 1. “The legislature has declared pharmacists as providers

“If we are going to be mandating that every single person buy health insurance, then we better make sure that there are enough people to see these people safely.”

—STATE SENATOR ED HERNANDEZ, AUTHOR OF SENATE BILL 493
and made important changes to the pharmacy law that will enable pharmacists to practice consistent with their training and expertise,” said CPhA's Roth on the bill’s passage.

Dean Vanderveen added: “Senator Hernandez, Jon Roth, the USC students who raised money and went to Sacramento to support the bill’s passage, our faculty and alumni who have persistently been pushing for this bill and shown the value of pharmacists through clinical work and research, and the many others who worked so hard to shepherd the bill through the legislative process all deserve a hearty congratulations as well as the gratitude of everyone in the profession. This is a landmark day for pharmacists and patients in California.”

USC establishes William A. and Josephine A. Heeres Endowed Chair in Community Pharmacy, first of its kind in the nation.

38 states allow some form of collaborative drug-therapy management by pharmacists.

Medicare Prescription Drug, Improvement and Modernization Act enacted, requiring medication therapy management (MTM) services as outpatient drug benefit.

Joint Commission on Accreditation of Health Care Organizations institutes new standards—among them, a pharmacist must review all medication orders prior to dispensing.

American Medical Association Current Procedural Terminology editorial panel releases set of codes for use by pharmacists in billing for direct MTM services.

Most pharmacies and some individual pharmacists are considered providers under Health Insurance Portability and Accountability Act—an important step toward full provider status.
A 2013 GRADUATE’S VIEW OF THE FUTURE

Folayemi Fashola, PharmD ’13, attended “How the Affordable Care Act Changes Everything.” We asked her to share her outlook on the profession as a young pharmacist, and she wrote the following response:

As the Centers for Medicare and Medicaid Services—a major payer in the healthcare industry—is now emphasizing quality of care and outcomes over volume of services rendered, the result has been a gradual paradigm change. Many healthcare organizations currently track quality outcomes—such as the number of diabetic or hypertensive patients who achieve treatment goals—and devise strategies to improve them.

The growing challenge, however, is executing these health-quality improvement goals. And this is where the opportunity exists for individuals who are highly trained in the proper use and monitoring of pharmaceutical agents, have very frequent contact with patients and are fairly easily accessible. Community pharmacists are in an ideal position to monitor and intervene on poor medication adherence, chronic-disease screenings, referrals and therapeutic management for conditions that do not require medical exams and diagnosis, such as smoking cessation, travel medicine and contraception. Senate Bill 493 will allow for pharmacists to begin filling some of these care gaps.

Besides payers and providers, patients also need a change in paradigm, as many patients are not self-motivated to improve their health. A number of medications for chronic illnesses are FDA-approved to work as adjunct therapy, meaning in conjunction with diet and exercise. Unfortunately, many patients completely ignore the diet and exercise part. Patients have to be committed to their own well-being and work with their providers in order to achieve the best outcomes.

Although the recent changes in healthcare have brought about debate and criticism—and still leave many unanswered questions—I am encouraged that the dialogue has begun and attention has been drawn to this crucial topic. And I am optimistic that the healthcare system will continue to improve and move toward quality over quantity.
Gift Launches International Center to Target Cancer

USC Trustee Daniel M. Tsai has given $1.5 million to the USC School of Pharmacy to create the USC Daniel Tsai Fund for Translational Research in Pharmacy. The fund will establish a center based jointly at USC and in Taiwan that focuses on one of the most promising new leads in the fight against cancer.

In recognition of the gift, a laboratory in the John Stauffer Pharmaceutical Sciences Center is being named the Daniel Tsai Laboratory for Translational Research.

Center researchers will explore the development of pharmaceuticals targeting monoamine oxidase (MAO), a gene-regulating enzyme that may be linked to cancer risk as well as a host of other diseases and conditions. MAO plays a vital role in the deactivation of neurotransmitters, and too much or too little may be responsible for neurological disorders, which is why MAO inhibitors have long been used as antidepressants. Recent studies show that MAO inhibitors also have the potential to hinder the development of cancer.

The new center will be led by USC University Professor Jean Chen Shih, an internationally recognized expert in monoamine signaling and the first to successfully clone human MAO-A and MAO-B genes. She also holds the Boyd P. and Elsie D. Welin chair at the School. The center will leverage USC’s internationally renowned faculty and research facilities to develop a strategic relationship with Taiwan that involves the exchange of trainees, research findings and expertise.

“The USC School of Pharmacy is deeply honored by this gift from Daniel Tsai,” says Dean R. Pete Vanderveen. “Dr. Shih is world renowned for her work on MAO genes, and Mr. Tsai’s generous support will further the translational promise of that work to benefit human health.”

“The Daniel Tsai Fund for Translational Research will enhance our USC–Taiwan collaborations,” says Shih. “And it will move us closer to new therapeutics for cancer and autism that target the MAO genes, while training a new generation of scientists in translation research.”

Fellows at the new center will spend up to two years training in School of Pharmacy laboratories. This unique opportunity for international colleagues to collaborate in advanced research using cutting-edge techniques will accelerate the translation of scientific discovery into the next generation of cancer therapeutics.

“I believe international collaboration between expert researchers is one of the keys to developing new ways to treat disease.”

“I believe international collaboration between expert researchers is one of the keys to developing new ways to treat disease,” says Tsai. “I am proud to support USC and in particular the work of Dr. Shih to ensure these collaborations take place.”

Tsai was elected to the USC Board of Trustees in 2012 and has been an active supporter of USC’s outreach in Asia. His wife, Irene, earned a master’s degree from the USC Annenberg School for Communication and Journalism in 1985, and three of the couple’s four children are currently enrolled at USC.
In Memoriam: Tim Siu

USC School of Pharmacy Board of Councilors member Tim Siu, MD, passed away on May 14 at age 86. In addition to managing a well-respected private anesthesia practice in the San Gabriel Valley for more than 30 years, Dr. Siu dedicated his life to family, education and community.

“He was always generous with his time and money for the community and internationally,” says his fellow Board of Councilors member Raymond Poon, PharmD ’71. “He exemplified service above self, he reached within to embrace humanity, and he reminded us that every act of goodness contributes to global harmony.”

Siu is survived by his wife of nearly 60 years, Annie, four daughters and five grandchildren.

Students Show Appreciation at Scholarship Luncheon

Students show appreciation at Scholarship Luncheon

Daniel Kudryashov thanks donors on behalf of all scholarship recipients, noting the tremendous impact their generosity has on the School’s students.

Sandy Lin, PharmD ’61, Tadeh Vartanian and Mildred Lim Lin, PharmD ’62, attended the annual Scholarship Luncheon celebrating the generous donors who support scholarships.

QSAD Centurion Volunteer Org of the Year

QSAD Centurion was honored as the USC Volunteer Organization of the Year at the annual USC Volunteer Recognition Dinner in September. QSAD builds on the gifts and leadership of each member to create a formidable source of strength and support for the School of Pharmacy—today and for the future.
Alumnus Joseph Guglielmo Named UCSF Pharmacy Dean

B. Joseph Guglielmo, PharmD ’78, has been named dean of the University of California, San Francisco (UCSF) School of Pharmacy.

Guglielmo specializes in antimicrobial therapies, evidence-based pharmacotherapy and infectious diseases. He has authored more than 110 peer-reviewed papers and is longtime editor of Applied Therapeutics: The Clinical Use of Drugs and Handbook of Applied Therapeutics.

After earning his PharmD at USC, he completed a residency at UCSF and joined the UCSF faculty immediately thereafter. He now holds the Troy C. Daniels Distinguished Professorship in Pharmaceutical Sciences at UCSF. Among his many accomplishments, he developed the UCSF Medical Center Antimicrobial Stewardship Program, established the UCSF Medication Outcomes Center and developed clinical pharmacy services for UCSF’s HIV/AIDS program. As chair of the school’s Department of Clinical Pharmacy, he oversaw a 40 percent increase in research funding from 2006 to 2012.

Asked about his days at USC, Guglielmo says, “Those years were a very good time—with a good balance between learning and school and great social time.” He also recalls of his time at the Los Angeles County-USC Medical Center, “All our learning came alive there—a wonderful experience.”

Guglielmo is optimistic about the future of pharmacy in the era of the Patient Protection and Affordable Care Act (ACA).

“The pharmacy profession has a big role to play in meeting the primary care gap,” he says. “The profession, like the nation, has to be prepared to undertake the ACA and to do it right.”

Annual Awards Banquet Honors Classes of ’63 and ’13

Members of the USC School of Pharmacy Class of 1963 celebrated 50 years of work in pharmacy at the annual Alumni/Senior Awards Banquet. They were joined in the festivities by graduating students, fellow alumni, faculty and friends.

Josephine Heeres was recognized with the Honorary Alumna Award for her philanthropy. She and her husband, William Heeres, PharmD ’63, established the William A. and Josephine A. Heeres Chair in Community Pharmacy, created a matching gift program that raised more than $1 million to renovate the School’s teaching facilities, and helped fund a lab where students learn compounding techniques.

Steven Chen, PharmD ’89, associate professor and Hygeia Centennial Chair in Clinical Pharmacy at the School, received the Outstanding Alumnus Award. Chen has improved medication-related quality and safety for underserved patients and is a co-investigator on a project measuring the impact of pharmacist services in primary care settings, which received the largest federal grant ever awarded to the School.

Preceptor of the Year Award went to Jerry Lem, PharmD ’81, whose many duties have included serving as special projects manager for Thrifty Payless when it established HIV/AIDS pharmacies—the first disease-state specialty division of any major pharmacy chain. At USC, he assisted in creating the over-the-counter/self-care course and has been a preceptor in the community practice rotation since 2001.

The 17 members of the Class of ’63 who attended the event—including Heeres, Associate Dean of Student/Faculty Affairs and Admissions Fred Weissman and Board of Councilors member Keith La Fond—received a medal to mark their 50 years in the pharmacy profession.

View the photo gallery of the Class of 1963 reunion and the Annual Awards Banquet, as well as other USC School of Pharmacy events, at http://pharmacyschool.usc.edu/alumni/photos.

To read about the students honored at the banquet, see p. 33.
ALUMNI UPDATES

Elina Baskina, PharmD ’11, has joined the USC University Park Campus Pharmacy as a pharmacist.

John Bruce, PharmD ’70, has been elected to a two-year term as president of the QSAD Centurion Board of Directors.

Mark Henschke, PharmD ’83, will receive a national Patients’ Choice Award for the fifth year in a row; has been selected as one of “America’s Top Physicians” by the Consumers’ Research Council of America; and is listed in the 2013 edition of the council’s Guide to America’s Top Physicians.

Joel Hoffman, PharmD ’61, has been appointed to a three-year term on the USC Alumni Association Board of Governors; is serving as an ambassador for the Half-Century Trojans; and is serving a three-year term on the QSAD Centurion Board of Directors.

Sharon Huang, PharmD ’13, published “Phosphodiesterase-5 (PDE5) Inhibitors in the Management of Erectile Dysfunction” in Pharmacy & Therapeutics.

Matthew Ito, PharmD ’86, has been named president of the National Lipid Association. Membership includes physicians, pharmacists, researchers, nurses, physician assistants and dietitians. Ito is a professor of pharmacy practice and director of the Cardiovascular Pharmacodynamics Laboratory at Oregon State University/Oregon Health & Science University. His current research focuses on the effects of various cardiovascular and lipid-altering agents on cholesterol and glucose transporters.

Charles Leiter, PharmD ’83, president and CEO of Leiter’s Compounding Pharmacy, was a featured speaker at the annual American Society of Cataract and Refractive Surgery Symposium and Congress in San Francisco in April.

Komal A. Patel, PharmD ’04, was named Pharmacist of the Year by the Indian Pharmacists Association (IPA) at the 24th annual IPA Trade Show and Expo in September. She was recognized for her exceptional work in pushing forward legislation and especially for working with Senator Ed Hernandez on California Senate Bill 493, which promises provider status for pharmacists statewide.

Daya Perkins, MS ’06, PhD ’08, is the medical communications manager of nephrology for Amgen.

Susan Hines Richman, PharmD ’74, received the USC Alumni Association Widney Alumni House Award in recognition of her loyalty, support and dedication to USC.

Denise Schoenberger, PharmD ’91, a clinical pharmacist at Pathways Home Health & Hospice, was honored by the Silicon Valley Business Journal for Excellence in Healthcare for her role in establishing the Pharmacist Assisted Transition Home (PATH) program—an innovative medication management program. As the program’s pharmacist, Schoenberger visits patients at Sequoia Hospital when they are preparing for discharge, providing them with medication education and guidance to prepare them for a smooth transition to home. She then visits the same patients again in their homes, where she instructs both the patients and their caregivers about medication management and how to take an active role in their healthcare.

IN MEMORIAM

Ralph Dashjian, BS ’51, died April 15. He was a pharmacist at St. Agnes Hospital in Fresno for more than 30 years. He is survived by his wife of 59 years, Elizabeth, his daughter, Nancy, and his son, Craig. His brother Ronald Dashjian, PharmD ’58, is also an alumnus.

Norman Karas, PharmD ’65, died April 5. He is survived by his wife, Esther, his daughter, Michele, his son, Steven, and four grandchildren.

Dawn McCants-Sissac, PharmD ’91, died August 1. Gifts in her memory may be directed to USC School of Pharmacy scholarships: USC School of Pharmacy, 1985 Zonal Avenue #700, Los Angeles, CA 9089-9121. Attn: Markella Santana (323.442.1381). If making a gift by check, please indicate Dawn McCants-Sissac in the memo line.
New Leadership Role for Dopheide

Associate Professor Julie Dopheide has been named president of the College of Psychiatric and Neurologic Pharmacists. She will serve as 2013–14 president for the 1,000-member organization, which promotes excellence in pharmacy practice, education and research to optimize treatment outcomes of individuals affected by psychiatric and neurologic disorders.

Dopheide’s work focuses on integrating psychiatric pharmacy services in mental health treatment teams to improve drug therapy outcomes. Her expertise includes child/adolescent psychopharmacology and general adult psychopharmacology.

Among her many roles, she writes and updates pediatric psychotropic guidelines for the Los Angeles County Department of Mental Health that are used across the state by mental health professionals; serves on adult and adolescent treatment teams at Los Angeles County-USC Medical Center; and, along with her team of psychiatric pharmacy residents, contributes psychiatric pharmacy services to the Center for Community Health, a safety-net clinic in Skid Row. Dopheide’s other projects include developing a model for collaborative care at the Los Angeles Child Guidance Clinic and working to expand interprofessional education for USC students.

Digest Dedicated to Kathy Johnson

The American Pharmacists Association (APhA) has dedicated the fifth edition of its Medication Therapy Management Digest to Kathleen Johnson, PharmD ’78, MPH, PhD, who died in 2012. The Digest reports on recent findings about medication therapy management, and the dedication memorializes Johnson’s work as a pioneer in the field.

“A distinguished leader in the pharmacy profession, Kathy’s career was marked by innovative projects that have been integral in the current national movement to expand the role of the pharmacist as the medication expert on the health care team,” reads the dedication. “Her work to improve medication use and safety generally—and for vulnerable, uninsured populations specifically—distinguished her with national and international recognition.”

Johnson, who served as the USC School of Pharmacy’s vice dean of clinical affairs and outcomes sciences and chair of the Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics & Policy, was devoted to her pursuits within the School and beyond, including work with the APhA’s Medication Therapy Management Survey Advisory Board.

Increasing Immunization Rates

Associate Professor Jeffery A. Goad and colleagues at Walgreens recently released a study that found one-third of Walgreens vaccinations were administered during hours when most medical offices and clinics are closed. The study of more than six million vaccinations administered over one year in more than 7,500 Walgreens pharmacies across the United States identifies a potentially important public health impact pharmacies can make by providing immunizations during times that are convenient for consumers. Researchers found that 31 percent of Walgreens vaccinations were provided during off-clinic hours: 17 percent on weekends, 10 percent on weekday evenings and 3 percent on federal holidays. Younger, working-aged, healthy adults in particular had higher odds of accessing a variety of vaccinations during off-clinic hours. Specifically, patients had significantly higher odds of off-clinic vaccination if they were younger than 65, male, resided in an urban area and had no chronic medical conditions.
Davies Nets NIH and Dual CTSI Grants

The National Institutes of Health have awarded Daryl Davies a $856,585, three-year R01 grant to support his project Regulation of Alcohol Intake by Purinergic P2X4 Receptors.

The grant will build on previous work in the Davies laboratory, which demonstrated that ivermectin (IVM) selectively and positively modulates P2X4 receptors, and blocks the inhibitory effects of alcohol on P2X4 receptor function. Results from the NIH-funded work will provide significant new mechanistic insight into how P2X4 receptors affect alcohol intake.

In addition, Davies recently received two Clinical and Translational Science Institute (CTSI) Pilot Awards—one from USC and the other from UCLA—supporting his research on the use of IVM for the treatment of alcohol use disorders. The USC funding on its own provided the wherewithal to launch a clinical trial, but the additional grant from UCLA will increase the breadth of the study. Principal investigator on the UCLA grant is Davies’ collaborator Lara Ray, who will be joined on the project by Daniel Roche and Karen Miotto.

“Alcohol-use disorders constitute a major unmet medical need,” notes Davies. “Current therapeutic approaches have led to limited and non-durable success. Defining novel drug therapies, using existing approved drugs for other indications (i.e., repositioning), represents a fast and economically feasible approach for drug development.”

The clinical study will examine the safety of combining IVM with moderate doses of alcohol, and will test whether it reduces the reinforcing effects of alcohol and alcohol craving. The study also aims to set the stage for a Phase II study, in which a preclinical team at USC will test the hypothesis that longer-term, oral administration of IVM reduces alcohol intake with tolerable and limited side effects.

Additional collaborators on the project include Ronald Alkana, Stan Louie, Eunjoo Pacifici and Kathleen Rodgers—all faculty at the USC School of Pharmacy—as well as Michael Neely of Children’s Hospital Los Angeles.

Fuels of the Future

Wang, along with colleagues from the Pacific Northwest National Laboratory, other universities and industry representatives, will receive a two-year, $2.4 million grant for their project to produce a novel biofuel from plant-based fungi.

His grant is one of five to receive funding from the DOE’s Office of Energy Efficiency and Renewable Energy. The initiative was established to accelerate development and facilitate deployment of energy efficiency and renewable energy technologies and market-based solutions that strengthen U.S. energy security, environmental quality and economic vitality.

Wang’s previous work focused on exploring uses of naturally occurring microorganisms as pharmaceuticals, with a particular emphasis on using genomics for natural drug development. His lab discovered that the fungi Aspergillus nidulans and bacteria Streptomyces have the ability to produce many more drugs than previously known. Wang has also developed a biosynthetic method to upregulate or downregulate genes to create new therapies.
**FACULTY UPDATES**

**James Adams**, PhD, presented “Preventive Medicine: The First Medicine of Traditional Healers” at the Southern California Prepharmacy Student Symposium in Irvine in February and “Crossing the Borders of Western Pharmacology and Indigenous Knowledge” at Native Science: Dimensions and Dialogues in Claremont in April. He was featured in *Ojai Valley News* in June for his exploration of Chumash healing medicine and in the *Boulevard Sentinel* in August for his recent book, *Healing with Medicinal Plants of the West*, co-authored by Cecilia Garcia. In August, he presented “Fake Drugs vs. Real Drugs” as part of a continuing medical education program at Fountain Valley Regional Hospital and Medical Center. He is also editor of a new book on traditional Chinese medicine published by the Royal Society of Chemistry, *Traditional Chinese Medicine: Scientific Basis for Its Use* aims to make it easier for physicians, pharmacists and scientists to talk to traditional Chinese-medicine practitioners in a language common to both groups.

**Ronald Alkana**, PharmD, PhD, associate dean of Graduate Affairs and Interdisciplinary Graduate Programs, was selected as a 2013–14 Phi Lambda Sigma honorary inductee.

**Paul Beringer**, PharmD, was awarded a $40,000 grant from Cystic Fibrosis Research Inc., as part of the Elizabeth Nash Memorial Fellowship, for his project “Theta Defensins for Targeting the Metalloproteinase System in CF Airways.”

**Robert D. Diaz Brinton**, PhD, R. Pete Vanderveen Endowed Chair in Therapeutic Discovery and Development, and students were featured in a segment on the MundoFOX news broadcast in February about the USC Science Technol-

ogy and Research (STAR) program. She spoke at the forum “Women in Science, Technology, Engineering and Math: Designing, Developing and Delivering Change,” sponsored by the Saban Research Institute of Children’s Hospital Los Angeles, in May. And she was mentioned in *The Wall Street Journal*, the *Herald Online* and the *Belfast Telegraph* for the Alzheimer’s disease research she presented at the Alzheimer’s Association International Conference in July.

**Steven Chen**, PharmD, CDM, FCSHP, Hygeia Centennial Chair in Clinical Pharmacy, presented “Pharmacist–Physician Collaboration on Medication Therapy Management for Better Patient Outcomes” as part of the Right Care Initiative–Los Angeles University of Best Practices 2013 in August.

**Daryl Davies**, PhD, director of the MS in Drug Development Program, was featured on public radio station KPCC’s news broadcast in July about the impact of federal funding cuts on his research into a drug that could help alcoholics overcome their addiction.

**Julie Dopheide**, PharmD, presented “Snooze Alarm? Pulling Back the Covers on Insomnia Treatments” at the American Pharmacists Association (APhA) Annual Meeting & Exposition in Los Angeles in March; “Implementing Comprehensive Medication Management for Patients with Mental Illness” at the 2013 College of Psychiatric and Neurologic Pharmacists (CPNP) Annual Meeting in Colorado Springs in April; “Pediatric Mental Health: Minding Medication Matters” at the 36th Annual Arthur E. Schwarting Pharmacy Practice Symposium: An Interprofessional Mental Health Response to the Sandy Hook Tragedy, in Storrs, Conn., in May; and “Counting Ways to Improve Sleep Instead of Counting Sheep,” at the APhA Self-Care Institute in Washington, D.C., in June.

**Melissa Durham**, PharmD, was interviewed by NBC-4 Los Angeles news as a pain medication expert in January; and was part of the panel “Training Interprofessional Student Health Care Teams in a Primary Care Setting: Bringing the Joy Back into Teaching, Learning and Receiving Care” at Collaboration Across Borders IV in Vancouver in June.

**Jeffery Goad**, PharmD, MPH, vice chair for Continuing Professional Development, Credentialing and Distance Education, was selected to participate in the American Association of Colleges of Pharmacy (AACP) Academic Leadership Fellows Program. He presented “Immunization Update 2013,” “A Research Roundtable on Global Health Research” and several posters at the APhA Annual Meeting & Exposition in Los Angeles in March; participated in the roundtable presentation “Vaccines for the Older Adult: Expanding Access” for Medscape Pharmacists Education in June; chaired the program committee for the creation of the APhA Pharmacy-Based Travel Health Services Advanced Competency Training and delivered the inaugural program to Walgreens Corporate in Chicago in July; and was featured in *Science Codex* for his research on off-hours vaccinations at Walgreens.

**Dana Goldman**, PhD, director of the Leonard D. Schaeffer Center for Health Policy and Economics, and **Darius Lakdawalla**, PhD, Quintiles Chair in Pharmaceutical Development and Regulatory Innovation and director of research at the Schaeffer Center, were part of a team whose research on the value of cancer
care was featured in this year’s Economic Report of the President. Goldman also was quoted by The New York Times in January about an obesity study; was cited by The Washington Post in March for his proposal to give Medicare providers a set amount of funding to cover beneficiaries; and was featured in The Wall Street Journal’s “MarketWatch” in July for his research that showed that both Medicare and out-of-pocket healthcare costs are much higher for older obese adults. He and Lakdawalla were also cited by Forbes in August for their belief that health insurers should be allowed to price risk under healthcare reform.

Joel Hay, PhD, published the op-ed “If You’ve Got Obamacare, Higher Pay Doesn’t Pay” in the Orange County Register in February; the op-ed “Drug Company Invests More in Senators than New Drugs” in the Orange County Register in March; and had a letter to the editor published in The New England Journal of Medicine in August.

Kathleen Hill-Besinque, PharmD, MSED, director of Experiential Programs, was quoted by the Los Angeles Times in June about the Obama administration allowing nonprescription, over-the-counter sales of the contraceptive Plan B One-Step.

Geoffrey Joyce, PhD, was quoted by the San Diego Union-Tribune in January about healthcare reform taxes, and was interviewed by American Public Media’s Marketplace in July about the weight loss drug Qsymia and why it is being marketed almost exclusively to consumers rather than through pharmacists. He also was quoted in September by The Guardian (U.K.) about the need for corporations to find healthcare alternatives. He was quoted in an ABC News story in October about an alternate potential fate for Breaking Bad’s fictional protagonist Walter White, who might have avoided a life of crime had the Affordable Care Act been in effect when he was diagnosed with advanced lung cancer. “If Walt opted out of his employer’s coverage, he could select a plan from his state’s insurance exchange that included his preferred physician and hospital. In addition, if Walt’s household income was less than 400 percent of the federal poverty line (or $88,000 for a family of four), which is likely for a high school teacher in Albuquerque, New Mexico, he would be eligible for subsidies—both premium subsidies and cost-sharing reductions.”

Grant Lawless, RPh, MD, FACP, has been named an associate professor of Clinical Pharmacy and Pharmaceutical Economics & Policy.

Jeffrey McCombs, PhD, director of Graduate Studies, was quoted by The Sun in January about small businesses and Medicare; was quoted by the Los Angeles Times in March about the arbitrary costs of generic medicine; was interviewed by American Public Media’s Marketplace in March about drug-industry pricing for generic medications; and was quoted by the Los Angeles Times in July about healthcare reform and flaws within the Patient Protection and Affordable Care Act. He will receive the honor of a Presidential Poster of Distinction at The Liver Meeting® in Washington, D.C., in November for “Using Laboratory Data to Predict Long-Term Morbidity and Mortality in Chronic Hepatitis C Patients in the U.S. Veterans Health Administration.”

Edith Mirzaian, PharmD, presented “Student Pharmacists’ Perception of Readiness using a Self-Efficacy Model to Perform Medication Therapy Management (MTM) Services” and “Identifying Follow-Up Measures Taken by Health Fair Participants after Obtaining Abnormal Screening Values” at the APhA Annual Meeting & Exposition in Los Angeles in March; presented “PPACA, ACO, PCMH, etc.: Where Do Pharmacists Fit in This New Alphabet Soup?” at the California Pharmacists Association’s West Coast Exchange in Monterey, Calif., in March; was a panelist for the Pharmacist’s Letter’s PL Voices—Clinical Recommendations webinar and presented on travel medicine in May; and served as the USC delegate and presented at the panel “Developing and Implementing a Collaborative Leadership Initiative” at the AACP Annual Meeting in Chicago in July.

Tien Ng, PharmD, FCCP, BCPS, presented “Hyponatremia and Heart Failure: Clinical Implications and Appropriate Management” at the 17th Annual Heart Failure Symposium in Los Angeles in April.

Frances Richmond, PhD, director of the Regulatory Science Program, was quoted in Nature in April about regulatory science academic programs.

Kathleen Rodgers, PhD, was awarded a $30,000 grant from the Southern California Clinical and Translational Science Institute as co-principal investigator with Annie Wong-Beringer, PharmD, FCCP, FIDSA, vice chair of the Titus Family Department, for the pilot funding proposal “Antibiotic Modulation of Staphylococcal Virulence Expression and Its Impact on Disease Severity in Murine Model of Infection.”
Jean Shih, PhD, University Professor and Boyd P. and Elsie D. Welin Professor, was interviewed by ChineseDailyUS.com while attending the International Water and Health Symposium as an invited speaker in Pasadena, Calif., in January. She was featured in ScienceDaily and Asian News International in July for her study of a brain enzyme that, when missing, leads to abnormal levels of fear in mice.

Neeraj Sood, PhD, was lead author of “Test and Treat in Los Angeles: A Mathematical Model of the Effects of Test-and-Treat for the MSM Population in LA County,” published in Clinical Infectious Diseases in June. He published an article on IndiaBioscience.org in February about the need for change in Indian pharmaceutical policymaking that also featured research by Darius Lakdawalla and Dana Goldman; was featured in the Los Angeles Times, ScienceDaily and DailyTech in March for his paper that showed that widespread use of anti-HIV drugs in Los Angeles County could reduce new AIDS cases by almost 40 percent, but would also double the number of cases in which the virus had developed a resistance to drug therapy; and was featured in California Healthline, The Republic, The Columbus Dispatch and Healthcare Finance News in April for his research that showed that health plans with high deductibles don’t motivate U.S. patients to shop around for the cheapest medical services.

Glen Stimmel, PharmD, BccP, received Phi Lambda Sigma’s Outstanding Alumni Award. He served as facilitator for the CPNP Strategic Planning Conference in Kansas City, Mo., in January. He presented “Depression” and “Counseling Patients on Psychotropic Medication” at the 34th Annual Madison, Wisc., in March; “Schizoaffective Disorder” and “Psychiatric Pharmacy Resident Services in USC Telehealth Therapy” at the CPNP Annual Meeting in Colorado Springs, Colo., in April; and “The Depression Consult Service within the LAC/USC Rheumatology Clinic: Outcomes and Experiences” at the Keck School of Medicine of USC Division of Rheumatology grand rounds in July.

Dean R. Pete Vanderveen, PhD, RPh, John Stauffer Decanal Chair, was quoted on public radio station KPCC’s news broadcast in June about the education and work of pharmacists, and represented academic pharmacy at various hearings and media briefings in Sacramento related to Senate Bill 493. He also served as keynote speaker at the American Association of Colleges of Pharmacy Organizing Committee/13th Asian Conference in Haiphong, Vietnam, and participated in the International Pharmaceutical Federation (FIP) Pharmaceutical World Conference in Dublin, both in September.

Fred Weissman, PharmD, JD, associate dean for Student/Faculty Affairs and Admissions, has published the eighth edition of A Guide to California Community Pharmacy Law. Weissman’s aim for the book, which was first published in 1997, was to create a work on pharmacy law that was engaging while covering important but potentially dry material.

Bradley Williams, PharmD, presented “Optimizing Geriatric Drug Therapy: Are We Ready for Another Round of Beers?” at the University of California, Irvine Department of Medicine grand rounds in February; “Managing Medications to Improve the Quality of Life for Patients with Alzheimer’s Disease and Parkinson’s Disease” at the American Pharmacists Association Annual Meeting & Exposition in Los Angeles in March; and “Medically Complex Older Adults: The Pharmacotherapeutic Challenge” at the 13th Annual University of Louisville Geriatrics Healthcare Symposium in Louisville, Ky., in March.

Walter Wolf, PhD, Distinguished Professor, co-chaired the Ethical Issues in Clinical Research session at the Annual Meeting of the American Association of Cancer Research in Washington, D.C., in April.

Julie Zissimopoulos, PhD, was interviewed by PBS NewsHour in June about the help provided to Social Security by baby boomers continuing to work and in September about the benefits of the U.S. workforce getting older. She was also quoted by the Los Angeles Times in August about how both large and small businesses across the country are coping with the challenges of providing healthcare to their employees.

In Memoriam

Jack Kern, PharmD—a faculty member at the USC School of Pharmacy for 37 years until his retirement in 2012—died on February 22 at the age of 65. His specialty was acute care medicine. In 1995, he began a 10-year role as chair of the Admissions Committee. Colleagues and former students remember Kern as a natural teacher who embraced the opportunity to sit down with students to talk about the proper use of medications and the profession of pharmacy.
Melvin Baron, PharmD, has produced a series of successful fotonovelas aimed at improving health literacy in the Spanish-speaking community. His latest entry in the series takes aim at breast cancer, the most common cancer among Latinas. He successfully secured partial funding for this project—“Why is Breast Cancer Detection Important?”—through a campaign on Microryza, making him USC’s first crowd-funding success story.

“The funds will be used to create a new fotonovela to let women and their families know the importance of early breast cancer detection,” says Baron. “Many low-literacy populations don’t understand why they should be screened. We aim to change that and save lives. The development of culturally and linguistically appropriate material for the Latino community will help reduce stigmas that people associate with healthcare and educate them about the most prevalent health conditions, in this case dealing with breast cancer.”

The contributions will specifically be used to help fund the photography and editing for this uniquely targeted educational tool.

Among the team members working on this project is Reyna Raya, a USC pharmacy student who is also a breast cancer survivor. She is providing input on the storyline and will also be involved in production details.

Baron raised more than $6,000 for the fotonovela, which also garnered a $32,300 grant from USC Neighborhood Outreach.

The breast cancer fotonovela is the eighth in a series of critically acclaimed publications. Written in both Spanish and English and based on research conducted within Latino populations, the comic book-style fotonovelas have previously addressed such issues as medication compliance, diabetes, dementia, folic-acid deficiency, depression, pediatric asthma and childhood obesity.

“We have a formula for success within the Latino community and will use it again to reach women and their families with important messaging on breast cancer,” he says. “Our USC School of Pharmacy team will work with community clinics, pharmacies and other health leaders to ensure that our message is effective, engaging and reaches the right readers.”

Baron recently presented “Evaluation: A Diabetes Education Fotonovela for Low-Literate Latinos” and “Sweet Temptations: A Fotonovela on Diabetes” at the 6th Health Disparities Conference in New Orleans in March.
Moving Targets: Students and Experts Examine Neurodegenerative Diseases

The 12th Moving Targets Symposium brought together students, faculty and scientific leaders to discuss the challenges of neurodegenerative diseases and the opportunities to make progress toward new treatments and cures.

With an estimated 50 million Americans afflicted each year by the more than 600 disorders of the nervous system, neurodegenerative diseases dramatically affect the nation’s mental, physical and economic health. Alzheimer’s disease, for example, is the sixth-leading cause of death in the U.S., with the associated economic costs expected to reach $1.2 trillion by 2050.

This year’s USC School of Pharmacy-sponsored event hosted a prestigious array of speakers from academia, industry, government, publishing and private foundations. USC School of Pharmacy Professor Roberta Diaz Brinton, R. Pete Vanderveen Chair in Therapeutic Discovery and Development, presented a keynote address.

The symposium also featured Q&A sessions and a student poster competition with seven winners, each receiving a $750 prize.

The free conference is held annually by the USC student chapter of the American Association of Pharmaceutical Scientists with the aim of inspiring students to become the next generation of leaders in therapeutic development. Doctoral students Christine Solinsky, chair, and Anna Naito, vice chair, led this year’s Moving Targets effort.

“It’s the sign of a really good meeting when everyone—speakers and attendees—comes away with interesting new information, ideas and connections,” said Dr. Emilie Marcus, executive editor of Cell Press and a speaker at the event.

The American Association of Pharmaceutical Scientists (AAPS)—USC board organized the Moving Targets event: (from left) Secretary Ania Papinska, Treasurer Mihir Shah, Chair Christine Solinsky, Social Chair Hsuan-Yao (Sean) Wang, Website Manager Li Zhou and Vice Chair Anna Naito

The Moving Targets Student Poster Winners Were:

GWEN OWENS, Caltech Biochemistry & Molecular Biophysics — Crystallization of Huntingtin Exon 1 Using Microgravity

CHUN-JUN GUO, USC School of Pharmacy — Cluster Hypothesis: A Revisit

LAUREN KLOSINSKI, USC Neuroscience — A Bioenergetic Trajectory of Female Brain Aging and Alzheimer’s #2: Mechanistic Link Between Mitochondrial Dysfunction and White Matter Degeneration in the Normal Mammalian Aging Female Brain

MEGAN YARDLEY, USC School of Pharmacy — Ivermectin Represents a Promising Novel Compound for Alcoholism Treatment in Humans

ZHENG XING, USC School of Pharmacy — RAB3D AND RAB27 Play Distinct Roles in Regulating Tear Protein Secretion from Lacrimal Gland Acinar Cells

NICOLE FORS, Caltech Chemistry — Capturing Protein Dynamics by Time-Resolved Spectroscopy

ZACHARY WINCHESTER, UCLA Neurology — Estrogen Receptor (ER) β Expression in Oligodendrocytes Is Required for Attenuation of Clinical Disease by an ER β Ligand in a Mouse Model of Multiple Sclerosis
USC Pharmacy Students Best in Nation for Patient Care

The American Pharmacists Association awarded the USC School of Pharmacy’s Academy of Student Pharmacists chapter its National Patient Care Award at the organization’s Annual Meeting & Exposition. The award is given to the chapter with the “greatest level of impact and involvement in patient care.”

The honor recognizes the chapter’s effective, far-reaching, culturally diverse projects, including:

» The Senior Home Project, in which student pharmacists take patient care directly to seniors living in assisted care facilities associated with the Hope Through Housing Foundation

» The Medical and Pharmacy Student Collaboration, which provides coordinated, continuous, comprehensive care to uninsured and homeless populations in downtown Los Angeles

» Script Your Future, for which students designed and implemented surveys and interventions to improve medication adherence, as well as providing screenings and workshops at the Braille Institute, YMCA, safety-net clinics and senior homes

School of Pharmacy students also received the association’s Region 8 Operation Heart Award for USC’s Operation Heart patient care project, which provided screenings to 5,000 people. A unique aspect of USC’s approach was a focus on cultural diversity. Students provided screening information translated into Spanish, Mandarin, Vietnamese and Korean to ensure maximum benefit to ethnically diverse patients.

All told, USC pharmacy students have screened and educated nearly 3.5 million people at various health fairs and community events.

Pharmacy students from Asian universities who participated in an annual four-week clinical pharmacy and drug design program received certificates of completion after presenting their work—in English—to fellow participants and to the USC professors and fourth-year pharmacy students who taught and mentored them. Above, the USC and visiting students enjoy some time off from studies.

Twenty-seven student awards were presented at the annual Alumni/Senior Awards Banquet. Among them, the Merck Award was given to the four students with the highest grade point averages: Chrissie Chew, Leonid Beygelman, Serena Smith and Deana Hanna. Beygelman graduated with a 4.0. Also during the banquet, class President Zain Al-Shamiyeh spoke on behalf of the Class of 2013.
Cedona Watts’ Very Big Year

At the 25th National Black Graduate Student Association (NBGSA) Conference, PharmD candidate Cedona Watts was awarded first prize in the paper competition for her study “Blockade of CXCL8-CXCR 1/2 Axis as a Strategy for the Treatment of Triple Negative Breast Cancer and Colon Cancer.” The study focuses on understanding the relationship between inflammation and cancer.

Watts also garnered the $500 William Lawson, Jr. Memorial Scholarship, which is awarded based on NBGSA involvement, university and community engagement, academic excellence and leadership. She also received a National Conference Fellowship, which waived her registration fee. In addition, Watts was selected as the NBGSA Western Region Representative for the upcoming academic year.

“I have been fortunate to hold leadership positions in the Student National Pharmaceutical Association and the USC School of Pharmacy Diversity Initiative Advisory Group,” says Watts. “Those experiences have helped to cultivate my professional development, and also allowed me to not only serve the community but my fellow pharmacy students as well.”

Continuing her interest in oncology research, Watts was a 2013 National Cancer Institute Cancer Research Fellow over the summer.

Pharmacy Student Begins Translational Science Training

Pharmacy PhD candidate Melissa Agnello is one of four USC students selected by the Southern California Clinical and Translational Science Institute (CTSI) to take part in a pre-doctoral training program. The two-year opportunity provides multidisciplinary, team-based clinical and translational research education to a select group of doctoral students. Upon completion, Agnello will earn a Certificate in Clinical & Biomedical Investigations from the Keck School of Medicine of USC.

“The training program perfectly complements my PhD program,” says Agnello. “I began my studies in clinical and experimental therapeutics with the intention of training translational scientists to solve clinical problems, which is precisely what the CTSI program also aims to do.”

Agnello works in Professor Annie Wong-Beringer’s lab, examining the dangers of antibiotic resistance. Wong-Beringer will continue to serve as Agnello’s primary mentor throughout the CTSI training program.

Senior Prom

Senior citizens shimmied on the dance floor and received free screenings for blood pressure, cholesterol and diabetes, administered by USC pharmacy students, at the Seventh Annual Senior Prom, hosted by the USC Skull and Mortar Honorary Service Fraternity at the St. Barnabas Senior Center.
Meet the PharmD Class of 2017

- Total entering class: 195 (including 33 from the Trojan Admission Pre-Pharmacy (TAP) program)
- Female: 65%
- Male: 35%
- Average age: 24
- Average undergraduate GPA: 3.53

2013 COMMENCEMENT

The 106th Commencement saw 181 students earn PharmD degrees, 20 receive PhDs, one achieve a Doctor of Regulatory Science and 31 obtain MS degrees. A record 38 pharmacists completed residency training while 10 finished fellowships.
FIFTH-GRADER ‘PHARMACISTS’

Fifth-graders from three local elementary schools participated in the USC Health and Science Expo, where they shared what they had learned over the previous six weeks working with USC students as mentors and teachers.

Students mentored by School of Pharmacy PhD student Melissa Agnello won first place for their project focusing on germs, and PharmD candidate Jacqueline Benjamin’s mentees took home second place for a project that explored the effects of various medicines on plant growth.

“The class was curious about my role as a pharmacy student and wanted to learn more about medicine, just as I am doing now,” says Benjamin. “At the Expo, my students did a great job answering the difficult concept questions the judges asked, which showed that they really had learned about the scientific process itself instead of just memorizing the facts.”

STUDENT UPDATES

John Gallagher and Anna Naito, both PhD candidates, were awarded 2013 fellowships from the American Foundation for Pharmaceutical Education.

For her project to help inform older Chinese adults about polypharmacy and how cultural remedies affect prescribed medications, PharmD student Victoria Cho has been named an Albert Schweitzer Fellow for 2013–14.

Xiaoli Niu, graduate student in pharmaceutical economics, won the best poster presentation at the 18th annual meeting of the International Society for Pharmacoconomics and Outcomes Research held in May. The poster explored the costs to society due to underemployment in persons with hemophilia A and B. Her faculty mentor was Professor Michael Nichol.

Vickie Pon, inaugural resident in the new postgraduate program in managed care, won best poster for residents, fellows and graduate students at the Academy of Managed Care Pharmacy 25th Annual Meeting & Expo.

Joy Wang, PharmD candidate, offered a 10-week smoking-cessation program for low-income patients at the QueensCare Family Clinics in Eagle Rock as part of her 2012-13 Albert Schweitzer Fellowship.

PharmD candidate Amanda Wong was honored at USC’s 2013 Community Service Awards for her innovative program to help blind and visually impaired people safely manage their medications.

Shili Xu, PhD candidate, received a Phi Kappa Phi Student Recognition Award at the 32nd Annual Academic Honors Convocation, and received first prize in the science, technology, engineering and mathematics category at the USC Graduate Research Symposium for his presentation, “Discovery of an Inhibitor of Protein Disulfide Isomerase (PDI) for Ovarian Cancer Treatment.”
“As an alumnus, I know the success of USC pharmacy students greatly depends on the support and mentorship of the Trojan Family. I encourage students—especially those interested in managed care or the pharmaceutical industry—to develop their skills and become leaders in our profession.”

VINSON C. LEE, PharmD, MS, (pictured above, right, with PharmD students Tony Luu and Shannon Dervin) on establishing the Vinson C. Lee Endowed Scholarship, which was matched by his employer, Amgen.

SCHOLARSHIPS CHANGE LIVES

To learn how you can change a life, contact Mary Wackerman at 323.442.1360 or mwacker@usc.edu.

www.usc.edu/pharmacy
**OCTOBER 25, 2013**
Alumni and Friends Golf Outing
Angeles National Golf Club, Sunland, California
*Information: 323.442.1738 or stanovic@usc.edu*

**NOVEMBER 15, 2013**
USC School of Pharmacy Reunion Dinner—Class of 1973
Radisson Hotel Los Angeles Midtown
*Information: 323.442.1738 or stanovic@usc.edu*

**NOVEMBER 15, 2013**
USC School of Pharmacy Reunion Dinner—Class of 1963
USC Edmondson Faculty Center
USC Health Sciences Campus
*Information: 323.442.1738 or stanovic@usc.edu*

**NOVEMBER 16, 2013**
Homecoming and Class Reunions
USC University Park Campus
*Information: 323.442.1738 or stanovic@usc.edu*

**JANUARY 24–26, 2014**
19th Annual Winter Retreat hosted by QSAD Centurion
Ojai Valley Inn & Spa, Ojai, California
*Information: 323.442.1360 or mwacker@usc.edu*

**FEBRUARY 20–21, 2014**
Optimizing Medication Safety and Healthcare Quality
Best Practices & Collaborations
University of Southern California
*Information: 323.442.1738 or stanovic@usc.edu*

**MARCH 28–31, 2014**
USC Alumni Reception—Sunday, March 30, 2014
APhA Annual Meeting, The Power and Promise of Pharmacy
Orlando, Florida
*Information regarding reception: horgan@usc.edu; 323.442.1383*

**APRIL 24–27, 2014**
USC Alumni Breakfast—Saturday, April 26, 2014
West Coast Pharmacy Exchange
Palm Springs, California
*Information: www.cpha.com/CEEvents/WestCoastPharmacyExchange/tabid/14972*

**MAY 10, 2014**
Alumni/Senior Awards Banquet
Town & Gown Ballroom—USC University Park Campus
*Information: 323.442.1738 or stanovic@usc.edu*