



UPCOMING EVENTS

COLLEGE NEWS

ALUMNI NEWS

FACULTY SCHOLARSHIP

A MESSAGE FROM GARY M. POLLACK



December 2016

Dear Friends and Colleagues:

This year's presidential election revealed that our nation is divided more deeply than we knew (or cared to admit to ourselves), with fractures in multiple societal planes: race, ethnicity, religion, age, gender and gender identity all seem to be characteristics that separate "right" from "left."

One of the more obvious divisions in the electorate is based on educational attainment. We know that one of the strongest predictors of individual economic success is the highest degree attained. In 2014, the Organisation for Economic Co-operation and Development (OECD) concluded that a college graduate in the U.S. earns, on average, 74 percent more than a high school graduate. The "education divide" is therefore likely an outcome, at least in part, of income inequality.

Why should this matter to higher education in general, and the health professions/health sciences in particular (beyond the obvious, of course, which is it should matter to everyone)? There are at least three reasons that our segment of the academy should pay attention to the "why" associated with this year's election results:

1. We obviously are not doing enough to ensure that the next generation of Americans will be more educated, and therefore likely to experience greater economic advantages, than their parents. According to the OECD analysis, the U.S. is near the bottom of the "developed" countries in terms of generational improvement in educational attainment. We collectively need to do more to not only make higher education accessible, but to convince a large segment of the population that a college or advanced degree is well worth the investment.
2. Health professions academic programs invest significant time and resources discussing access to health care. We view ourselves as champions of diversity, and perhaps rightly can claim that designation. However, we seem to focus on the more obvious communities for which barriers to health care are significant, and forget that there are populations in our own backyards for whom quality health care is currently unattainable for a variety of reasons. We have to do better at assuring all Americans that when we say "care for all", we do indeed mean "all".
3. There is an obvious distrust of science among a large segment of the population. Although we might be tempted to blame this mistrust on lack of educational attainment, and therefore an inability to understand the value of the scientific enterprise, we would do so at our own peril. A large component of the mistrust that we see, from "vaccine deniers" for example, likely is due to the fact that scientists (I count myself among that group) simply do not do a good job of explaining the nature and value of their work. We talk among ourselves, and use a common and efficient language to do so; when reaching out to the lay public, we come across as smug or, worse, condescending. For those of us in the academy, the general population pays our research bills. We need to work harder at making our efforts relatable to, and understandable by, the lay public.

Providing access to a high-quality education, ensuring access to necessary services (including appropriate health care),

and generating new knowledge that can be applied to solving real-world problems are areas in which land grant universities can and should lead the way. These are important elements of Washington State University, and are reflected in our college's core values. However, success in improving people's lives, and in turn being recognized for adding value to society, requires a collective effort. We all are responsible for making a difference, and this should be job one for every one of us, each and every day.

Best wishes for a happy and healthy holiday season,



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

Editor's note: The next CougaRx Newsletter will be published in February 2017. Happy Holidays!

UPCOMING EVENTS

DEC.

2

Graduate Research Seminar

PBS 101, 12:10 p.m.
[View seminar schedule](#)

DEC.

5

ASHP Midyear Meeting CougaRx Reception

Las Vegas, Nev.
[RSVP](#)

DEC.

9

Graduate Research Seminar

PBS 101, 12:10 p.m.
[View seminar schedule](#)

DEC.

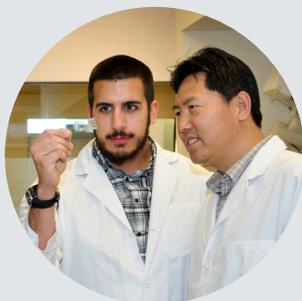
9

CougaRx Nation Holiday Party

WSU Spokane, 5:00 p.m.
[RSVP](#)

[More college events »](#)

COLLEGE NEWS



\$1.7M Grant Funds Nanoparticle Research to Improve Drug Delivery

By Judith Van Dongen, WSU Spokane

Good things come in small packages, which in the case of one WSU researcher's work are measured in nanometers, or billionths of a meter. Zhenjia Wang, an assistant professor of pharmaceutical sciences, designs new therapeutics—tiny nanoparticles capable of carrying drug molecules across the blood vessel barrier, directly to the diseased tissue that drugs need to treat.

With a new five-year, \$1.7 million grant from the National Institutes of Health, Wang will be testing nanoparticles he created from albumin, a plasma protein that is already running through our veins in abundance. He will determine whether the albumin nanoparticles can successfully attach themselves to neutrophils, a type of white

blood cell that is known to automatically travel through the blood vessel barrier to fight infection or inflammation at its source.

“In this study, we specifically look at infectious and inflammatory lung diseases, such as pneumonia and acute lung injury, but this same technology could be applied to any disease that involves infection or inflammation, including cancer,” Wang said. In a separate project, he is looking at neutrophils as potential carriers for chemotherapy drugs.

If his hypothesis holds up, Wang’s study could lay the groundwork for more effective and efficient delivery of a wide variety of existing drugs. Since drugs would reach only the targeted site—rather than be released throughout the body— toxicity to healthy tissues would be minimized and drug doses could be lowered. Wang said targeted drug delivery is crucial to improving quality of life and increasing treatment options for patients, some of whom might not survive the side effects that come with the higher doses required by conventional drug delivery.



Safer gene therapy delivery reduces cancer risk

By Eric Sorensen, WSU science writer

SPOKANE, Wash. – A Washington State University researcher has developed a way to reduce the development of cancer cells that are an infrequent but dangerous byproduct of gene therapy.

Grant Trobridge, an associate professor of pharmaceutical sciences, has altered the way a virus carries a beneficial gene to its target cell. The modified viral vectors reduce the risk of cancer and can be used for many blood diseases.

Trobridge and his team report their development in *Scientific Reports*, an online open-access journal produced by the Nature Publishing Group. The team is translating their findings into a stem cell gene therapy to target a life-threatening immunodeficiency in newborns called SCID-X1, also known as “Boy in the Bubble Syndrome.”

Gene therapy holds potential for treating genetic diseases by replacing defective genes with repaired ones. It has shown promise in clinical trials but has also been set back by difficulties delivering genes, getting them to work for a long time and safety issues. A joint French and English trial, for example, successfully treated 17 out of 20 patients with SCID-X1 only to see five of them develop leukemia.

Trobridge and his colleagues are using a vector developed from a foamy retrovirus, so named because it appears to foam in certain situations. Unlike other retroviruses, they don’t normally infect humans. They also are less prone to activate nearby genes, including genes that might cause cancer.

Retroviruses are a natural choice for gene therapy because they work by inserting their genes into a host’s genome.

With an eye toward making the vector safer, the Trobridge team altered it to change how it interacts with a target stem cell so it would insert itself into safer parts of the genome. They found that it integrated less often near potential cancer-causing genes.

“Our goal is to develop a safe and effective therapy for SCID-X1 patients and their families,” said Trobridge. “We’ve started to translate this in collaboration with other scientists and medical doctors into the clinic.”

He predicted that the therapy could be ready for clinical trials within five years.

The work is funded by the National Institutes of Health’s National Institute of Allergy and Infectious Diseases. It is in keeping with WSU’s Grand Challenges (<https://research.wsu.edu/research-initiatives/grand-challenges/>), a suite of research initiatives aimed at large societal problems. The work is particularly relevant to the Sustaining Health challenge of changing the course of disease.



A communications update from the WSU College of Pharmacy

This past summer, we did a review of the communications sent out from the College of Pharmacy to our alumni, donors and community partners. This review included our two monthly newsletters, email and print announcements for our college events, and our annual publications. We also collected feedback from our key stakeholders through an online survey in August. We received some excellent feedback, and as a result we reorganized some of our internal processes in order to more effectively communicate with you.

Some of these changes you have already seen, like the new look of our CougaRx Newsletter. We discovered a significant overlap in our readership of our two e-newsletter publications, so we combined our two newsletters into one easy-to-navigate format. The second big change is the production schedule of our annual report. Not many of our academic, fiscal or research funding processes follow the calendar year, so we reorganized our annual report timeline to align better with our normal business processes. This will streamline our annual reporting to stakeholders, and make our processes more efficient. As a result, there will not be a 2016 report published in January. The annual report will switch to the fiscal year, and the first 2016-17 report will be hitting mail boxes soon after the new fiscal year in July.

While the focus of these changes are to make our communication processes more efficient, our ultimate goal is making it easier for you to keep up on all the great things happening at the WSU College of Pharmacy. We encourage you to let us know how we are doing. You can email comments and feedback on college communications to pharm.social@wsu.edu, or engage with us on Facebook or Twitter.



THE DEAN'S ENDOWED PROFESSORSHIP

Proceeds from this endowment will help propel the College of Pharmacy toward its strategic goals.

[LEARN MORE](#)

A MESSAGE FROM LINDA GARRELTS MACLEAN



Dear Alums, Colleagues and Friends of Pharmacy,

Happy holidays from the College of Pharmacy! As the season of giving is upon us, it is a great time to thank those who have been so gracious in supporting our students and the college throughout the year. We would not be where we are today without your support.

This year, we celebrated our 125th anniversary with the establishment of the Dean's Endowed Professorship (DEP). This effort honors the past, current and future deans of the College of Pharmacy.

The DEP is important because it will allow the dean to directly support initiatives that elevate the college as a top-tier pharmacy school. These initiatives provide things like new technology to implement curriculum innovation, support for



Watch the 125th Anniversary Gala video!

students' professional and community engagement activities, and student scholarships. In short, we are continuing our legacy as an educator of outstanding health care professionals and scientists because of your generous support.

In addition, all contributions of \$1,000 or more will be named as inaugural members of the Dean's Circle and will be recognized on the permanent donor wall in the Pharmaceutical and Biomedical Sciences building. I am so honored by all our generous alumni and friends who have already contributed to this important cause!

I also want to be sure you have the link www.pharmacy.wsu.edu/give should you want to make an end of year contribution. We greatly appreciate your support. Our students, and the future of pharmacy, are the beneficiaries of your generosity!

Wishing you a holiday season filled with joy and warmth,

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

ALUMNI NEWS



WAVE THE FLAG

Last call for wave the flag submissions! Send us a photo showing your cougar pride during holiday travel, Apple Cup, or perhaps the upcoming bowl game. [Submit photo »](#)



125 PHOTO BOOTH

The photo booth at our 125th Anniversary Gala was a hit! Even Butch T. Cougar joined in the fun. [Click here](#) to view the photo album on Facebook.



GENEROSITY

Janet Warren won the opportunity drawing at our Gala and donated her winnings back to the college. She is the mother of alum Ian Warren, class of 1989, who recently set up an endowment in his mother's name.

ALUMNI UPDATES

- Are you going to the bowl game? Email us at gocougs@pharmacy.wsu.edu and let us know so we can connect at the game! Bowl information will be [posted here](#) as soon as it is available.
- Calling all class of 2007 alumni! **Nicole Richardson** and **Jamie Maud Danelo** are organizing a 10 year class reunion. If you are part of this class and want to help with the event, please email gocougs@pharmacy.wsu.edu.
- Earlier this year **C.J. Cahoon**, class of 2002, was appointed as the director of pharmacy at Kadlec Medical Center in

Tri-Cities, Washington. Great job C.J.!

- **Shane** and **Cammi (Burns) Johnson**, both class of 2013, are happy to be back in the Tri-Cities. Shane is working at Kadlec Medical Center and Cammi is working at Malley's Compounding Pharmacy. They welcomed their first child last month. Congrats Shane and Cammi!

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 **Grant Trobridge** and five co-authors published, "Retargeted foamy virus vectors integrate less frequently near proto-oncogenes." in Scientific Reports, a Nature Publishing Group journal, available online on Nov 4, 2016. [Read abstract](#)
- **Grant Trobridge** and one co-author published, "Identifying cancer driver genes using replication-incompetent retroviral vectors." in Cancers, a MDPI journal, available online on Oct 25. [Read abstract](#)
- Pharmaceutical Sciences Clinical Assistant Professor **Travis T. Denton** and five co-authors published, "Reductions in the mitochondrial enzyme α -ketoglutarate dehydrogenase complex in neurodegenerative disease - beneficial or detrimental?" in the Journal of Neurochemistry, a peer-reviewed journal from the International Society for Neurochemistry. [Read abstract](#)
- Pharmacotherapy Associate Professor **Joshua Neumiller** published, "2016 Prescott Lecture: diabetes education – leadership through action" in the Journal of the American Pharmacists Association. 2016;56(6):611-614. [Read abstract](#)
- **Joshua Neumiller** and Pharmacotherapy Clinical Professor and Associate Dean for Professional Education **Brian Gates** co-authored with 9 others, "Preserving self: medication-taking practices and preferences of older adults with multiple chronic medical conditions." in the Journal of Nursing Scholarship. 2016;48(6):533-542. [Read abstract](#)

Presentations

- Pharmaceutical Sciences Research Associate **Anil K. Singh** (Ahmed lab), presented the poster entitled, "Suppression of monosodium urate (MSU) crystals-induced inflammatory response by inhibiting TGF- β activated kinase 1 (TAK1)," at the American College of Rheumatology 2016 annual meeting in Washington, D.C., November 11-16, 2016. Contributing authors include: Pharmaceutical Sciences Associate in Research (Ahmed Lab) **Bhanupriya Madarampalli**, Pharmaceutical Sciences Associate Professor **Salah-uddin Ahmed**, and two others.
- Pharmaceutical Sciences Research Associate **Nahid Akhtar** (Ahmed lab), presented the poster entitled, "MicroRNA-17 suppresses TNF- α signaling by reducing TRAF2 and cIAP2 association in rheumatoid arthritis synovial fibroblasts," at the American College of Rheumatology 2016 annual meeting in Washington, D.C., November 11-16, 2016. Contributing authors include: **Anil K. Singh** and **Salah-uddin Ahmed**.
- **Nahid Akhtar** presented the poster titled, "EGCG down-regulates TNF- α -induced Mcl-1 expression by modulating mule/huwei1, β -TrCP, and USP9X ubiquitin/de-ubiquitin ligases in rheumatoid arthritis synovial fibroblasts," at the American College of Rheumatology 2016 annual meeting in Washington, D.C., November 11-16, 2016. Contributing authors include: Pharmaceutical Sciences Postdoctoral fellow **Sadiq Umar** and **Salah-uddin Ahmed**.
- **Josh Neumiller** presented, "What's new? An antihyperglycemic medication update," for the CME series at Gritman Medical Center in Moscow, Idaho, on November 1, 2016.
- **Travis Denton** presented a poster titled, "Phosphonate analogues of lanthionine ketimine as stimulators of cellular autophagy: development of small molecule treatments for neurological disorders," at the Society for Neuroscience Annual Meeting in San Diego, California on November 16, 2016.

Service

- **Salah-uddin Ahmed** served as an expert reviewer for the arthritis and musculoskeletal and skin diseases (AMS) study section meeting at the National Institute of Arthritis and Musculoskeletal and Skin (NIAMS) institute of the National Institutes of Health held during November in Bethesda, Maryland.

Grants

- Experimental & Systems Pharmacology Clinical Professor **Jean-Baptiste Rouillet** and Allen I. White Distinguished Professor and Experimental and Systems Pharmacology Chair **K. Michael Gibson** received \$305,616 over five years from the Succinic Semialdehyde Dehydrogenase Deficiency (SSADH) Association for the project titled, "SSADHD Biorepository."
- Pharmaceutical Sciences Assistant Professor **Zhenjia Wang** and one other received a non-monetary grant from the Environmental Molecular Sciences Laboratory (EMSL), Pacific Northwest National Laboratory for access to EMSL facilities to support the project titled, "Morphology and protein profile of bacterium-membrane-formed nanovesicles."

STUDENT ACHIEVEMENT

Doctor of Philosophy (Ph.D.) students

- **Solomon Agere**, pharmaceutical sciences (Ahmed lab), presented, "Syndecans mediate RANTES/CCL5 induced MMP-1 and MMP-13 expression in rheumatoid arthritis synovial fibroblasts," at the American College of Rheumatology 2016 annual meeting in Washington, D.C., November 11-16, 2016. Contributing authors include: faculty co-authors **Nahid Akhtar** and **Salah-uddin Ahmed**.
- **Mahamudul Haque**, pharmaceutical sciences (Ahmed lab), was co-author on the poster, "Suppression of monosodium urate (MSU) crystals-induced inflammatory response by inhibiting TGF- β activated kinase 1 (TAK1)," presented at the American College of Rheumatology 2016 annual meeting in Washington, D.C., November 11-16, 2016. Contributing authors include: faculty co-author **Salah-uddin Ahmed** and one other.
- **Victor Bii**, pharmaceutical sciences (Trobridge lab), published with faculty co-author **Grant Trobridge**, "Identifying cancer driver genes using replication-incompetent retroviral vectors," in *Cancers*, a MDPI journal, available online on Oct 25. [Read abstract](#)
- **Sara Dumit**, pharmaceutical sciences (Tolmachev lab), presented, "Plutonium biokinetics in the human body under decorporation treatment," as part of the Graduate Research Seminar Series on November 18, 2016.
- **Tao Xu**, pharmaceutical sciences (Zhu lab), presented, "A minisatellite in the telomerase gene: its structure, function, and association with human longevity," as part of the Graduate Research Seminar Series on November 4, 2016.
- **Sihan Wang**, pharmaceutical sciences (Wang lab), with faculty mentor **Zhenjia Wang** received a non-monetary grant from the Environmental Molecular Sciences Laboratory (EMSL), Pacific Northwest National Laboratory for access to EMSL facilities to support the project titled, "Morphology and protein profile of bacterium-membrane-formed nanovesicles."

JOBS

- [Postdoctoral Research Associate](#)
Pharmaceutical Sciences – Ahmed Lab, Spokane, Washington
- [Postdoctoral Research Associate](#)
Pharmaceutical Sciences - Wu Lab, Spokane, Washington
- [Postdoctoral Research Associate](#)
Experimental & Systems Pharmacology - Natesan Lab, Spokane, Washington
- [Postdoctoral Research Associate](#)
Experimental & Systems Pharmacology - Clarke Lab, Spokane, Washington

- Clinical Assistant Professor
Pharmacotherapy - Yakima Valley Memorial Hospital
- Clinical Assistant Professor
College of Pharmacy - Yakima