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FACULTY SCHOLARSHIP

A MESSAGE FROM GARY M. POLLACK



June 2017

Dear Friends and Colleagues:

Another academic year is in the books, and we have moved on from endless snow, flooding, and mosquito infestations of truly biblical proportions, to absolutely gorgeous eastern Washington (late) spring weather.

The highlight of May for us, of course, was commencement. Our college conducts its own commencement exercises, which we have done for the past six years. Our students and their families are effusive in their thanks for having the opportunity to participate in such an intimate celebration focused solely on the achievements of our graduates. I would like to add a special thank-you to the college's staff, whose efforts are integral to the success of this event. It is truly an appropriate and impressive send-off for our newest alumni.

Each graduating class has its own unique character that sets it apart from those that came before and those that will follow. The class of 2017 is no different in that regard, and in fact will remain firmly affixed in my memory as a "pioneer" class. Our graduating Doctor of Pharmacy students were the first class to pursue all of their coursework on WSU's Health Sciences campus in Spokane. In order to accomplish this feat, they tolerated somewhat less-than-ideal classroom and laboratory environments until our current home, the Pharmaceutical and Biomedical Sciences Building, was complete late in the fall semester of their first year in the program. Most of our Doctor of Philosophy students migrated to Spokane from Pullman the following spring.

The class of 2017 also was the first group of students to complete the Pharm.D. degree under a competency-based grading framework. They had to learn how to be successful in sitting through every-other-week "block exams" administered on a computer platform while the faculty were learning how to administer that type of examination. The patience demonstrated on all sides was formidable.

Finally, the class of 2017 included the first group of students to complete the college's honors program and to graduate with a formal designation of "with honors." I was especially proud of our honors students, and the faculty who mentored them.

With best wishes for an enjoyable snow, flood, and bug-free summer,

A handwritten signature in black ink that reads "Gary".

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

UPCOMING EVENTS

JUNE

3

CougaRx Nation &
Mentor Reception
NW Pharmacy Convention
[RSVP](#)

JUNE

13

TIPed Institute
WSU Spokane
June 13- 15
[View details](#)

JULY

29

Pre-game Reception
WSUAA Coug Day at the
Mariners
[View details](#)

AUGUST

17&18

White Coat Ceremonies
[Spokane, Aug.17](#)
[Yakima, Aug.18](#)

[More college events »](#)

COLLEGE NEWS



College of Pharmacy celebrates graduates' success

SPOKANE, Wash.—Thursday, May 4, the Washington State University College of Pharmacy celebrated the accomplishments of four Ph.D. and 92 Doctor of Pharmacy graduates at its 2017 Commencement Ceremony. Faculty, family and friends gathered at the Fox Theater in downtown Spokane to honor the newly minted alumni of the college.

American Pharmacist Association CEO Tom Menighan gave the keynote address and urged the graduates to find their passion within pharmacy.

“Those who build connections and continue their lifelong learning will excel,” he said.

Menighan urged the graduates to let the encouragement they get from their peers to fuel their courage to take the “flying leaps” that will advance their careers and make the positive change they want to see in the pharmacy profession.

He challenged the graduates to practice at the top of their license, which means to continually seek new responsibilities and ways to challenge the stereotype of what a pharmacist does in order to show how a pharmacist can contribute to the health and wellness of individuals and communities.

“Patients need more than the knowledge we staple to a bag. They need your coaching to gain the knowledge, skills and performance necessary to improve lifelong outcomes. You can fill that need. Our job is to help accelerate that change,” he said.

Menighan offered leadership insights to the graduates including show up, get connected, be persistent, stay engaged, and to serve with gratitude.

“Today, I am proud to call you fellow pharmacists,” said Menighan. “Thank you in advance for what you will do to improve health care in America.”

Senior awards were given out at a special luncheon the previous day, following the commencement rehearsal. The 2017 Doctor of Pharmacy student awardees were:

- Courtney Mayo: APhA-ASP Senior Recognition
For the greatest contribution to advancing pharmacy profession through outstanding service to American Pharmacist Association-Associated Student Pharmacists.
- Teri Lopez and Derek Matlock: WSU College of Pharmacy Faculty Award

For outstanding grades, membership and participation in pharmacy organizations, and work characteristics as evidenced in the laboratory, classes and internships.

- Andrew Pascal: Lilly & Co. Achievement Award
For superior scholastic achievement in the professional curriculum; leadership qualities; strong professional attitude.
- Carl Manhardt: Natural Medicines Recognition
For exhibited interest and expertise related to natural medicines, including efforts to minimize adverse effects due to inappropriate use and to encourage evidence-based approach to natural medicines.
- Cody Ray: TEVA Pharmaceuticals USA Outstanding Student
For excellence in the study of pharmacy.
- Courtney Mayo: Facts and Comparisons Excellence in Clinical Communication Award
For being in the top 25% of the class and demonstrating superior verbal and written clinical communication skills.
- Alyssa Sun and Parminder Sekhon: Merck Award for Outstanding Students
For two students with highest GPA in the class.
- Jeffrey Crouch: Mylan Pharmaceuticals Excellence in Pharmacy
For being in top 25% of the class and demonstrating high professional motivation and the intent to enter practice upon graduation.
- Hope Tran: Larry G. Bettesworth Health System Pharmacy Student Award from Providence Health Care Foundation in Spokane
For a graduating pharmacist interested in pursuing continued training in a health-system pharmacy residency.



WSU researchers deliver first “nanotherapeutics” to tumor

By Eric Sorensen, WSU News

SPOKANE, Wash. – For the first time, WSU researchers have demonstrated a way to deliver a drug to a tumor by attaching it to a blood cell. The innovation could let doctors target tumors with anticancer drugs that might otherwise damage healthy tissues.

To develop the treatment, a team led by Zhenjia Wang, an assistant professor of pharmaceutical sciences, worked at the microscopic scale using a nanotherapeutic particle so small that 1,000 of them would fit across the width of a hair. By attaching a nanoscale particle to an infection-fighting white blood cell, the team showed they can get a drug past the armor of blood vessels that typically shield a tumor. This has been a major challenge in nanotechnology drug delivery.

The researchers reported on the technique in the latest issue of the journal *Advanced Materials*.

Working with colleagues in Spokane and China, Wang implanted a tumor on the flank of a mouse commonly chosen as a model for human diseases. The tumor was exposed to near-infrared light, causing an inflammation that released proteins to attract white blood cells, called neutrophils, into the tumor.

The researchers then injected the mouse with gold nanoparticles treated with antibodies that mediate the union of the nanoparticles and neutrophils. When the tumor was exposed to infrared light, the light’s interaction with the gold nanoparticles produced heat that killed the tumor cells, Wang said.

In the future, therapists could attach an anticancer drug like doxorubicin to the nanoparticle. This could let them deliver the drug directly to the tumor and avoid damaging nearby tissues, Wang said.

“We have developed a new approach to deliver therapeutics into tumors using the white blood cells of our body,” Wang said. “This will be applied to deliver many anticancer drugs, such as doxorubicin, and we hope that it could increase the

efficacy of cancer therapies compared to other delivery systems.”

Wang and Chu’s colleagues on the research are postdoctoral researcher Dafeng Chu, Ph.D. student Xinyue Dong, Jingkai Gu of Jilin University and Qi Zhao of the University of Macau. The work was funded by the National Institutes of Health.

The research is in keeping with WSU’s Grand Challenges that focus on areas of research addressing some of society’s most complex issues. The study is particularly relevant to the challenge of sustaining health and its theme of treating disease.



WSU partnering with Japanese company in radiochemistry

By Maegan Murray, WSU Tri-Cities

RICHLAND, Wash. – The U.S. Transuranium and Uranium Registries, operated by Washington State University, will sign a memorandum of understanding with Kyushu Environmental Evaluation Association of Japan on Tuesday, May 16, at WSU Tri-Cities in Richland to partner for research opportunities, student experiences and the general sharing of knowledge.

KEEA’s radioanalytical section has been involved with Japan’s environmental monitoring

following the 2011 accident at the Fukushima Daiichi nuclear power plants. The purpose of KEEA is to contribute to the conservation and maintenance of the environment in Japan, and protect the health and life of the local community.

In addition to signing of the memorandum of understanding, representatives from KEEA will tour the U.S. Transuranium and Uranium Registries (USTUR) facilities in Richland and discuss collaboration projects, in addition to current and future research efforts.

Sergei Tolmachev, director of the USTUR, said partnering with KEEA presents a great opportunity for the global sharing of knowledge and research. WSU’s USTUR is a research program that studies actinide elements, such as plutonium, americium and uranium, that have been deposited within the human body – more specifically in persons with measurable, documented exposures to those radioactive elements.

“From an academic environment, it is a tremendous opportunity,” Tolmachev said. “Through partnerships like these, there are great research possibilities, especially on a global scale. We will have the capability to share materials available at the registries and further our research reach.”

Noriyuki Momoshima, president of KEEA, said his organization is excited about learning the techniques on radiochemical analysis of transuranium elements in humans from the USTUR.

“The technique is attractive because the KEEA has limited experience on biological sample analysis,” he said. “The technique will improve our analytical skill and will expand our business.”

Tolmachev said the USTUR will benefit from sharing testing materials that will allow them to broaden their scope of research, as well as provide them with additional testing capabilities for projects that have been put on hold due to larger-scope projects.

“It’s a unique partnership for KEEA because there aren’t a lot of academic environments that have a fully running radiochemistry lab,” he said. “We both have a lot to learn and gain from one another.”

A MESSAGE FROM LINDA GARRELT'S MACLEAN



Dear Alums, Colleagues and Friends of Pharmacy,

As we prepare to host our second Transformation and Innovation in Pharmacy Education (TIPed17) Institute here in Spokane this month, my mind has been naturally revolving around the topic of leadership. Specifically, how we can grow our community of pharmacy educators dedicated to advancing the pharmacy profession, and how we can share our knowledge and expertise in preparing graduates to enter the profession as leaders.

Whether they are serving in national leadership roles, creating and implementing elective pharmacy courses, or contributing to research that will impact patient care, our student pharmacists are prepared to enter the practice of pharmacy as leaders, innovators and collaborators.

This is not a coincidence; we are dedicated to developing outstanding health care professionals and it starts with our definition of leadership:

“Help students embrace the moral purpose that underpins the profession, develop the ability to use tools and strategies needed to affect positive change in pharmacy practice and health care delivery, and foster excellence in others.”

Our innovative curriculum empowers students to be effective communicators and leaders beginning in their first year, and our focus on leadership development continues throughout the program. Our competency-based approach means our students demonstrate understanding of the curriculum holistically, and enter the profession as practice-ready graduates with the capabilities to lead tomorrow's health care solutions through team-based care.

The WSU College of Pharmacy is truly at the forefront of pharmacy education that is defining the new role for the pharmacist as part of the health care team.

One of the reasons we are able to consistently provide such a unique and exemplary learning environment is because of you: our outstanding network of Cougar pharmacists, preceptors and community partners who contribute to the development of our student pharmacists. For example, Russ Myers, president and CEO at Virginia Mason Memorial Hospital (class of 1977), and Carol Vanevenhoven, senior director of women's and children's services at Virginia Mason Memorial Hospital (class of 1999), are both pharmacy leaders who work with our students in Yakima. They created and presented the seminar, “What does the path from pharmacist to CEO look like?” Our students were inspired and gained insight about how non-linear the path to success can be.

Another nationally recognized leader in health care who has interacted with our students is Tim Rice, CEO emeritus for Cone Health (class of 1977). His messaging centered on a continued need to develop professionally and to hone leadership skills, especially in light of the complexities associated with health care organizations.

Our students learn valuable lessons by hearing stories from our alumni! Whether you serve as a professional mentor, as IPPE or

APPE preceptor, or contribute to student scholarships and college programs, you are impacting the future of pharmacy for the better.

I am looking forward to hosting our friends and peers in pharmacy education in just a few short weeks for TIPed17, and I want to say thank you to our Cougar pharmacy family for your contributions that make our program what it is, which is leading the way in pharmacy education. As Dean Pollack says often, you make us great!

With Cougar Pride,



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

ALUMNI NEWS



STUDENT NEWS

Mark Nguyen, class of 2019, wrote about removing the stigma behind HIV and how APhA-ASP collaborated with other organizations to offer point of care services at an interprofessional health fair. [Read more »](#)



ALUMNI SPOTLIGHT

If you ask Patrick Tabon what he does for a living, chances are the answer you get will be something like, "patient advocate who focuses on solutions that benefit everyone," or, "the medication expert who..." [Read more »](#)



GENEROSITY

Alums Leon and Merrie Kay Alzola recently established a student scholarship endowment! This will be awarded each year to a student who is highly involved in pharmacy associations. [Read more about the Alzolas »](#)

ALUMNI UPDATES

- We recently heard from Mike and Holly Whitcomb Henry, class of 1978. Mike and Holly attended opening day for the Cougar Yacht Club – Mike was the commodore! [View photo »](#)
- Frank and Monica Cholaj, both class of 1982, recently visited Nice, France! [View photo »](#)
- Baby update! Patrick Tabon and Cassie (Law) Tabon, both class of 2012, welcomed daughter Celeste in May. Jason, class of 2009, and Eleanor Doss welcomed son Rhone in February. Congratulations to both families!
- Earl, class of 1955, and Barbara McIntosh, class of 1957, recently visited the College of Pharmacy. The couple, who've been married since 1959, met at the College of Pharmacy and now reside in Roseville, California. They were in Spokane to watch their grandson Chase participate in the high school state golf tournament. He placed second in the tournament, great job Chase! [View photo »](#)

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

FACULTY SCHOLARSHIP

Publications

- Pharmaceutical Sciences Associate Professor **David Liu** and eight co-authors published, "Human cytomegalovirus immediate-early protein promotes survival of glioma cells through interacting and acetylating ATF5," in the peer-reviewed journal *Oncotarget*. [Read abstract »](#)
- Pharmaceutical Sciences Assistant Professor **Zhenjia Wang**, Pharmaceutical Sciences Postdoctoral Research Associate **Dafeng Chu**, and three co-authors published, "Photosensitization priming of tumor microenvironments improves delivery of nanotherapeutics via neutrophil infiltration," in *Advanced Materials*, a peer-reviewed journal published by Wiley Online Library. [Read abstract »](#)
- **Zhenjia Wang**, Pharmaceutical Sciences Postdoctoral Research Associate **Jin Gao**, and one co-author published, "High yield, scalable and remotely drug-loaded neutrophil-derived extracellular vesicles (EVs) for anti-inflammation therapy," in *Biomaterials*, a peer-reviewed resource from ELSEVIER. [Read abstract »](#)
- Pharmacotherapy Clinical Assistant Professor **Jeffrey A. Clark**, Pharmacotherapy Research Associate **Nolan Koller**, Pharmacotherapy Clinical Professor **Brian J. Gates**, and two co-authors published, "Development of a tool to identify problems related to medication adherence in home healthcare patients," in *Home Healthcare Now*, an interprofessional journal from Wolters Kluwer for home care and hospice clinicians. [Read abstract »](#)

Presentations

- Pharmaceutical Sciences Associate Professor **Grant Trobridge** and three co-authors presented, "Gamma retroviral and lentiviral vector based insertional mutagenesis screen to identify prostate cancer therapeutic targets," at the American Society of Gene & Cell Therapy Annual Meeting in Washington, D.C., May 9-13, 2017.
- **Grant Trobridge** and six co-authors presented the poster titled, "Evidence for the in vivo safety of insulated foamy viral vectors," at the American Society of Gene & Cell Therapy Annual Meeting in Washington, D.C., May 9-13, 2017.
- **Grant Trobridge** and 12 co-authors presented, "HSPC mobilization in association with in vivo foamy virus vector delivery of common gamma chain promote rapid immune reconstitution in the SCID-X1 canine model," at the American Society of Gene & Cell Therapy Annual Meeting in Washington, D.C., May 9-13, 2017.
- Pharmaceutical Sciences Clinical Associate Professor **Susan A. Marsh**, Pharmaceutical Sciences Associate Professor **Mary F. Paine**, and Allen I. White Distinguished Professor **K. Michael Gibson** presented the poster, "Redesigning a comprehensive integrated pharmacology course for active learning in a competency-based curriculum," at the Experimental Biology Meeting in Chicago, Illinois, on April 23, 2017.

Service

- **Susan Marsh** co-chaired the peer-review committee for cardiac biology "BSc 4" grant review panel for the American Heart Association on May 3, 2017.

Grants

- Pharmaceutical Sciences Assistant Professor **Boyang (Jason) Wu** received a 2017 new faculty research grant in the amount of \$30,000 from the Washington State University Office of Research for the project titled, "Deciphering the stromal-tumor cell interaction in prostate cancer."

Awards

- Pharmacotherapy Clinical Assistant Professor **Alyson Blum** received the 2016-17 Faculty Preceptor of the Year Award for the College of Pharmacy.
- Pharmaceutical Sciences Clinical Assistant Professor and Advancement of Teaching and Learning Excellence Director **Connie M. Remsberg** received the Oaks Award for Academic Technology from WSU Academic Outreach and Innovation on May 5, 2017, in Pullman, Washington.

STUDENT ACHIEVEMENT

Doctor of Philosophy (Ph.D.) students

- **Xinyue Dong**, pharmaceutical sciences (Z. Wang lab), with faculty co-authors **Zhenjia Wang**, **Dafeng Chu** and two others published, "Photosensitization priming of tumor microenvironments improves delivery of nanotherapeutics via neutrophil infiltration," in *Advanced Materials*. [Read abstract »](#)

- **Sihan Wang**, pharmaceutical sciences (Z. Wang lab), with faculty co-authors **Zhenjia Wang** and **Jin Gao** published, "High yield, scalable and remotely drug-loaded neutrophil-derived extracellular vesicles (EVs) for anti-inflammation therapy," in *Biomaterials*. [Read abstract »](#)
- **Panshak Dakup**, pharmaceutical sciences (Gaddameedhi lab), presented the poster, "Chronopharmacology of cisplatin: role of the circadian rhythm in modulating cisplatin-induced toxicity in melanoma mouse and human models," at the 2017 American Association of Cancer Research (AACR) Annual Meeting on April 1-5 in Washington, D.C. He received a travel award of \$500 from the College of Pharmacy and the Associated Students of WSU Spokane (ASWSUS) to support this trip.
- **Sara Dumit**, pharmaceutical sciences (Tolmachev lab), received a \$500 travel grant from the ASWSUS to present, "Plutonium biokinetics in the human body under decorporation treatment," at the European Radiation Dosimetry Group Annual Meeting in Karlsruhe, Germany, February 27 - March 3.
- **Sara Dumit** received a \$450 travel grant to present, "Enhancement of plutonium excretion following late Ca-EDTA/DTPA treatment," at the Health Physics Society Meeting in Raleigh, North Carolina.

Doctor of Pharmacy (Pharm.D.) students

- **Shelby Denney** received a 2017 WSU Spokane Chancellor's Award.
- **Paul Hardy** received an American Foundation for Pharmaceutical Education (AFPE) Gateway to Research Award in the amount of \$5,000.
- **Nawsheen Shoaib** received an AFPE Gateway to Research Award in the amount of \$5,000.
- **Kathryn R. Mahan** with faculty co-authors **Jeffrey Clark**, **Nolan Koller**, **Brian Gates**, and one other published, "Development of a tool to identify problems related to medication adherence in home healthcare patients," in *Home Healthcare Now*. [Read abstract »](#)