

April 2020

A NOTE FROM LINDA GARRELTS MACLEAN

Dear Friends and Colleagues:

The last few weeks have come as a complete shock to many of us. Unprecedented is the one word that describes what is happening worldwide, in our nation, and the state of Washington. As destructive as this pandemic has been to so many families, students and businesses, I am in awe of the creativity, community, and resolve that it has brought out in our faculty, staff and students.

In so many ways, our faculty and staff have gone above and beyond to help each other to design a plan so that our students can continue on successful learning paths. Looking forward to the next few weeks and months, I would like to share with you [my communication to faculty and staff](#) about facing fear and doing the right thing during uncertain times.

One of the main challenges we face during this pandemic is not only to get our students to successfully complete their degrees, but to ensure they graduate on time. Several students have been displaced from their rotations, but for the majority of our students, their final blocks have been their first real-world tests as health care providers and a once-in-a-lifetime experience in treating patients during a time of crisis.

With a heavy heart, we have also had to cancel commencement this year. Given the current situation in Washington state, we cannot safely hold this celebration in good conscience without impacting the efforts by public health officials to mitigate the spread of COVID-19. While this year's challenges have been unprecedented, it should not diminish our students' accomplishments in any way. Conversely, I hope it reinforces their roles as health care providers and their important responsibility to protect the health of the communities they serve.

On behalf of the leadership at the College of Pharmacy and Pharmaceutical Sciences, we hope that you and your families are doing well during these challenging times. Leading our students, colleges, businesses, families and communities requires courage, but I am certain that it will all make us stronger when we come out at the other side of this. Whether you are a partner in our school, alumni, or colleagues at other pharmacy schools, you are in our hearts and we will get through this together.

You can read all the latest announcements from our college to our students, faculty and staff on our [COVID-19 webpage](#).

Creativeness, flexibility, visionary thinking and problem solving, willingness to work hard, and an unparalleled dedication to our program and each other is what I see day in and day out at our college. I have every confidence that we will work through these bumps without trepidation.

With much respect,



Linda Garrelts MacLean, interim dean
WSU College of Pharmacy and Pharmaceutical Sciences



Top Stories

The beauty of everyday things: where pharmacy and artistry meet

What do pharmacy and painting have in common? According to first-year pharmacy student Karen Vo: a lot.

When Vo started in the Doctor of Pharmacy program at WSU in fall of 2019 she was among many new student pharmacists being asked to tell their new classmates about themselves.

“It’s still weird to say, I’m an artist,” she recalls.

But that is precisely what she is.

Vo’s artwork depicts wildlife—an interest she attributes to being raised in the scenic Washington state. She explained that as she has spent more time on her artwork in recent years she has become more aware of the wildlife that surrounds her.

“I’ve never thought about what might be sitting in the backyard,” said Vo.

In particular, she’s found she is more apt to notice the number and variety of birds she can see simply looking out her window. These birds often become the subjects of her artwork, as does wildlife from around the world.

“I’ve always dreamt of visiting countries with significant biodiversity,” said Vo. “I consider my art and research as a way of working towards that dream.”

Each painting takes her approximately 6-8 hours while drawings can take around 12 hours. The research for each piece can take 1-2 hours which Vo spends learning more about her subjects so she can make her artwork as accurate as possible.

“Art can be incredibly technical,” Vo explained. “There’s a lot of planning involved.”

This technical nature is one of the many similarities Vo has found between her artwork and pharmacy studies. Vo noted that both require a certain level of attention to detail and observation.

“[In pharmacy] being able to note small things can make an impact,” Vo explained.

Vo’s artwork is the same, her attention to small details help make her pieces all the more realistic.

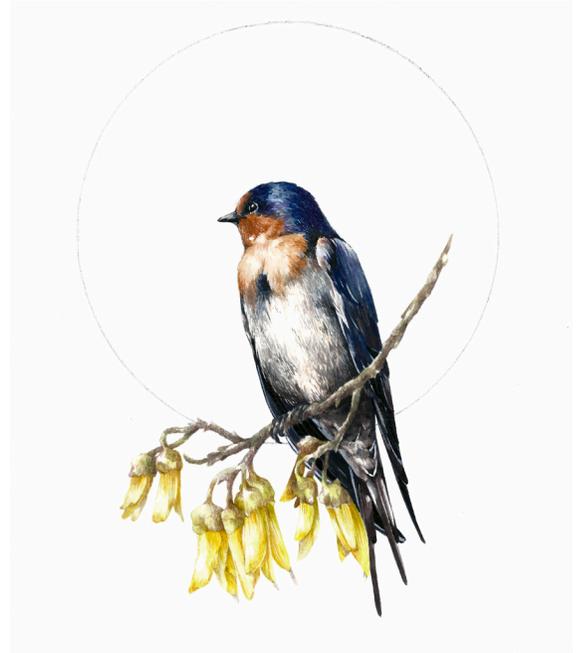
But as alike as her dual roles as student pharmacist and artist are, there are also some key differences.

“Drawing helps ground me,” Vo said, “even if it doesn’t come out how I want it to, just putting it out there is really therapeutic.”

Vo explained that when she has taken a break from her art in the past she has missed it; her artwork is a part of who she is beyond a student, or a club member, or an employee.

“It’s hard to describe the satisfaction of putting a line on paper of the weight of the pencil in my hand... the satisfaction of putting the pen on paper,” said Vo.

You can see Karen Vo’s artwork through her Instagram [@vokrn](#) or on her [online portfolio](#).



“Sylvia” – A welcome swallow depicted with kōwhai flowers

First-ever Allen I. White speaker returns to WSU to share his revolutionary research

39 years ago, Leslie Z. Benet was the first-ever presenter for the Allen I. White lectureship. This March, he was welcomed back to the WSU College of Pharmacy and Pharmaceutical Sciences to present his groundbreaking theory on the impact of protein binding and drug transporters on in vitro-in vivo extrapolation (IVIVE), an approach used commonly in drug development to predict the pharmacokinetics of drugs in the body from experimental models. For people studying and working in pharmaceutical sciences, Benet is basically a rock star.

“We grew up reading [Les Benet’s] books,” said pharmaceutical sciences graduate student Shamema Nasrin. “He revolutionized the pharmacokinetic field, so his being here is a big deal! He is a celebrity in the field of science.”

Benet is a professor and former chairman (1978-1998) of Bioengineering and Therapeutic Sciences, University of California San Francisco (UCSF). Before moving to UCSF, Benet served as an assistant professor of pharmacy at WSU. He received his AB, BS and MS from the University of Michigan, and PhD from UCSF. He has received nine honorary doctorates.

Dr. Benet has published over 590 scientific articles and book chapters, holds 12 patents and edited 7 books. Clarivate Analytics lists him among the most highly cited pharmacologists worldwide with his peer reviewed publications referenced on more than 28,000 occasions.

“As an undergrad I read everything he published. His work has been so impactful on my education and I’m so glad that I had a chance to hear him speak,” said Pravita Baliyepalli, a pharmaceutical sciences graduate student.

Over 100 students, faculty, researchers and friends of the college gathered in the Walgreens Auditorium at the College of Pharmacy and Pharmaceutical Sciences in Spokane earlier this month to attend Benet’s lecture. The Allen I. White lectureship was established on Feb. 12, 1979, by professors Charles Martin and Vishnu Batia as a tribute to Dean Allen White. The two professors wanted to do something to honor Dr. White upon his retirement in 1979. Dr. White did not want a banquet or a scholarship, and suggested the 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. Allen I. White served on the pharmacy faculty for 39 years and was Dean of the WSU College of Pharmacy from 1960 to 1979.

Contributions from donors make the Allen I. White lectureship possible. If you are interested in supporting this effort, please visit foundation.wsu.edu/give/ and search for the Allen I. White lectureship fund.

Past lectures can be found at pharmacy.wsu.edu/about-us/history/allen-i-white/

WSU student pharmacist serves as first-ever ACVP student board member

For the first time, the American College of Veterinary Pharmacists (ACVP) national board has added a student member who hails from the WSU College of Pharmacy and Pharmaceutical Sciences.

After receiving the Pharmacist Mutual/ACA Foundation Community Pharmacy Scholarship last year, fourth year pharmacy student Joanna Gourley had the opportunity to attend the ACVP annual meeting and board meeting. While there she proposed the addition of a student to the national board. The ACVP was established to support independent pharmacists to develop and strengthen services they provide for animals and veterinarians.



Leslie Benet (center) with pharmaceutical sciences graduate students.



Joanna Gourley

“Student members are the future of every organization and I wanted to improve the connection so more students would continue as pharmacist members after graduation,” said Gourley. “Adding a student to the national board gives all students a voice in the organization.”

The ACVP took her proposal to heart, making Gourley herself the first student on the ACVP national board of directors. She started her term this past February and will continue until the 2021 annual board meeting during the ACA/ACVP Annual Conference set to take place in February 2021.

In her role as a student board member her primary task is to foster a stronger connection between the national organization and the student chapters. She will be working with ACVP student chapters throughout the nation.

After she graduates from WSU, Gourley hopes to follow her passion for veterinary pharmacy into a career.

Spotlight on Success

What role does sleep play in sun damage and skin repair?

In 2010, the International Agency for Research on Cancer under the World Health Organization recognized night shift work that disrupts the circadian rhythm as “probably carcinogenic to humans.” This official recognition of the link between cancer and sleep disruption was a defining moment for Dr. Shobhan Gaddameedhi, an assistant professor in the Department of Pharmaceutical Sciences.

“Growing up, my grandfather always told me, prevention is better than therapy. I have always been interested in biology, and if I can understand cancer, skin biology, and how they function with our circadian clock, then I can help humanity to prevent cancer,” he tells WSU.

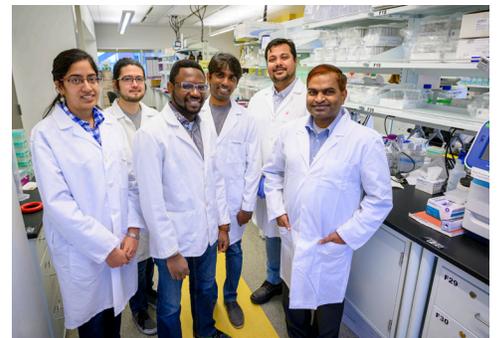
Gaddameedhi has spent more than a decade researching the circadian rhythm and how it impacts factors which raise the risk of cancer and other metabolic disorders such as diabetes and obesity. His most recent discovery reveals the link between disruptions in the circadian clock to skin cancer.

“One instance of sunburn can double your chances of developing melanoma,” says Gaddameedhi, who published his findings on circadian clock controls on sunburn erythema in the *Journal of Investigative Dermatology* in 2015. A healthy circadian clock and sleep matters too for one’s response to sunlight exposure, according to the latest discovery in Gaddameedhi’s research lab. For example, sun exposure when paired with circadian disruption due to rotating shifts potentially increases the risk of developing melanoma, the deadliest form of skin cancer. A good night’s rest reinforces the body’s ability to defend against DNA damage due to sun exposure. In other words, the time of day that one is exposed to UVB rays can significantly impact the body’s ability to guard against DNA damage.

Gaddameedhi’s research team, which is funded by the National Institutes of Health (NIH), the American Heart Association, Melanoma Research Alliance, and the Department of Defense, will continue their research on how the circadian clock regulates melanin pigmentation and the skin’s ability to protect against DNA damage from UVB exposure.

Gaddameedhi hopes that his research will provide a window into how simple lifestyle changes through a healthy circadian clock and sleep can help to improve overall health.

“20 million people in the United States do shift work. This is why NIH-funded research predominantly focuses on shift work. However, there are so many people affected by poor sleep due to their circadian clock disruption. This includes nurses, pilots, flight attendants, fire fighters, police, guards, and people who suffer from sleep disorders. If I can understand the link between metabolic disorders, cancer and sleep then I can give this knowledge back to the community,” says Gaddameedhi.



Shobhan Gaddameedhi’s research team (left to right): Jinita Modasia, Kenneth Porter, Panshak Dakup, Bala Koritala, Soumyadeep Sarkar, and Shobhan Gaddameedhi

10,126 miles and worlds away: Yakima student pharmacists gain a global perspective in South Africa

Approximately 1 in 5 individuals in South Africa have HIV. The country is one of the largest epicenters of the HIV epidemic in the world with 7.7 million people living with the disease. That's nearly the population of New York City. In the summer of 2019, WSU student pharmacists visited Cape Town, South Africa, to work with patients, doctors and pharmacists at health care institutions, allowing them to see the frontlines of HIV treatment and prevention, including application of precision medicine.

"I knew the health system would be very different from that in the United States however the extent of that difference was a bit of a surprise," said student pharmacist Chad Schmitt. "Seeing people who have so little and don't have things I take for granted, like electricity and clean water, makes me appreciate everything I have."



Third year pharmacy students wave the flag in South Africa with Clinical Associate Professor Rustin Crutchley. Left-right: Chantel Robinson, Rozita Zandkargar, Rustin Crutchley, Chad Schmitt

He and fellow College of Pharmacy and Pharmaceutical Sciences student pharmacists Rozita Zandkargar and Chantel Robinson spent two weeks learning about HIV treatment firsthand in Cape Town. The experience was part of a new 6-week international Advanced Pharmacy Practice Experience (APPE) spearheaded by Dr. Rustin Crutchley, clinical associate professor in the Department of Pharmacotherapy at the WSU Yakima extension.

"I wanted students to have an opportunity to learn about a new culture and gain a global health perspective that could make them more well-rounded in their view of care of individuals living with HIV," said Crutchley, who specializes in antiretroviral treatment and precision medicine in HIV patient populations.

At the Helderberg Community Health Clinic, students shadowed HIV physicians throughout their day, watching as they interacted with patients. The clinic sees about 300 to 400 patients per day with a total patient population of 3,500. On a day dedicated to children living with HIV, they saw 10 patients in just two hours.

The student pharmacists spent most of their time with Dr. Renier Coetzee's masters in clinical pharmacy students from the University of Western Cape (UWC) School of Pharmacy. Coetzee is one of the leading pharmacists in developing the Clinical Pharmacy program in South Africa. Working with their South African peers, WSU students developed a better understanding on how pharmacy functions in the country including its role in different institutional settings. Off-campus, the WSU group also observed UWC students at the Tygerberg Hospital—the second largest hospital in South Africa with 1,400 beds. The experience exposed student pharmacists to managing patient cases such as TB meningitis and Kaposi's sarcoma that are rarely observed in the US.

"One of the primary goals of this rotation is to plant seeds in students that change their lives so that they can in turn change patients' lives,"

On one of the days, students traveled to Khayelitsha, one of the poorest areas in Cape Town, with a population of nearly 400,000 people and the largest HIV clinical site in the city. The clinic serves 11,000 patients living with HIV, with as many as 70-80% of whom also live with tuberculosis (TB). The primary health care facility, which provides HIV, AIDS and TB-related treatment, care and support services, gave WSU student pharmacists a unique chance to watch physicians in action as they worked with patients. The clinic was the first site in South Africa where patients received antiretroviral medications, a common HIV treatment worldwide, to help prevent the progression of the virus.

"Seeing such a deficit in care and the need of such a large population tugged at my heart. While there I kept thinking, 'how can I get back here to help and what can I do to help these patients,' " said Robinson. "It has always been a goal of mine to serve the underprivileged and underserved, and this experience has reignited this passion... it is an experience that I will never forget and has helped shape my future."

While in Khayelitsha, the WSU team also observed the HIV vaccine clinical trial unit. Student pharmacists learned about the latest, novel HIV vaccine clinical trials that are currently ongoing at this site.

"One of the primary goals of this rotation is to plant seeds in students that change their lives so that they can in turn change patients' lives," said Crutchley.

Thank you to our IT department!

On behalf of the students, faculty and staff at the WSU College of Pharmacy and Pharmaceutical Sciences, we want to thank our awesome IT team. They have been working tirelessly to ensure faculty, students and staff are staying connected virtually in a time of social distancing.



PHILANTHROPY FOCUS

Gerald Briggs, class of 1968, made a generous contribution to support scholarships for student pharmacists interested in obstetric pharmacy. Dr. Briggs, who has authored two books on obstetric pharmacy and helped develop online curriculum for WSU on this subject, was also named the Alumnus of the Year for the College of Pharmacy and Pharmaceutical Sciences in 2008 and received the distinguished service award from the college in 2016.

Alumni News

Cancellations:

- The Golden Grads reunion that was slated for the end of April for the Class of 1970 has been postponed indefinitely. Class Captain Wayne Clemens is encouraging everyone to plan to attend the College of Pharmacy and Pharmaceutical Sciences Homecoming Weekend and Crimson Gala in October in Spokane and Pullman.
- Tribute to Excellence events in Yakima and Spokane that were scheduled for April have also been canceled. Honorees will be recognized during the VIP Reception at the Crimson Gala on October 2.

It is all of our hope that life will return to normal soon. Be safe and healthy everyone.

Other News

Zoom backgrounds available!

Miss being on campus? You can pretend you're still there with [College of Pharmacy and Pharmaceutical Sciences](#) and [WSU Health Sciences](#) Zoom backgrounds.

Faculty Scholarship

PUBLICATIONS

Pharmaceutical Sciences Postdoctoral Research Associate **Peng Xia**, Pharmaceutical Sciences Postdoctoral Research Associate **Jingrui Chen**, Pharmaceutical Sciences Assistant Professor **Zhaokang Cheng** and two co-authors published, "Doxorubicin induces cardiomyocyte apoptosis and atrophy through cyclin-dependent kinase 2-mediated activation of forkhead box O1," in the Journal of Biological Chemistry, a weekly peer-reviewed scientific journal that is published by the American Society for Biochemistry and Molecular Biology. [View abstract](#)

Pharmacotherapy Clinical Professor **Terri Levien** and J. Roberts and Marcia Fosberg Distinguished Professor of Pharmacotherapy **Danial Baker** published, "Drug evaluation – asenapine transdermal system (Secuado)," in Wolters

Kluwer Health's The Formulary Monograph Service (FMS) in February 2020. Wolters Kluwer Health is a drug and health information publisher, the FMS is a resource used in the formulary decision making process for hospitals and managed care systems on recently released and investigational drugs.

Terri Levien and Danial Baker published, "Drug evaluation – afamelanotide (Scenesse)," in the FMS in February 2020.

Danial Baker published, "Drug evaluation – cetirizine hydrochloride injection (Quzyttir)," in the FMS in February 2020.

Drug Information Center Resident Brittany Craft and Danial Baker published, "Drug Evaluation – Cefiderocol (Fetroja)," in the FMS in February 2020.

Danial Baker published, "Drug evaluation – elexacaftor, ivacaftro, tezacaftor; ivacaftor (TriKafta)," in the FMS in February 2020.

Danial Baker published, "Drug utilization evaluation – cefiderocol (Fetroja)," in the FMS in February 2020.

Danial Baker and two co-authors published, "Decentralize-change-recentralize model of drug information networks in health centers: decentralized drug information services," in Innovations in Pharmacy in January 2020. [View abstract](#)

Allen I. White Distinguished Associate Professor of Pharmacotherapy Joshua Neumiller published the Powerpak C.E., "Finding the recipe for success in diabetes: achieving targets with oral combination therapy," for Postgraduate Healthcare Education in February 2020. [View the activity](#)

PRESENTATIONS

Pharmacotherapy Clinical Associate Professor Kimberly McKeirnan presented, "Methodology for pharmacy practice research," to the Gulf Medical University College of Pharmacy in Ajman, United Arab Emirates via Global/GoToMeeting.com on February 25, 2020.

Student Achievement

PHARMACEUTICAL SCIENCES (PH.D.) STUDENTS

Yuening Liu (pharmaceutical sciences, Cheng lab) with faculty co-authors Peng Xia, Jingrui Chen, Zhaokang Cheng and one other co-author published, "Doxorubicin induces cardiomyocyte apoptosis and atrophy through cyclin-dependent kinase 2-mediated activation of forkhead box O1," in the Journal of Biological Chemistry, a weekly peer-reviewed scientific journal that is published by the American Society for Biochemistry and Molecular Biology. [View abstract](#)



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