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## A MESSAGE FROM GARY M. POLLACK



May 2019

Dear Friends and Colleagues:

Our college will hold its commencement activities tomorrow (May 2), on what promises to be a typically gorgeous eastern Washington day (regardless of the weather). While commencement holds a special place in the minds and hearts of academics, this year's event will be particularly meaningful to our college.

The inaugural group of Doctor of Pharmacy students based in Yakima will receive their degrees. Our Yakima project resulted in a programmatic element of extraordinarily high quality for several reasons. First, we embarked on the effort for the right reason: to be true to the land-grant mission of WSU by bringing our program to an area of the state with distinct access-to-opportunity and access-to-care challenges. Second, we developed a sound strategy for implementing our extension and convincing students that they would receive a high-quality experience, with leadership from Linda Garrelts MacLean, Jennifer Robinson and Stuart Muller. An important component of this strategy was fundamentally changing our approach to delivering the professional curriculum, an activity in which all our faculty, and many of our staff, were involved. Third, we were able to attract a group of talented faculty, committed wholeheartedly to the success of their students, with outstanding leadership from Angie Stewart. Fourth, we formed an extremely strong partnership with the Pacific Northwest University of Health Sciences, and our students and faculty received a heartfelt welcome from the Yakima community generally. Finally, and of course most importantly, we recruited an outstanding group of students to serve as trailblazers for this effort. It would be impossible to sit down and create on paper a stronger inaugural cohort, and I am extraordinarily proud of every one of them.

Commencement season this year also will be special because six students from our Pharmaceutical Sciences graduate program are in the process of completing the requirements for the Doctor of Philosophy degree, and four have elected to participate in commencement. This is a record number of PhD graduates for our program. In fact, when I arrived at WSU in 2010, six was the total number of PhD-intending students working with faculty in our college. The programmatic growth and improvement that has occurred is a point of pride, not only for the faculty and staff directly involved in the graduate program, but for our entire college. This was only possible with

the leadership provided at different points in time by Gary Meadows, Kay Meier, Sayed Daoud, Sue Marsh and Phil Lazarus, through the dedication of a core group of faculty to graduate education, and through the success of the faculty in developing a vibrant culture of discovery and securing significant research funding. And, of course, we have been fortunate to recruit outstanding graduate students, who truly are the fuel for what has become a significant research engine on the Health Sciences campus.

I offer my congratulations and thanks to everyone who has contributed to the college's development over the last several years. Most importantly, though, congratulations to this year's graduates. You have made us, and will continue to make us, proud to call you members of our family.

Go Cougs!



Gary M. Pollack  
Dean, College of Pharmacy and Pharmaceutical Sciences  
Washington State University



## UPCOMING EVENTS



**Commencement**  
The FOX  
Spokane, Wash.



**Celebrating Generosity -  
Seattle**  
5:00 - 7:30 p.m.  
Columbia Tower Club



**CougaRx Nation Reception  
at the NW Pharmacy  
Convention**  
5:00 - 7:00 p.m.  
Coeur d'Alene Resort,



**TIPed**  
PBS Building  
Spokane, Wash.

[More college events >>](#)

### Worldwide rare disease study led by WSU researchers

By Judith Van Dongen, WSU Spokane Office of Research

Scientists at Washington State University are leading a new study that will take them one step closer to making treatment options available to patients with a rare inherited disease.

Researchers Jean-Baptiste Roulet and Mike Gibson of the WSU College of Pharmacy and Pharmaceutical Sciences are conducting a natural history study of patients with succinic semialdehyde dehydrogenase deficiency (SSADHD).

SSADHD is a genetic disorder that is most commonly diagnosed in young children; it disrupts the metabolism of gamma-aminobutyric acid (GABA)—a neurotransmitter that serves to inhibit the activity of nerve cells in the brain—and causes a wide range of neurological symptoms that include developmental delays, motor control problems, absence of speech, and seizures. A natural history study collects health information to understand how a disease develops over time in the absence of treatment.

Funding for the study comes from a \$3.2 million grant awarded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development—a component of the National Institutes of Health (NIH).

In collaboration with colleagues at Boston Children’s Hospital and other academic hospitals around the world, the WSU researchers will follow 55 patients with SSADHD over the course of five years; this represents about a quarter of the known patient population of around 200 worldwide. The research team will analyze a variety of biological samples and clinical data obtained annually from patient participants.

“SSADHD ranges from patients with very mild symptoms—including some that have actually gone through community college with assistance—to patients that are severely impaired and wheelchair-bound,” said Gibson, the study’s principal investigator.

The study will help scientists identify specific biomarkers of disease severity and better predict the natural course of SSADHD.

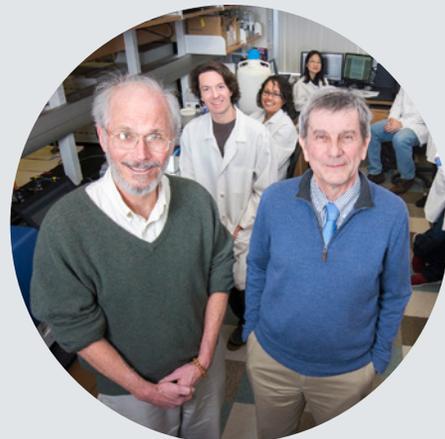
What’s more, the natural history study will help the researchers fulfill an important prerequisite for FDA approval of new drugs or the use of existing drugs indicated for other conditions.

Gibson has previously conducted studies to evaluate a handful of drugs for potential use in patients with SSADHD. This includes a phase II NIH clinical trial on a promising experimental drug known as SGS742. That trial was recently concluded, and outcomes are pending.

Successful introduction of a drug to treat SSADHD would be a major milestone. Although as many as one in ten Americans have a rare disease, 95 percent of rare diseases do not have treatment options.

“Completion of a natural history study also marks a key step in the quest to secure funding to develop newborn screening for the disease”, said Roulet.

Adding SSADHD to existing newborn screening tests would allow for earlier diagnosis of the disease. “Currently, it takes an average of two years before patients are diagnosed”, Roulet said. That’s because it’s impossible to distinguish the symptoms seen in patients with SSADHD from those that are typical for many other neurological diseases. As a result, diagnosis relies on highly specialized testing that physicians may not think to order right away, given the rarity of the condition.



On a more personal level, the new study represents the culmination of several decades of research by Gibson, who first identified the genetic mutation that causes SSADHD while he was a graduate student in the 1980s. The discovery cemented his research focus on rare diseases and set him on a path to becoming widely recognized for SSADHD research and treatment.

Both Gibson and Roulet have worked hard to advance rare disease research beyond their own work. They are involved in an NIH-funded research center known as the Sterol and Isoprenoid Research (STAIR) Consortium. STAIR represents a collaborative group of scientists and other individuals and groups dedicated to clinical research on disorders related to the metabolism of cholesterol and other sterols and isoprenoids, including SSADHD.

They are also working toward establishing a rare disease initiative at WSU that would bring together researchers from various disciplines who are focused on rare diseases.

Motivation to conduct rare disease research most importantly comes from working with patients and families, said Roulet. He and Gibson have worked with the SSADHD Association and patient advocacy groups for several other rare diseases. These groups are key to the success of rare disease research and keep the researchers focused on improving patients' quality of life, which ultimately is the goal.

"If I can help develop one treatment that improves the quality of life for patients with SSADHD, I will consider my career to have been successful," Gibson said.

## **WSU discovery could aid in battle of debilitating and deadly inflammation**

**By Charlie Powell, College of Veterinary Medicine**

PULLMAN, Wash.—Most, if not all, infections and diseases in animals and people are met with some level of the body's own inflammatory response. Sometimes this inflammatory response crosses a line from being protective and useful to becoming debilitating or even deadly.

Scientists in Washington State University's College of Veterinary Medicine and College of Pharmacy and Pharmaceutical Sciences (CPPS) have discovered an important step in the progression of the body's inflammatory response that may soon lead to effective management and treatments. [The team's paper](#) was published Monday in the prestigious journal, Nature Communications.

"Inflammation is vital for life, without it you will die," said Professor Santanu Bose with WSU's Department of Veterinary Microbiology and Pathology. "But inflammation can also debilitate or kill the very organism it is trying to save. Diabetes, Alzheimer's disease, atherosclerosis, arthritis, cancer, pneumonia, and other infections are all examples where even after the benefits of inflammation have been attained, it is the continued, seemingly uncontrolled inflammation that makes things much worse, even deadly."

The collaborative team effort was led by Bose along with pharmaceutical sciences Assistant Professor Senthil Natesan in CPPS, and the former director of WSU's School of Molecular Biosciences, Professor Jonathan Jones. [Of the 11 scientists contributing to the work, two were members of the CPPS faculty, Senthil Natesan postdoctoral research associate Jeevan GC (pharmaceutical sciences, Natesan lab).] The collaborative team's work led to the discovery of a naturally-occurring modified form of cholesterol that binds to key cell surface proteins called integrins. Once bound, the complex acts to signal surrounding cells at the site of an infection or during metabolic insult to induce inflammation.



*Natesan*

“What we found was that when a white blood cell called a macrophage encounters a foreign organism, say a virus, a gene in the cell turns on and produces a type of cholesterol,” Bose explained. “In our case we used an influenza A virus and respiratory syncytial virus as our models. This cholesterol then converts into another form of the lipid named 25-hydroxycholesterol or 25HC for short.

“Once produced, 25HC then leaves the cell and encounters other nearby macrophages where a receptor protein on the surface called an integrin is waiting, sort of like an antenna that waits to receive a radio signal. Once 25HC binds to the integrin it amplifies the inflammatory response.

“This is the first time scientists have found a lipid acting in this manner to amplify inflammation.”

The research group is also excited about the potential of this discovery in terms of developing anti-inflammatory therapeutics.

“This collaborative study shows the increasingly essential and complementary role of computer simulations in understanding complex, molecular level, biological processes,” explained Natesan. “One of the most novel and exciting findings of this study is the binding site through which 25HC interacts with the integrins. This seemingly druggable binding site opens up new opportunities to discover small molecule therapeutics to treat inflammation. Such an effort is currently underway.”

The study has also paved the way for future research directions in understanding immune cell biology.

“Integrin receptors are key regulators ensuring cells and tissues function normally,” said Jones.

“Identification of this pathway provides a better understanding of how lipids affect integrin functions in both normal and diseased tissues. Our data might also explain why taking anti-cholesterol medications like statins actually decrease certain cancer risks since they inhibit integrins.”

Currently, the team is working closely with WSU’s Office of Commercialization to develop anti-25HC based anti-inflammatory therapeutic agents to combat various inflammatory diseases.

Bose gratefully says that the discovery would not have been possible without the National Institutes of Health funding support from his and Jones laboratories.

“Credit for this discovery, goes to my current and former graduate students and post-doctoral fellows from WSU and at the University of Texas,” said Bose.

Bose’s current graduate student Swechha Pokharel, is first author on the paper, and she worked equally closely on the project with Bose’s former graduate student Niraj Shil. Pokharel will earn her Ph.D. degree this coming fall.

“Swechha is to be commended for two remarkable things as a Ph.D. graduate student relative to this research,” said Bryan Slinker, dean of WSU’s College of Veterinary Medicine. “First, it is uncommon for a person who has not yet earned their doctorate to be first author on a paper in a journal as prestigious as Nature Communications. Second, her intelligence and warm, professional personality made working with a federally-funded, all WSU effort, that much more effective.”

“I am extremely grateful to Professor Bose,” said Pokharel of her mentor. “He recognized my willingness to learn and as a mentor he taught me how one brings together a large group of like-minded scientists readily willing to offer their expertise and direct their efforts for a shared discovery. I am blessed by this experience.”

### **A ghost from our past?**

How did humans evolve to have an immune system that produces an inflammatory response that may kill them?

Professor Santanu Bose says, that's an interesting question. He leans toward the questioner and asks with a smile, "Do you believe in residual spirits?"

The question is not one about the supernatural but more one referring to the evolutionary past of humans.

"This is pure speculation but, long before humans were civilized and we were wandering the plains or seashore in search of food, we may have eaten anything we came upon," said Bose. "Imagine a dead animal. We ate the carrion and it was loaded with things that could make us sick or even kill us. Sometimes it probably did. But many times maybe, our immune system had this massive inflammatory response and sent all resources forth to kill off those pathogens and those humans survived to pass on their genes.

"No one knows for sure but maybe, our ability to do that has not been lost and now that we are not dependent on exposure to such things, our inflammatory process still stands ready? Perhaps what we call an overactive inflammatory response is coded in our genes and is one of the things that helped us survive as a species until now. For fun, one can think of it sort of like the residual spirits or ghosts in literature that inhabit a vessel and we are the vessel that carries them forward through time until we evolve away from it."

### **ASPET award named for former WSU faculty member**

Former Washington State University (WSU) faculty member Richard Okita, Ph.D., was recently honored in the naming of the Richard Okita Early Career Award in Drug Metabolism and Disposition. The American Society for Pharmacology and Experimental Therapeutics (ASPET) celebrated the naming of its early career award on Tuesday April 9, 2019. The event took place as part of the 2019 ASPET Annual Meeting at the Experimental Biology conference in Orlando, Florida.



The newly named award was established by the ASPET Division for Drug Metabolism and Disposition to recognize excellent original research conducted by early career investigators in the field of drug metabolism and disposition. It is awarded biennially to ASPET members nominated by at least two of their peers for research showing independence of thought, originality of approach, clarity of communication and an impact on the drug metabolism field.

Before his retirement in 2019, Okita served for more than 17 years as the program director in the Division of Pharmacology, Physiology, and Biological Chemistry at the National Institute of General Medical Sciences (NIGMS). The NIGMS is also one of the National Institutes of Health (NIH). In his role Okita administered research grants in the areas of drug metabolism and transport, drug-induced toxicology and drug delivery. He also managed pharmacology and clinical pharmacology training grants and fellowships; conference and research awards; and the Building Infrastructure Leading to Diversity (BUILD) Initiative.

"Dr. Okita is the epitome of NIH program directors," said Mary Paine, associate professor in the Department of Pharmaceutical Sciences. "I will be eternally grateful to him for his never-ending encouragement, advocacy, and sage advice."

Prior to joining NIGMS in 2001, Okita was a professor of pharmaceutical sciences at the College of Pharmacy and Pharmaceutical Sciences (CPPS) for 11 years. He also served as associate chair of the Department of Pharmaceutical Sciences. "Dick was one of us!" said CPPS Vice-Dean Linda Garrelts MacLean. "He was an important part of the college – both for students as well as his faculty colleagues."



## A MESSAGE FROM LINDA GARRELT'S MACLEAN



Dear friends, colleagues and valued alumni,

Spring is a wonderful time in the college as we take a moment to celebrate the many alumni and friends who are so important to our program.

We held our annual Celebrating Generosity and Tribute to Excellence events in both Yakima and Spokane a few weeks ago. At both locations, we welcomed and thanked preceptors, alumni, donors, faculty, staff, students and supporters of our program, who all contribute to make our program innovative and exceptional. Because of your involvement, our students are gaining the knowledge, leadership skills and clinical skills that will have a tremendous impact on the future of health care.

Dean Angela Stewart kicked off our program in Yakima on April 5 where teachers of the year and students of the year were announced. That evening, the first “Friend of Pharmacy” award was presented to Brock Eubanks, Ph.D., and spouse of Professor Damianne Brand-Eubanks, for coaching and mentoring members of the NCPA Business Plan Competition Teams, including the team that won the National Business Plan Competition.

That evening, we also had an opportunity to present Patrick O’Connor (’95) his 2014 Preceptor of the year medal and recognize the 2017 Mentor of the Year, Ron Jennings (’84). Santos Rivera (Pharm.D. candidate, class of 2021) nominated Ron for the Mentor of the Year award and presented the medal to Ron during the Yakima event. According to Santos, “Ron has made himself available at any time when I have questions regarding clinical processes or medication questions. Our monthly mentor meetings have proven to be an invaluable source of knowledge where I am able to discuss, candidly, the profession of pharmacy.” John Oftebro (’65) also joined us in the evening after he had presented to Yakima’s NCPA student group earlier that day, describing his entrepreneurial journey over the last several decades. The leadership and involvement of our alumni and friends is what sets our program apart and we are truly grateful.

On April 12, our Spokane group gathered to recognize scholarship donors and recipients, and give them a chance to visit with each other. I overheard part of the conversation between, Mark Norris (’76) and his scholarship winner, Elyssa Hanson (Pharm.D. candidate, class of 2021) — so much to be learned from each other! We sang happy birthday to Bert Porter (’50) and presented his 2007 Alumni of the Year medal. Bert graciously visited with many of our students. His experience as a past president of the Washington State Pharmacy Association and many years of leadership with political advocacy make him an important resource for our current student pharmacists. The endowed travel scholarship Bert set up provides travel funding for many of these future pharmacy leaders to become involved in the political process early on. We also had the honor of placing Greg Gibbons’ (’82) 2011 alumnus of the year medal around his neck. It was delightful to see the interactions he and his wife Doris had with so many of their son Seth’s (Pharm.D. candidate, class of 2022) current PY1 classmates.

John White presented our teacher and student awards; our students' nominations for teachers of the year were articulate and heartfelt.

Many thanks to all of our teachers for everything they do day in and day out to prepare the next generation of pharmacy professionals.

Finally, I would like to highlight the success Brandy Seignemartin (Pharm.D. candidate, class of 2020) and her team of collaborators have had with the legislature in Olympia this year. House Bill 1726 has passed and will be signed within the next 30 days. This legislation allows health sciences professional students to be precepted by another discipline when the care being delivered is within the preceptor scope of work. Professor Julie Akers ('99), one of Brandy's mentors, highlights the skill and commitment Brandy brought to this process:

*"When Brandy decided this was going to be her focus for the 2019 legislative session, she did her homework. She reached out to agencies, associations, and commissions from the affected professions nearly a year in advance and gathered their input. She spent countless hours in meetings with stakeholders to ensure there was support, or at least neutrality, toward the bill. In the end, she was able to develop a bill that was extensively vetted and easily passed through a normally arduous legislative process. It is extremely rare to pass a bill in both the House and Senate without a single amendment, but Brandy and her team did it. This new law will have a significant impact on our communities and team-based education. Thank you to Brandy for making this happen."*

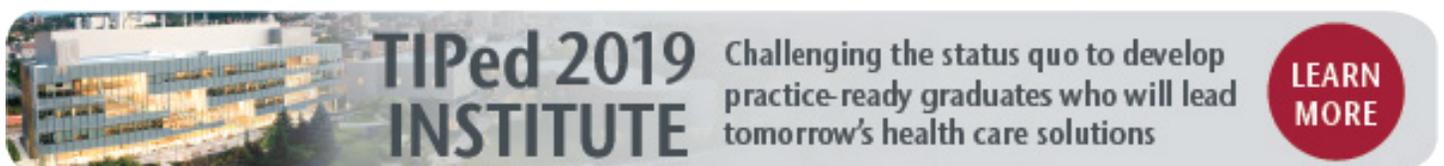
Recognizing this important work, Brandy was awarded the Student Leadership Award at the end of our Spokane evening where we recognized excellence and accomplishments.

As we look forward to commencement this week, I close with a sense of optimism. Our student pharmacists and Ph.D. candidates who will have their degrees conferred on Thursday will go out and do important work in society.

With Cougar Pride,



Linda Garrelts MacLean, BPharm, RPh  
Vice Dean of External Relations Clinical Professor



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## ALUMNI NEWS



### RXIMPACT DAY

Student pharmacist Brandy Seignemartin reflects on her experience at RxImpact Day in Washington D.C.

[Full story on page 10 >>](#)



### ALLEN I. WHITE

Allen I. White lecture continues legacy of advancement through leadership with presentation by Bill J. Smith on Wednesday, April 3, 2019

[Full story on page 10 >>](#)



### GRADUATE STUDENT WINS THREE MINUTE THESIS

Pharmaceutical sciences student Xinyue (Sheena) Dong crowned victorious at the Three Minute Thesis finals in Pullman.

[CPPS pre-qualifier photos »](#)

[Full story on page 12 >>](#)

## ALUMNI UPDATES

- John, class of 1968, and Claudia Swenson checked in from Kauai where they hiked down from the Waimea Canyon State Park visitors center to the Napoli coast overlook. It's a 1,400 foot drop and a 3.8 mile hike each way. [View photos »](#)
- Ryan Ristau, class of 2014, was selected by the University of California, San Francisco LA/OC pharmacy students to receive an Apple for Excellence in Precepting award. In his nomination students wrote, "He creates the perfect balance of self-directed learning as he allows students independently draft their own initial pharmacotherapy assessments, then setting aside ample time to discuss patient care plans." Congratulations Ryan!
- Leslie Martin and Lisa KooHns met up to celebrate Lisa's birthday on Friday, April 26 at the Onion in Spokane. Leslie works at Sacred Heart Hospital Pharmacy and Lisa works at the VA pharmacy. These two have been best friends since they finished pharmacy school in 1992. [View photo »](#)
- WSU alumni gathered in Pullman April 24-25 for the Diamond, Golden and Crimson Grads Reunion. College alumni Timothy Yale, William Sorrels, Barbara Thelen, Kenneth Robinson and William Gaskins from the Golden Grad year, class of 1969, attended the event, as did Robert Lovitt from the Diamond Grad year, class of 1959. [View photo »](#)
- We were sad to hear recently about the passing of our alumni, Russ Leonard.

Want to be listed in our alumni updates? Send us your career information or let us know what you've been up to! [gocougs@pharmacy.wsu.edu](mailto:gocougs@pharmacy.wsu.edu).

## RxImpact Day: students advocate for pharmacy practice

Recently student pharmacist Brandy Seignemartin had the opportunity to participate in the annual National Association of Chain Drug Stores (NACDS) [RxImpact Day](#) in Washington D.C. RxImpact Day allows student pharmacists and other pharmacy advocates from across the nation to share critical patient access issues with legislators.

Seignemartin is a Doctor of Pharmacy candidate in the class of 2020 at the College of Pharmacy and Pharmaceutical Sciences on the Washington State University (WSU) Health Sciences campus in Spokane, Wash. She currently serves as the vice president of legislative affairs for the Associated Students of WSU Health Sciences. When she completes her degree, Seignemartin hopes to become an innovator in pharmacy practice and policy. She has shown a devotion to advocacy through her participation not only in the RxImpact day but also [Coug Day at the Capitol](#) this past January.

Seignemartin shared some of her thoughts on her experience at RxImpact Day...

### RxImpact Reflection

**By: Brandy Seignemartin, Class of 2020**

I had the great honor of being 1 of 56 pharmacy students from across the nation at NACDS RxImpact. Alongside approximately 400 professionals and industry leaders we had the great privilege of carrying the message of increasing patient access to care at community pharmacies to members of Congress from all 50 states. I was on Team Washington with Billy Chow, VP of Pharmacy at Bartell Drugs and Marci Reynolds, Pharmacy Practice Coordinator at QFC Pharmacies. Together, led by a D.C. based government affairs specialist we met with the offices of Senator Maria Cantwell, Representatives Denny Heck and Derek Kilmer while Representatives Suzan DelBene and Cathy McMorris Rodgers met with us personally due to our constituency in their districts.

We invited these legislators to tour pharmacies in their districts and discussed three main issues in regards to patient access. First being the urgency of direct and indirect remuneration (DIR) reform and drug cost transparency for patients, we asked legislators to sign onto a letter to CMS and most members we visited had already taken this action. The next issue we discussed was utilization of pharmacists to combat the opioid epidemic and asked to be added to the list of Medicare providers for opioid related care. We provided information in regard to the unique position of pharmacists in our communities to provide this care, improved patient outcomes with pharmacists as part of the team-based approach, and shared about the knowledge pharmacists possess to care for patients beyond the dispensing function. Finally, we asked our members of Congress to roll out federal measures to decrease opioid use disorder including: 7-day supply limits for acute pain, a nationwide prescription drug monitoring program (PDMP), manufacturer sponsored mail-back envelopes, and mandatory re-prescribing of opioids.

Our messages were well received, but the work is not done. You don't have to fly to D.C. to get involved in increasing patient access to community pharmacy care. Invite your legislators for a pharmacy tour in their home district or reach out NACDS RxImpact to find out how you can be involved in grassroots advocacy. It was a great privilege to represent the WSU College of Pharmacy and Pharmaceutical Sciences in Washington D.C. and carry this message of patient access for all pharmacies in Washington State.

## Allen I. White lecture continues legacy of advancement through leadership

New HIV drug therapies developed by Gilead Sciences were the topic of discussion at the 2019 Allen I. White Lecture presented by Bill J. Smith, Ph.D. on Wednesday, April 3, 2019. Dr. Smith, executive director at Gilead Sciences and head of the Drug Metabolism and Pharmacokinetics (DMPK) department presented, "Long acting therapeutics – pharmacologic, physicochemical, and nonclinical pharmacokinetic

characterization of a novel HIV capsid inhibitor,” to more than 100 students and faculty members of the Washington State University (WSU) College of Pharmacy and Pharmaceutical Sciences (CPPS).

Smith is the most recent in a long line of speakers brought to the college as part of the Allen I. White lectureship. Since the first lecture in 1981, there have been a total of 28 speakers.

The lectureship was established in honor of former CPPS Dean Allen I. White. Dr. White was a pharmaceutical chemistry professor at the CPPS for 39 years. During the last 19 years of his career he also served as dean of the college. Upon his retirement in 1979, Professors Charles Martin and Vishnu Batia wanted to do something to honor Dr. White. Instead of a banquet or a scholarship, White suggested a lectureship.

The purpose of the lecture is to discuss the scientific, social or political aspects of pharmacy or related matters. Speakers are chosen to reflect Dr. White’s professional philosophy: effective leadership does not simply accept change, but views it as an ongoing professional challenge to be grasped and shaped to meet the needs of society.

Dr. Smith fits into this legacy through his ongoing work developing drugs which fit the needs of patients today. According to Smith, “50% of patients do not take medications as prescribed.” He hopes to improve this rate through education, reduced pill burdens and less frequent dosages.

During his lecture, Smith discussed a therapy currently being tested, [GS-6207](#). GS-6207 is a novel, investigational HIV-1 capsid inhibitor which may contribute to future long-acting HIV therapies. The hope is that such therapies will allow drugs to slowly release into HIV patient’s system over a long period of time. This would mean that a small dose of the medication would remain active in the patient’s system for weeks at a time, potentially eliminating the need for near-constant redosings.

Smith has an extensive history in his field, serving as the co-author of 40 research articles, a past editorial board member and associate editor of *Drug Metabolism and Disposition*, and past president of the International Society for the Study of Xenobiotics (ISSX).

Bringing distinguished and renowned speakers, like Smith, to Washington State University to engage with students and faculty is part of how the college strives to advance human health through excellence in collaborative research, scholarship and clinical education, and to develop outstanding health care professionals and scientists. In doing so the college hopes to serve Dr. White’s vision through his lectureship.

“Dean White touched so many students and influenced so many careers,” said Linda Garrelts MacLean, vice dean of the college. “The wisdom he showed when he wrote ‘the best jobs haven’t been started, the best work hasn’t been done’ in 1978 still holds true today.”

White was known for helping and encouraging students to be their very best. Today, there are still those deeply impacted by White’s mentorship. “The influence he had on my career and me as a person continues to this day as I try to provide this same kind of mentorship to my students,” said MacLean.

White embodied this mindset of mentorship and encouragement in both his professional and personal life. Recently, White’s daughter, Connie McNeil shared a similar sentiment with the college:

“We are very proud of Dad and especially of the way he helped and encouraged students and others to be their very best. From what I have learned from alumni letters and reports, he was especially strong in making sure that women did not consider themselves as second-class citizens. I know that my sisters and I never felt that we should consider some sort of lesser career because of our gender. Dad was very proud of our successful careers, and we were/are very gratified that he was proud.”

Even those students who did not have the opportunity to be mentored directly by White were affected by his leadership within the college. “Dr. White had a role in seeing that I received scholarship aid and

providing lab work that paid,” said Julia Marshall, class of 1965. “I felt really lucky and cared for with the scholarship aid and work opportunities. Those opportunities clearly originated through [White’s] capacity as a dean that encouraged and supported opportunities for women.”

Contributions from donors make the Allen I. White lectureship possible. If you are interested in supporting this effort, please visit [www.give.wsu.edu](http://www.give.wsu.edu) and search for the Allen I. White lectureship fund.

Past lectures can be found at [pharmacy.wsu.edu/about-us/history/allen-i-white/](http://pharmacy.wsu.edu/about-us/history/allen-i-white/)

## Three Minute Thesis crowns its 2019 winner

**By Brandon Chapman, College of Education**

Xinyue (Sheena) Dong has won this year’s Three Minute Thesis (3MT) event, held on Wed., March 27.

Dong is a pharmaceutical sciences doctoral student at WSU Spokane in the College of Pharmacy and Pharmaceutical Sciences. Her presentation was titled “Drug Delivery Strategies to Overcome the Blood Brain Barrier.”

This is the fifth year 3MT has taken place at the university level. Each competitor must present their research in no more than three minutes. Judges rate their performance on ability to connect with the audience, as well as present the technical details of their research in a way non-specialized audiences can understand.

Colleges and campuses held their own events, and the nine finalists squared off in the university-wide competition.

In the end, with a presentation one judge deemed to have “just the right amount of humor,” it was Dong whom judges thought stood out the most.

However, President Kirk Schulz, who was a judge for the second year in a row, said all the 3MT presentations were top-notch.

“Every participant did an exceptional job at communicating their research with clarity and passion,” he said. “I’m glad this is an official part of Academic Showcase.”

Winners receive travel grants, sponsored by the Office of the Provost. Dong’s award is \$3,000. Second place, won by Ayumi Manawadu from the Voiland College of Engineering and Architecture, is \$1,500. Third place, won by Srijanie Dey from WSU Vancouver, is \$500.

The College of Education administered this year’s 3MT competition. More information can found at WSU’s [3MT website](#).



## FACULTY SCHOLARSHIP

### Publications

- Pharmacotherapy Professor and Associate Dean of External Professional and Continuing Education **Danial E. Baker** published, “Baloxavir marboxil,” in the 2019 issue of Hospital Pharmacy in April 2019. [View abstract »](#)

- Allen I. White Distinguished Professor **Joshua Neumiller** with one co-author published, “Glycemic metrics and targets in kidney disease,” in Endocrine Disorders in Kidney Disease: Diagnosis and Treatment a book published by Springer in March 2019.
- Pharmacotherapy Clinical Assistant Professor **Kimberly McKeirnan** and Pharmacotherapy Clinical Assistant Professor **Taylor Bertsch** published the poster, “Pharmacists’ opinions of the impact of immunizing technicians on workflow,” at the American Pharmacists Association (APhA) annual meeting in Seattle, Wash. in March 2019.
- **Kim McKeirnan** with one co-author published the poster, “Pharmacy technician opinions about administering immunizations,” at the APhA Annual Meeting.
- **Kim McKeirnan** with two co-authors published the poster, “PQI: vaccination in chemotherapy patients,” at the APhA annual meeting.
- **Kim McKeirnan** with two co-authors published the poster, “Analyzing insurance coverage for pharmacist-administered immunizations,” at the APhA Annual meeting.
- Pharmacotherapy Clinical Assistant Professor (Yakima) **Christina Buchman**, Pharmacotherapy Clinical Assistant Professor **Jennifer Miller**, Pharmacotherapy Clinical Assistant Professor **Julie Akers** and **Kim McKeirnan** published the poster, “Training pharmacy students how to rapid strep test,” at the APhA annual meeting.
- Pharmacotherapy Instructor **Kyle Frazier** and **Kim McKeirnan** published the poster, “Improving motivational interviewing techniques using the patient activation measure (PAM) during patient home visits,” at the APhA annual meeting.
- Pharmacotherapy Research Associate **Andrew Yabusaki**, **Christina Buchman** and **Kim McKeirnan** published the poster, “Fourth year pharmacy student perceptions of academia before and after completing an academic advanced pharmacy practice experience,” at the APhA Annual meeting.
- **Jennifer Miller**, Pharmacotherapy Academic Fellow **Nicole Perea**, **Christina Buchman** and **Kim McKeirnan** published the poster, “Assessing student pharmacists’ ability to administer vaccinations to pediatric patients,” at the APhA annual meeting.
- **Nicole Perea**, **Taylor Bertsch** and **Kim McKeirnan** published the poster, “Can pharmacists bridge the naloxone gap?” at the APhA annual meeting.
- Pharmaceutical Sciences Assistant Professor **Senthil Natesan**, Postdoctoral Research Associate **Jeevan GC** and nine co-authors published, “Integrin activation by the lipid molecule 25-hydroxycholesterol induces a proinflammatory response,” in the peer reviewed scientific journal Nature Communications, on April 1, 2019. [Read article »](#)
- **Senthil Natesan**, **Jeevan GC** and one co-author published, “Does the lipid bilayer orchestrate access and binding of ligands to transmembrane orthosteric/allosteric sites of GPCRs?,” in Molecular Pharmacology, a peer reviewed scientific journal from the American Society for Pharmacology and Experimental Therapeutics (ASPET) on April 8, 2019. [View abstract »](#)

## Presentations

- **Danial Baker** sat on the panel for the Principles for Sound Pharmacy and Therapeutics (P&T) Practices: What’s Next? Academy of Managed Care Pharmacy Partnership Forum and spoke on the

Reflections on the 2013 HHS OIG Report, “Gaps in oversight of conflicts of interest in medicare prescription drug decisions,” on March 28, 2019.

- **Josh Neumiller** and one other presented, “Insulin bootcamp: dosing, monitoring, titrating, and care coordination,” at the APhA Annual Meeting on March 23, 2019
- **Kim McKeirnan** presented, “PharmTalk: innovative practices in community pharmacy services,” at the APhA annual meeting on March 25, 2019.
- **Kim McKeirnan** and two others presented, “Pharmacy technicians and their impact on immunization delivery,” as part of the Federal Pharmacists Forum at the APhA annual meeting on March 22, 2019.
- **Kim McKeirnan** presented, “Methodology for pharmacy practice research,” on March 13, 2019, at the Gulf Medical University College of Pharmacy Ajman, United Arab Emirates via Global/GoToMeeting.com.
- Pharmaceutical Sciences Associate Professor **Mary Paine** co-chaired the symposium, “Natural product-drug interactions: complex mechanisms and public health impact,” at the Experimental Biology/American Society for Pharmacology and Experimental Therapeutics (EB/ASPET) annual meeting on April 6, 2019, in Orlando, Fla.
- **Mary Paine** presented, “Translational approaches to address potential clinically significant enteric xenobiotic-drug interactions” for the Enteric Drug Metabolism and Drug-Drug Interactions symposium at EB/ASPET on April 8, 2019.
- Pharmaceutical Sciences Postdoctoral Research Associate **Dan-Dan Tian** presented the 10-minute talk, “Differential effects of silymarin on pitavastatin disposition in rodent models of simple fatty liver versus nonalcoholic steatohepatitis: a natural product-disease-drug interaction,” for the Natural Product-Drug Interactions: Complex Mechanisms and Public Health Impact symposium at EB/ASPET on April 6, 2019.
- **Dan-Dan Tian** received an \$800 travel award to present at EB/ASPET.
- **Jeevan GC** and six co-authors presented the poster, “Heterotropic cooperativity for CYP3A4-mediated 1'-hydroxylation of midazolam by berberine: an in silico modeling and simulation study,” at EB/ASPET on April 7, 2019.
- **Jeevan GC** and four co-authors presented the poster, “Membrane-facilitated allosteric modulation of GABAA receptor by farnesol: an in silico modeling and simulation study,” at EB/ASPET on April 9, 2019.
- **Jeevan GC** and four co-authors presented the poster, “Membrane-facilitated allosteric modulation of GABAA receptor by farnesol: an in silico modeling and simulation study” at the Washington State University 2019 Academic Showcase on March 28, 2019, in Pullman, Wash.
- **Dan-Dan Tian** presented the poster, “Differential effects of silymarin on pitavastatin disposition in rodent models of simple fatty liver versus nonalcoholic steatohepatitis: a natural product-disease-drug interaction,” co-authored with **Mary Paine**, Pharmaceutical Sciences Research Technologist **Katherine Lynch** (Clarke lab), Pharmaceutical Sciences Assistant Professor **John Clarke** and one other, at EB/ASPET on April 9, 2019.

## Service

- **Danial Baker** was appointed as an instructor development advisor for the Inland Empire Region of the Pacific Northwest Division and the National Ski Patrol by the 2019-2021 National Awards Committee.
- **Danial Baker** was named the Outstanding Outdoor Emergency Care Instructor 2018-2019 by 49 Degrees North Ski Patrol in Chewelah, WA.
- **Josh Neumiller** was elected to serve a 2-year term on the National Rho Chi Society Executive Council as the region VII counselor.
- Pharmacotherapy Clinical Associate Professor **Megan Undeberg** was selected to present her abstract at the at Washington State University's 2019 Academic Showcase.
- Pharmaceutical Sciences Associate Dean for Faculty and Student Development and Professor **Kay Meier** had her term renewed as the editor-in-chief of the ASPET journal Molecular Pharmacology.

## Awards

- Pharmaceutical Sciences Assistant Professor **Shobhan Gaddameedhi** was awarded the 2018-2019 Graduate Program Teacher of the Year at the College of Pharmacy and Pharmaceutical Sciences Celebrating Generosity and Tribute to Excellence ceremony on April 12, 2019, in Spokane, Wash.
- Pharmaceutical Sciences Clinical Assistant Professor **Jeannie Padowski** and Pharmacotherapy Clinical Assistant Professor (Yakima) **Damianne Brand-Eubanks** were voted 2018-19 Teacher of the Year by College of Pharmacy and Pharmaceutical Sciences first-year student pharmacists.
- Pharmacotherapy Clinical Professor **Jean-Baptiste Roulet** and **Christina Buchman** were voted 2018-19 Teacher of the Year by College of Pharmacy and Pharmaceutical Sciences second-year student pharmacists.
- **Kyle Frazier** and Pharmacotherapy Clinical Assistant Professor (Yakima) **Anne Kim** were voted 2018-19 Teacher of the Year by College of Pharmacy and Pharmaceutical Sciences third-year student pharmacists.

## STUDENT ACHIEVEMENT

### Doctor of Philosophy (Ph.D) students

- **Ruby Siegel** (pharmaceutical sciences, Ahmed lab) was inducted into the Washington State University chapter of the SALUTE National Veterans Honor Society at the Veterans Recognition Dinner on April 19 in Pullman, Wash.
- **Panshak Dakup** (pharmaceutical sciences, Gaddameedhi lab) with six others published, "Chemoprotective effects of dietary grape powder on UVB radiation-mediated skin carcinogenesis in SKH-1 hairless mice," in the peer-reviewed Journal of Investigative Dermatology in May 2019. [View abstract »](#)
- **Shannon Kozlovich** (pharmaceutical sciences, Lazarus lab) presented the poster, "Scientists talk with legislators," at the 2019 Experimental Biology Conference (EB 2019) on April 6, 2019, in Orlando, Fla.
- **Yadira Perez-Paramo** (pharmaceutical sciences, Lazarus lab) presented the poster, "Cytochrome P450 enzyme contributions to the n-oxide detoxification pathway of tobacco-specific nitrosamines: a possible role in tobacco-related cancer risk," at EB 2019 on April 7, 2019.

- **Yadira Perez-Paramo**'s poster, "Cytochrome P450 enzyme contributions to the n-oxide detoxification pathway of tobacco-specific nitrosamines: a possible role in tobacco-related cancer risk," was selected as one of the ten finalists for the best poster presentation in the Drug metabolism and Dolores C. Shockley categories during the 2019 ASPET Student/Postdoctorate Poster Competition.
- **Rakshit Tanna** (pharmaceutical sciences, Paine lab) presented the 3-minute talk, "Determining mechanisms underlying the goldenseal-midazolam interaction in humans using an in vitro to in vivo extrapolation approach," for the Daily DataBlitz at EB/ASPET on April 9, 2019.
- **Rakshit Tanna** presented the poster, "Determining mechanisms underlying the goldenseal-midazolam interaction in humans using an in vitro to in vivo extrapolation approach," co-authored by faculty **Mary Paine** and Dan-Dan Tian, at EB/ASPET on April 9, 2019.
- **Irina Teslenko** (pharmaceutical sciences, Lazarus lab) presented the poster, "Glutathione-S-transferases represent a novel pathway contributing to the metabolic clearance of the anti-cancer agent and aromatase inhibitor, exemestane," at EB 2019.
- **Irina Teslenko** won third place for her poster presentation, "Glutathione-S-transferases represent a novel pathway contributing to the metabolic clearance of the anti-cancer agent and aromatase inhibitor, exemestane," at the 2019 ASPET Poster Competition within the Division for Drug Metabolism and Disposition.
- **Christopher Szlenk** presented the poster, "Molecular dynamics simulations reveal a possible membrane-involved micro-kinetic mechanism for long-lasting action of salmeterol, a  $\beta_2$ -adrenergic receptor agonist," at the ASPET Graduate Student/Postdoc Poster Competition at EB/ASPET on April 7, 2019.
- **Christopher Szlenk** presented the poster, "Techniques in developing student engagement with legislative messaging," for the Science Outreach Activity poster session at EB 2019 on April 6, 2019.
- **Christopher Szlenk** presented the poster, "Scientists talk with legislators," at the 2019 Community Engagement Symposium at Whitworth University on April 16, 2019 in Spokane, Wash.
- **Christopher Szlenk** received a \$500 travel award from the WSU College of Pharmacy and Pharmaceutical Sciences to attend EB/ASPET.
- **Christopher Szlenk** with faculty co-authors **Senthil Natesan** and **Jeevan GC** published, "Does the lipid bilayer orchestrate access and binding of ligands to transmembrane orthosteric/allosteric sites of GPCRs?" in *Molecular Pharmacology*, a peer reviewed scientific journal from the American Society for Pharmacology and Experimental Therapeutics (ASPET) on April 8, 2019. [View abstract »](#)
- **Shannon Kozlovich** received the Harriet B. Rigas award for Outstanding Women in Graduate Studies from the Association for Women Faculty on April 3, 2019.
- **Shannon Kozlovich** received a Graduate Student Travel Award from ASPET to attend the EB 2019.
- **Panshak Dakup** was awarded the 2018-2019 Graduate Program Student of the Year at the Celebrating Generosity and Tribute to Excellence ceremony on April 12, 2019. [View photo »](#)
- **Irina Teslenko** received an ASPET travel award to attend EB 2019.
- **Laken Kruger** (pharmaceutical sciences, Denton lab) passed her preliminary exam on April 15, 2019.

- **Irina Teslenko** has been selected to participate in the competitive ASPET Mentoring Network Program for the 2019-2020 cohort.
- **Yadira Perez-Paramo** received an underrepresented minorities travel award (\$800) to attend EB 2019.
- **Shannon Kozlovich** accepted a 2019 President's Award for Leadership on behalf of the Health Sciences Student Advocacy Association at the Lead Ceremony in Pullman, Wash. on April 16, 2019. [View photo »](#)
- **Sabrina Fechtner** was selected by her peers to speak at the 2019 Commencement Ceremony on Thursday, May 2.
- **Ana Vergara** (pharmaceutical sciences, Lazarus lab) attended a board of directors meeting for the Society for Advancement of Chicanos/Hispanic and Native Americans in Science (SACNAS) in Washington DC, from February 20 - 22, 2019.
- **Ana Vergara** received the Sue Harriet Monroe Mullen Graduate Travel Award from the WSU College of Pharmacy to attend EB 2019.
- **Ana Vergara** with faculty co-author Philip Lazarus and two others presented the poster, "Glycosylation of polycyclic aromatic hydrocarbons by UDP-glycosyltransferase 3A2 (UGT3A2) and aerodigestive tract tissues," at the ASPET Student/Postdoc Poster Competition in the Division for Drug Metabolism and Disposition and the Dolores C. Shockley Poster Award at EB2019 on April 7, 2019.
- **Ana Vergara** with faculty co-author Philip Lazarus and two others presented the poster titled, "Glycosylation of polycyclic aromatic hydrocarbons by UDP-glycosyltransferase 3A2 (UGT3A2) and aerodigestive tract tissues," at EB 2019 on April 8, 2019.
- **Kari Gaither** (pharmaceutical sciences, Lazarus lab) was selected to give the oral presentation, "microRNA 520b mediates ATF5 expression under diverse cellular stress in cancer cells," within the ASBMB Non-Coding RNA section at EB 2019.
- **Kari Gaither** presented the poster, "microRNA 520b mediates ATF5 Expression under diverse cellular stress in cancer cells," at EB 2019.
- **Kari Gaither** received an ASBMB travel award to attend EB 2019.

### Doctor of Pharmacy (Pharm.D.) students

- The Student National Pharmaceutical Association received a 2019 President's Award for Leadership at the Lead Ceremony. [View photo »](#)
- **Amber Leah Duldulao** received a 2019 President's Award for Leadership at the Lead Ceremony. [View photo »](#)
- **Joanna Gourley** received a 2019 President's Award for Leadership at the Lead Ceremony. [View photo »](#)
- **Yongmin Ko** received a 2019 President's Award for Leadership at the Lead Ceremony. [View photo »](#)
- **Chantel Robinson** received a 2019 President's Award for Leadership.
- **Brandy Seignemartin** received a 2019 President's Award for Leadership at the Lead Ceremony. [View photo »](#)

- **Cameron Yang** received a 2019 President's Award for Leadership at the Lead Ceremony. [View photo »](#)
- **Brian Wu** was selected as the WSU College of Pharmacy and Pharmaceutical Sciences Student of the Year for the class of 2022 in Yakima. [View photo »](#)
- **Minwoo Park** was selected as the WSU College of Pharmacy and Pharmaceutical Sciences Student of the Year for the class of 2021 in Yakima. [View photo »](#)
- **Lejla Mlivic** was selected as the WSU College of Pharmacy and Pharmaceutical Sciences Student of the Year for the class of 2020 in Yakima.
- **Siavosh Naji-Talakar** was selected as the WSU College of Pharmacy and Pharmaceutical Sciences Student of the Year for the class of 2022 in Spokane. [View photo »](#)
- **Kayla Treharne** was selected as the WSU College of Pharmacy and Pharmaceutical Sciences Student of the Year for the class of 2021 in Spokane.
- **Johanna Pantig** was selected as the WSU College of Pharmacy and Pharmaceutical Sciences Student of the Year for the class of 2020 in Spokane. [View photo »](#)
- **Frank Nenninger** was selected by his peers for the Student Leadership Award for Yakima. [View photo »](#)
- **Brandy Seignemartin** was selected by her peers for the Student Leadership Award for Spokane. [View photo »](#)
- **Zohal Sarwary** (Yakima) was selected by her peers to speak at the 2019 Commencement Ceremony on Thursday, May 2.
- **Boris Zhang** was selected by his peers to speak at the 2019 Commencement Ceremony on Thursday, May 2.

## Jobs

- [Associate/Full Professor](#): Department of Pharmaceutical Sciences
- [Postdoctoral Research Associate](#): Wu Laboratory



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