

The Dean's Newsletter



From
College of Pharmacy Dean
Gary Pollack, Ph.D.

MARCH 2014

In This Issue...

- Testing for strep
- Dr. Susan Marsh
- Faculty achievement
- It plays essential role
- Other news

Dear Friends and Colleagues:

I wish to share with you my perspective on a very serious topic and what several of our faculty are doing to address it.

The death last month of the actor Philip Seymour Hoffman served as a reminder of the toll associated with addiction to narcotics. It is unfortunate that the death of someone in the public eye is needed to focus attention on this issue.

Restricting access to prescription narcotics, which has been a focal point in attempts to decrease drug abuse over the last decade or so, has had the unintended (but entirely predictable) consequence of increasing trafficking in heroin. Data collected by the Centers for Disease Control and Prevention suggest that the number of heroin users has increased by 75% over the last 10 years, from about 400,000 in 2003 to nearly 700,000 in the last year. While deaths associated with heroin overdose (about one per 100,000) have remained relatively constant in the population as a whole, mortality among teenage and young-adult whites has increased alarmingly during that time, from 1.0 to approximately 2.5 per 100,000.

This latest surge in abuse is largely among a generation that does not recall the devastating effects, on individuals and entire communities, of heroin in the late 1960s and early 1970s. It was primarily heroin abuse that led to the "war on drugs" that was launched in 1972, an effort that has largely succeeded only in increasing the number of nonviolent offenders in state and federal prisons and in directing attention away from the sociological and medical issues associated with drug abuse and addiction.

While the politics of drug abuse are intractable, and therefore little influenced by individuals (especially in academia, which is viewed as being "soft" in the drug wars), two efforts led by faculty in our college are directed at providing life-saving intervention for opiate overdose. Such emergency situations can arise from

“recreational” use of heroin and other illicit opiates, or the therapeutic use of drugs such as fentanyl which provide important relief for patients experiencing chronic pain.

Shannon Panther and Linda Garrelts MacLean are spearheading a project that will place naloxone in all student residences in Washington State University. Naloxone is extremely effective at reversing the acute effects of overdose, including fatal respiratory depression, and is itself devoid of toxicity. Because naloxone is not psychoactive, it does not pose any potential for abuse or addiction (unlike methadone, which is used to treat addiction to other opiates but has no role in treating opiate toxicity). Many arguments have been made regarding the benefits of making naloxone readily available. This project aims to establish the benefits (and absence of risk) of naloxone availability among WSU’s student body, and then export the program to college campuses throughout the country. Given that college-age students are particularly at risk for experimenting with alcohol and other drugs, this project has the potential to be extraordinarily impactful.

In emergency situations outside of the hospital setting, naloxone is intended to be injected intramuscularly or intravenously. In some cases (including the project just described) naloxone is given into the nose. While this approach is convenient, especially for a caregiver with no experience injecting drugs into others, the existing formulation has not been optimized for nasal administration. John White, Mary Paine, and Jeannie Padowski are working to develop a new formulation of naloxone to address this deficiency. Eliminating the need to inject this drug will reduce risks, such as spreading infections with accidental needle sticks, associated with parenteral administration. In addition, there is good scientific rationale to suggest that intranasal naloxone will work more rapidly than the intramuscular formulation in reversing opiate effects. The combination of convenient administration, even by someone inexperienced with its use, and more rapid action makes this an extremely attractive option. The public health benefits associated with the development of an effective nasal delivery strategy for naloxone are substantial.

Of course, managing unintended drug overdoses is the classic situation of “treating the symptom”. The “cure” is in reforming our attitudes about, and judicial approach to, drug abuse and addiction. Sadly, the cure has been elusive, and is seemingly beyond the influence of those who are in the best position to offer a rational solution: health care providers and the individuals, families, and friends who have been so adversely affected. In the interim, there is an urgent need for options to treat drug overdoses as they occur.

With best wishes,



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

Bringing strep throat testing to pharmacies

College of Pharmacy has a role in launch of new pharmacy service



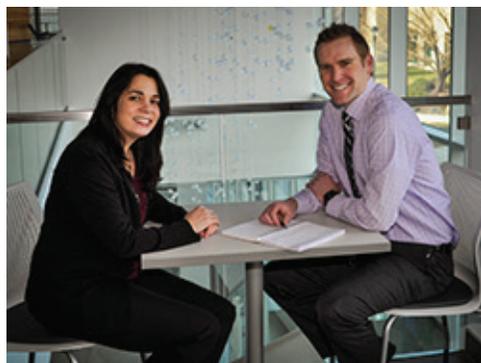
Dr. Catrina Schwartz

When Catrina Schwartz began her post-graduate pharmacy residency at Jones Pharmacy in Spokane, the project she had in mind was to help establish strep throat testing as a new service in pharmacies.

She successfully created and completed a collaborative drug therapy agreement with a physician, which allows the physician to delegate to pharmacists the authority to prescribe medication in an agreed upon situation. Because Washington state had been one of the first states where prescriptive authority agreements were allowed, and because the National Community Pharmacists Association had prepared a how-to primer on offering strep throat testing, Schwartz expected a certain level of success.

The project was launched at Jones Pharmacy in 2003 with the help of a grant from the national Community Pharmacy Foundation. A few other pharmacies followed suit, but the service did not expand extensively. It appears now, however, that Schwartz and her then-mentor Linda Garrelts MacLean were simply about 10 years ahead of their time.

Both have now been assisting Shon Volk, a 2007 WSU pharmacy graduate and manager of an Albertsons pharmacy in Spokane, in launching a pilot project in January at eight Albertsons pharmacies offering the rapid strep test. Schwartz trained the Albertsons pharmacists on how to evaluate patients for strep throat based on the collaborative drug therapy agreement and guidelines from the Infectious Disease Society of America. Schwartz also is supervising a for-credit project by second-year pharmacy student Roger Barnhart who updated Schwartz's 10-year-old collaborative agreement for Volk. Volk found a local physician willing to collaborate.



"This is what I really want to do in pharmacy," says Barnhart, who works part-time at Volk's pharmacy while going to school. Barnhart sees a future where he is on the "front lines" of health care helping direct people in the right direction. "Pharmacists are trained and positioned to provide services like this. Our goal is to not only show that it works, but that it is beneficial to practice this way."

Schwartz and Barnhart are now collecting data from customers who get the strep testing at the participating Albertsons pharmacies, and after a year, they will analyze the data and publish findings.

With the new momentum behind the strep throat testing service, Schwartz is making plans to once again teach WSU student pharmacists about innovative collaborative agreements, including strep throat.

Associate Professor Susan Marsh

Exercise presented scientific challenge she could not ignore



Dr. Susan A. Marsh

Sue Marsh thought she wanted to teach physical education in high school until she got her education degree and it came time to do it, and then she realized her interest in exercise went beyond using science to help people run faster and throw further.

So she coached children and athletes part-time while she went back to college to study health science. During college she also worked in a pathology lab processing blood samples and eventually that led her into laboratory research where she began to explore how physical activity affects the cells of the heart.

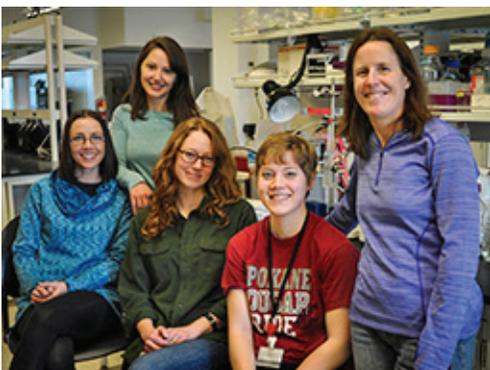
The pursuit of those answers began for Marsh about 15 years ago, including the last five years in her own laboratory at the WSU College of

Pharmacy.

“What’s shocking to me is how much we don’t know,” Marsh said. “It’s an exciting time to be in science because we really are just getting started, and we now have the tools to start looking at the things we need to study.”

Marsh’s research is focused on learning more about why exercise is good for the heart. There are three graduate students and a postdoctoral researcher in her lab and all of them are studying the subject from a different angle. They are looking at the effects of diets high in saturated fat and refined sugar, the effects of high blood pressure, diabetes, and the amount and type of exercise and whether that makes a difference.

“Most researchers look at how the heart grows in a negative way because of illness, but it also grows stronger and becomes more efficient with exercise and so we are looking at that,” Marsh said. “People also assume high blood pressure and diabetes affect heart growth in a similar negative way, but the reality is they have completely different effects,” she said. “If we can uncover these differences and identify why exercise works so well, we will be able to develop better therapeutic approaches to prevent and treat heart disease.”



One of her longtime graduate students is aiming to finish her Ph.D. this year and move on to a postdoctoral research position at the University of Alabama at Birmingham, where Marsh did her postdoctoral study.

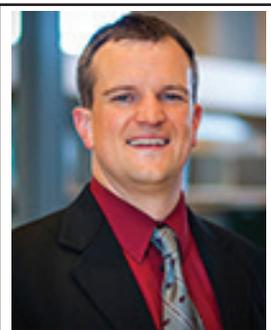
It is working with the graduate students and teaching them to be good scientists that Marsh enjoys most about her job now.

“You teach them how to think like a scientist, how to write and present like a scientist, and to help them prepare for the next step in their career,” Marsh said. “They are publishing their own work now; they are developing into excellent scientists. They make me look good.”

Marsh is a native of Australia and received all her education there until she became a postdoctoral scholar in Birmingham in 2005. She came to WSU from there in the fall of 2008. She is an avid backpacker and hiker, and was just promoted to associate professor with tenure at WSU (See related story about faculty promotions below).

Faculty doing great things

Five College of Pharmacy faculty receive promotions



Dr. Brian J. Gates
promoted to
clinical professor

Brian J. Gates is on faculty in the Department of Pharmacotherapy and was appointed to the administrative faculty position of associate dean for professional education overseeing the Doctor of Pharmacy degree program in June 2013. Gates has a Doctor of Pharmacy degree from WSU and three years of postgraduate training in geriatric pharmacy from WSU and Providence Visiting Nurse Association in Spokane. He teaches third-year students in the applied patient care lab and he is a member of the geriatrics research team. He also is a consultant pharmacist to the Visiting Nurse Association and makes presentations about medication safety to senior citizen groups.

“Brian Gates contributes to our mission in every way possible, as an administrator, a clinician, a researcher, and a well-loved teacher,” said John R. White, chair of the pharmacotherapy department. “His approach to everything is always positive, well-informed, and fair.”

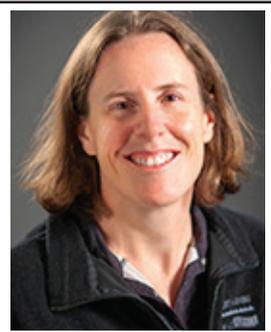


Dr. Terri L. Levien
promoted to
clinical professor

Terri L. Levien is on faculty in the Department of Pharmacotherapy and is the assistant director of the Drug Information Center. Levien has a Doctor of Pharmacy degree from WSU and she writes reviews of new drugs for the national Formulary Monograph Service, writes a continuing education feature on new drugs for Hospital Pharmacy magazine, and she lectures on new drugs to pharmacy groups and teaches drug literature evaluation to pharmacy students.

“Levien’s promotion to clinical professor is well-deserved,” White said. “She is a fine example of a professor who is focused, productive, indefatigable, and constructive at all levels. We are fortunate to have her.”

Susan A. Marsh is on faculty in the Department of Experimental and Systems Pharmacology (formerly the Clinical Pharmacology section). Marsh has a Ph.D. in human movement studies from the University of Queensland in Brisbane, Australia, and was a postdoctoral scholar in the Division of Cardiovascular Disease at the University of



Dr. Susan A. Marsh promoted to associate professor

Alabama in Birmingham before coming to WSU in 2008 (Read more about her work in story above).

Department Chair K. Michael Gibson had this to say about her: “Dr. Susan Marsh, one of the founding members of the Department of Experimental and Systems Pharmacology (ESP), is a respected scientist with expertise in the molecular effects of aerobic exercise on cardiovascular disease, is currently NIH-funded, and oversees three graduate students and one post-doctoral research associate. Sue is an outstanding academic citizen and a wonderful colleague. ESP is fortunate to have her as part of our team.”

Joshua J. Neumiller is in the Department of Pharmacotherapy. He has a Doctor of Pharmacy degree from WSU and is a Certified Diabetes Educator as well as Certified Geriatric Pharmacist. He is co-leader of the College of Pharmacy’s Clinical Trials Research Team and a member of the Geriatrics Research Team. He also is the current editor-in-chief of the national diabetes journal Diabetes Spectrum.



Dr. Joshua J. Neumiller promoted to associate professor

“Dr. Neumiller has vaulted through the ranks of nationally recognized diabetes experts very early in his career,” White said. “He is widely sought after as a presenter by groups such as the American Society of Nephrology and the American Diabetes Association. Josh is greatly appreciated by his students for his no-nonsense and well-informed approach to teaching and is also admired by the patients that he manages in his clinical trials.”

Grant D. Trobridge is on faculty in the Department of Pharmaceutical Sciences. Trobridge has a Ph.D. in microbiology from Oregon State University and came to the department in 2010 from the Fred Hutchinson Cancer Research Center in Seattle and the Department of Medicine at the University of Washington.

Department Chair Philip Lazarus had this to say about Trobridge:

“Since arriving as a junior investigator at WSU in 2010, Dr. Trobridge has performed at a level that I consider outstanding. First and foremost, Dr. Trobridge has developed an outstanding research program, focusing on novel mechanisms of drug delivery using viral therapies.

Among his many achievements, Dr. Trobridge has established a new model to evaluate the effects of alcohol on human cells in vivo, and, in studies covered by the national press, has developed novel bioinformatics software to analyze the safety of stem cell therapy to treat cancer. This model has broad potential applications for stem cell biology and also cancer research.

Since 2010, Dr. Trobridge has published 22 papers in high-tier journals, with nine of these as first or corresponding author. Dr. Trobridge has obtained five federally-funded grants and holds one patent. In addition, Dr. Trobridge has been exemplary in teaching, mentorship and service: training numerous students, participating in the teaching of four courses continuously, serving on numerous internal



Dr. Grant D. Trobridge promoted to associate professor

committees, serving as an ad hoc grant reviewer for the Department of Defense and the National Institutes of Health, and has chaired two sessions for the American Society for Cell and Gene Therapy annual meeting. In short, Dr. Trobridge’s promotion is a reflection of a superb level of academic excellence.”

IT director plays essential role in College success

Faster than a speeding gigabyte? It’s not a bird or a plane, it’s IT



Ryan Maynard

Picture Ryan Maynard stuffing a computer server – about as big as three CD-Rom towers – into the trunk of a Honda Civic in the dark of night in Pullman, and two hours later plugging it back in on a darkened and mostly deserted university campus in Spokane.

The College of Pharmacy has 10 servers that power the website and every other computerized function under Maynard’s management, and all of them had to be moved the 75 miles from Pullman to Spokane last fall. Maynard can tell you that it takes 10

minutes for a server to power down and two hours to get it to Spokane and up and running again. He mostly moved them at night and on the weekends to avoid inconveniencing people.

Maybe it is his consideration of computer users that explains why people applaud when he is introduced at College meetings. Maynard approaches all requests for help with a can-do attitude, with the possible exception of a request to have this story written about him and his picture taken.

Maynard joined the College staff almost eight years ago after working in private industry in Spokane. He has bachelor’s and master’s degrees in computer science from Eastern Washington University and is a native of Dayton, Wash. He was living in Spokane when he was hired at the College, moved with his wife and two boys to near Colfax, and then last year relocated everyone back to Spokane when his job with the College moved.

Maynard played an essential role last spring and summer in the purchase and implementation of new computerized testing software so the College could switch to a new competency-based curriculum. Maynard made sure there was an information services tech present for every test period – at least once a week – last fall and they are staffing them again this spring because, Maynard explained, “We want to make sure the students have a positive experience with it.”

What does he enjoy most about his job? “I like working with the various people that are here – the faculty, staff and students. And we have a very good IT team; I am very fortunate to have those guys.” Aaron Munn and Michael Johnson work for Maynard. “It is a good place to work.”

Other College News

FACULTY SCHOLARSHIP

Publications

- Experimental and Systems Pharmacology Assistant Professor **Sue Marsh** and four co-authors published, “A novel protocol for assessing exercise performance and dystropathophysiology in the mdx mouse,” in the journal Muscle & Nerve.
- **Sue Marsh** and one co-author published, “A systematic review of fetal genes as biomarkers of cardiac hypertrophy in rodent models of diabetes,” in PLOS ONE, a peer-reviewed open-access resource from the Public Library of Science.
- Pharmacotherapy Assistant Professor **Joshua Neumiller** published, “Calling All Educators: Let us know your educational needs,” in the February 2014 issue of Diabetes Spectrum.
- Pharmacotherapy Professor **Tracy Skaer** published, “Fibromyalgia: Disease synopsis, medication cost effectiveness and economic burden,” in the February 2014 issue of PharmacoEconomics.
- Associate Dean for Professional Education and Pharmacotherapy Clinical Associate Professor **Brian Gates** and one co-author published, “Physiological changes in older adults and their effect on diabetes treatment” in the February 2014 issue of Diabetes Spectrum. [read more](#)
- Pharmacotherapy Clinical Associate Professor **Terri Levien** and Associate Dean of External Professional and Continuing Education and Pharmacotherapy Professor Danial Baker published, “Ferric carboxymaltose” in the January 2014 issue of Hospital Pharmacy.
- **Danial Baker** published “Approvals, Submission, and Important Labeling Changes for U.S. Marketed Pharmaceuticals” in January 2014 of Hospital Pharmacy.
- Associate Research Professor and USTUR Director **Sergei Tolmachev** and Associate in Research Stacey McComish were co-authors on, “Carcinogenic and inflammatory effects of plutonium—nitrate retention in an exposed nuclear worker and beagle dogs,” in the January 2014 issue of the International Journal of Radiation Biology.
- **Sergei Tolmachev** and Stacey McCord were co-authors on, “Gibb et al. respond to J. Zhou’s letter ‘Incorrect Analysis of Radiation and Mesothelioma’,” in the February 2014 issue of the American Journal of Public Health.
- Pharmaceutical Sciences Associate Research Professor **Zuping Xia** and several colleagues published, “Pharmacokinetics of 3’-O-Retinoyl-5-fluoro-2’-deoxyuridine (RFUdR), a dual acting mutually masking prodrug, and its metabolites in tumor bearing mice,” in the journal Current Drug Delivery (2013, 10, 557-563).
- **Zuping Xia** and several colleagues published, “Dual-acting 5-Fluorodeoxyuridine (FUdR) prodrugs: cell death induced by 3’-O-retinoyl-5-fluoro-2’-deoxyuridine and 5’-O-[bis(2,2,2,-trichloroethyl)phosphoryl-3’-O-butanoyl]-5-fluoro-2’-deoxyuridine,” in the journal Clinical & Experimental Pharmacology (2013, 4.1).
- Pharmaceutical Sciences Assistant Professor **Zhenjia Wang** co-authored, “Prevention of vascular inflammation by nanoparticle targeting of adherent neutrophils,” which was published recently in the journal Nature Nanotechnology.

Presentations

February 19, 2014

Pharmaceutical Sciences Assistant Professor **Grant Trobridge** presented, “Stem cell gene therapy, genotoxicity and cancer gene discovery,” for the WSU College of Pharmacy Research Seminar Series in Spokane, Wash.

Grants

Pharmaceutical Sciences Professor **Gary Meadows** and Pharmaceutical Sciences Clinical Associate Professor **Hui Zhang** received \$415,250 from the National Institute for Alcohol Abuse and Alcoholism for a research project titled, “Immunotherapy to mitigate the negative effects of alcohol on cancer progression”.

Service

- Experimental and Systems Pharmacology Assistant Research Professor **Vanessa González-Pérez** has been named diversity officer for the National Postdoctoral Association.
- **Josh Neumiller** served as an abstract reviewer for the 74th Scientific Sessions of the American Diabetes Association to be held in San Francisco, Calif., on June 13-17, 2014.
- **Josh Neumiller** participated in a multidisciplinary advisory board, “Assessing the Place of SGLT2 Inhibitors in T2DM Treatment” in San Diego, Calif., on February 21, 2014.
- **Tracy Skaer** is now a member of the editorial board for the Journal of Sleep Medicine and Disorders, an interdisciplinary, open access, and peer reviewed publication.
- **Danial Baker** was recognized for 30 years of service to Washington State University.



Danial Baker, Pharm.D., FASHP, FASCP

STUDENT ACHIEVEMENT

Doctor of Philosophy (Ph.D.) students

- **Heidi Medford** and **Emily Cox**, with two faculty co-authors, have published “Consuming a Western diet for two weeks suppresses fetal genes in mouse hearts,” in the American Journal of Physiology - Regulatory, Integrative and Comparative Physiology. [read more](#)
- **Emily Cox** has received \$2,000 from the College of Pharmacy M. Virginia Schafer Research Fellowship in

Human Nutrition, Dietetics and Exercise Physiology.

- **Brandon Gufford** received \$2,000 from the James and Diann Robbers Student Research Award.
- **Kara Vogel** was awarded a \$500 travel grant from Associated Students of Washington State University Spokane (ASWSUS).
- **Brandon Gufford** was also awarded a \$500 travel grant from ASWSUS.
- **Julie Larsen** received \$2,000 from the College's James and Diann Robbers Student Research Award.
- **Alissa Underhill** received \$2,000 from the College's Dean Fletcher Graduate Fellowship.
- **Emily Cox** and a faculty co-author published, "A systematic review of fetal genes as biomarkers of cardiac hypertrophy in rodent models of diabetes," in PLOS ONE, a peer-reviewed open-access resource from the Public Library of Science.

Doctor of Pharmacy (Pharm.D.) students

- **Patrick Stolz** was accepted into the National Community Pharmacists Association (NCPA) National Student Leadership Council.

Coming Events

- March 9-12, 2014
The Society for Inherited Metabolic Disorders has invited **K. Mike Gibson** to present, "GABA and Mitophagy: Novel Pathomechanisms in Disorders of GABA Metabolism," at their annual meeting in Pacific Grove, Calif.
- March 12-13, 2014
WSU student pharmacists and faculty will join the National Association of Chain Drug Stores for Rx Impact Day in Washington D.C., to speak with legislators about pharmacy issues.
- July 12, 2014
The National PKU Alliance (NPKUA) has invited **K. Mike Gibson** to present at the third national conference July 10-13, 2014, in Salt Lake City, Utah.
- May 11, 2014
The International Society for the Study of Xenobiotics as invited Experimental and Systems Pharmacology Associate Professor **Mary Paine** to present, "Herb-Drug Interactions," at the 5th Asia Pacific ISSX Meeting in Tianjin, China.
- September 21, 2014
Sergei Tolmachev was invited to present research findings at the 2014 Radiation Research Society Meeting in Las Vegas, Nev.



College of Pharmacy

P.O. Box 1495, Spokane, WA 99210-1495 | www.pharmacy.wsu.edu