Vision
The UNM College of Pharmacy will be the premier college of pharmacy, recognized for excellence, leadership and innovation in pharmaceutical education and research.

Mission
The mission of the UNM College of Pharmacy is to develop pharmacists, educators and scientists whose leadership, dedication and innovation improve the health of our local and global communities.

Values
The UNM College of Pharmacy is committed to the following values:

A culture of high expectations regarding integrity, accountability, lifelong learning and continuous quality improvement.
Compassion, respect and cultural competency.
Diversity in people and thinking.
Effective utilization of our resources.
Support of professional and personal growth.
Collaborative interactions and interprofessional learning.
Service to our communities through education, research and health care.

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from the Dean of the College of Pharmacy

The College of Pharmacy marks a milestone this year - 70 years of educating and training New Mexico’s pharmacists.

While they are teachers, faculty in the college are also active scientists, working in labs to advance human health through better drugs or drug target identification and in clinical settings in search of better therapeutic outcomes and improvements in health care policies.

Our faculty are engaged in biomedical research projects that contribute to knowledge in toxicology, pharmacology, environmental health and radiopharmaceutical development, among a host of other disciplines. They collaborate with colleagues across the UNM Health Sciences Center campus as well as scientists around the world. And their work spans the research spectrum, from basic science discoveries to first-in-man clinical trials to community health applications to wide-ranging health policies.

I’m proud to say that our research funding is growing. Thanks in part to our “Request-for-Proposals Intramural Pilot Funding Initiative,” which stimulated interdisciplinary collaboration on large-scale grant proposals, research grants and contracts awarded to our faculty members exceeded $7.8 million last year. Our college now ranks in the top tier of colleges of pharmacy in National Institutes of Health funding and in total research dollars.

As you’ll read in these pages, our faculty members are engaged in a wide variety of research that seeks to understand how arsenic and uranium cause disease, how a radioisotop might diagnose appendicitis or better treat asthma, even how smokers might kick the habit without packing on the pounds. Some of their work has led to patents on important inventions to treat melanoma and tuberculosis and to better diagnose TB, pneumonia and other infections.

All of this research is in line with the college’s core mission - to prepare the pharmacy leaders of tomorrow and to improve the health of New Mexico. We invite you to learn more about the thriving spirit of discovery in our classrooms and laboratories and our commitment to bettering human health.

Here’s to another 70 years of excellence, innovation and leadership!

- Lynda S. Welage, PharmD, FCCP

from the Associate Dean for Research of the College of Pharmacy

College of Pharmacy scientists are creative visionaries. With a combined 21 active U.S. patents and another 34 patent applications pending, our faculty researchers are seeking innovative solutions to combat deadly diseases and health issues.

Faculty in the College of Pharmacy brought in more than $7.8 million in research awards in fiscal 2016, an increase of 40 percent over the previous year. Of that, more than $5.2 million came from the National Institutes of Health, an increase of 121 percent over the previous year. Other sponsors include the Centers for Disease Control and Prevention, National Science Foundation, American Heart Association, American Association of Colleges of Pharmacy and Bill & Melinda Gates Foundation. In fiscal 2015, we maintained this high level of research funding.

In the American Association of Colleges of Pharmacy’s most recent rankings, UNM’s College of Pharmacy placed 27th among 130 colleges of pharmacy in total research funding. Most noticeably, in terms of percentage of PhD faculty with NIH funding, we were among the top five pharmacy schools in the country.

More than 30 of our faculty members in the College of Pharmacy are involved in doing research. They submitted 80 proposals during fiscal 2015, and 50 of these proposals were funded for a very impressive success rate of 63 percent.

How did we do that? To encourage and promote interdisciplinary scientific collaboration, the College initiated its Request-for-Proposal Intramural Pilot Funding Program. By fostering diverse team science collaborations and building on our areas of excellence, the College was able to expand its research enterprise in the form of increased extramural funding, including large-scale programmatic grants and other high-impact outcomes. In fiscal 2015, a team of environmental health researchers successfully obtained a NIH P50 grant to establish the UNM Center for Native American Environmental Health Equality Research. The researchers also submitted an NIH P42 Superfund Basic Science Research Center application that will investigate the impact of exposure to toxic metals on human health.

Inside this brochure, you will find stories about some of the exciting studies by our researchers, and also meet our faculty and learn more about each of their areas of scientific inquiry.

- Jim Liu, PhD
In basement laboratories in the UNM School of Pharmacy, small imaging machines with narrow tubes take detailed pictures of mice, rats and ferrets that have been shot through with radioactive tracers. The multi-million-dollar scanners are being used in radiopharmaceutical research on small animals to answer questions that are important to human health: Is this cancer drug targeting the right cells? Can we locate infection to quickly diagnose appendicitis? Exactly what part of the lung does this particular asthma drug reach?

Along with a robust research menu that aims to improve the next generation of radiopharmaceuticals, pharmacy students also get real-world experience in preparing radiotracers in an active, commercial nuclear pharmacy. It is a modern extension of a story that began here four decades ago when the University of New Mexico’s pharmacy college established the first radiopharmacy in the world. With the goal of standardizing the radioactive isotopes being used in the burgeoning field of nuclear medicine research, UNM’s on-campus nuclear pharmacy opened for business in 1973 – the only licensed nuclear pharmacy in the world. Those early faculty members developed a pharmacy business that prepared and delivered safe and standardized doses of nuclear medicines.

In addition to supplying radiotracers for bone scans, heart scans and other medical tests to hundreds of clinics and hospitals throughout New Mexico and neighboring states, the pharmacy also trained the first generation of nuclear pharmacy students. “By the second or third year,” said Jeffrey Norenberg, director of radiopharmaceutical sciences at UNM, “all the students who were coming through this program, they were going out and starting an industry. It was the birth of a program.”

Drug companies, for example, want to know where their asthma drugs in development actually go once a patient inhales them. Norenberg’s lab developed an animal model that started with mice. The mice got a radiolabeled aerosol and then their lungs were scanned. Researchers could see whether the drug stopped in the airway or got deep into the lung. In the lung, did it remain in the center or move to the edges? After mice they moved up to larger lungs: rats, then ferrets, then rabbits, then dogs, then people. The results were published in the Journal of Aerosol Medicine to help other drug formulators.

“I’m excited that we can visualize drug delivery and drug action in a noninvasive way,” Norenberg says. “We can actually see where that drug is going in their lung and we can start to imagine how we could look at outcomes.”

Norenberg’s lab has also developed a radiotracer that finds a specific protein in metastatic colorectal cancer – the G3C protein – that can be used to determine a tumor’s size and extent before a patient receives drug that targets that protein. And he has several patents on radiotracer technology that locates inflammation, which he hopes might be used for better diagnosis of appendicitis, for example.

Radiopharmacy techniques can also help the pharmaceutical industry make better-informed decisions on drug development. “We can help them get to the go/no go decision earlier,” Norenberg said. “And we can do that for them at a fraction of the cost. If a drug isn’t reaching its target, we can show that. We’re helping them kill projects that won’t be successful much earlier.”
Meet the INNOVATORS
College of Pharmacy faculty turn science into inventions

Faculty at the College of Pharmacy have dedicated their careers to finding cures, effective treatments and better diagnoses for some of the most deadly diseases. Some of that research, commercialized through the STC:UNM technology transfer organization, has led to U.S. patents on inventions to treat melanoma and tuberculosis and to better diagnose TB, pneumonia and other infections. Currently, faculty members in the College of Pharmacy have a combined 21 active patents affiliated with their work at UNM, with another 34 active patent applications pending.

Meet some of the College of Pharmacy’s innovators.

Graham Timmins

“Whatever I do of kind is put unusual things together,” says Graham Timmins, an associate professor in the College of Pharmacy’s Department of Pharmaceutical Sciences. It’s a modest statement from a researcher who holds eight UNM-affiliated patents. His inventions involve innovative technology to quickly diagnose tuberculosis and other lung infections, a more effective treatment for TB and a method for evaluating sunscreens for their protection against all potentially damaging solar radiation.

His research is focused on using stable isotope-labeled compounds and free radical biology - the unusual things he puts together - to better diagnose and treat some common and deadly diseases. His rapid breath test technology, known as the urease breath test, allows a patient to inhale a stable isotope-labeled tracer compound through a nebulizer or inhaler that quickly surveys the lung for ureases, bacterial enzymes that are expressed by many bacteria.

“You can screen for tuberculosis,” Timmins says. “You can see if somebody’s got pneumonia. You might be able to see the difference between viral and bacterial pneumonia.” His rapid breath test technology patents have led to the creation of a company, Avisa Pharma, headquartered in Santa Fe. The company has raised $8 million and its first clinical development is focusing on using Timmins’s rapid breath test for TB with plans to expand research into pneumonia and cystic fibrosis.

Timmins anticipates the test will be useful in screening for TB in developing countries, where long distances and limited transportation combine to lose a lot of patients to follow-up care. Another of his innovations modifies an existing TB drug with stable isotopes to improve its effect on the infection.” It’s very, very complex, “ Timmins says. “It’s taken me seven or eight years to figure it out.”

Another patent addresses the efficacy of sunscreens in protecting against melanoma. Sun Protection Factor ratings only measure protections against UV radiation, not all of the potentially damaging wavelengths. His patent involves analyzing a sunscreen for all the potential melanoma protection factors.

And another involves using the breath test to diagnose pseudomonas aeruginosa in cystic fibrosis patients. Once it is established, it’s very difficult to eradicate, but when caught early it can be eradicated, so Timmins hopes the test will significantly improve the lives of some cystic fibrosis patients.

Jeffrey Norenberg

Jeffrey Norenberg, a specialist in radiopharmaceuticals, has four UNM-affiliated patents, all within a family of inventions that surrounds the use of a novel small molecule to image inflammation. Norenberg’s invention is a unique molecule that is selective for lymphocyte function-associated antigen, also known as LFA-1, a protein that is expressed on the surface of white blood cells and not on any other normal tissue.

“It’s only on these white blood cells and that makes it a very unique target for imaging,” Norenberg says. “We think that it has some novel applications in imaging infections and inflammations, things like arthritis or lupus. And also it could be important for evaluation the inflammatory component in other diseases.” For example, some atherosclerotic lesions are benign, but others can break up and form deadly clots. There’s evidence to suggest that the propensity for forming clots is related to the immune cell activity in those plaques. Could this probe give good diagnostic information about which plaques might cause trouble?

Norenberg hopes his approach might also help to better diagnose appendicitis and eliminate some costly and potentially dangerous unnecessary surgeries. Because many appendectomies are performed on a guess that the appendix is infected, many billions of dollars are spent on unnecessary appendectomies. “This could provide much more diagnostic certainty,” Norenberg says. “We would inject the patient with the radiopharmaceutical and the appendix would have a lot of immune cells accumulated there and we would be able to image that there is an abnormal accumulation of white blood cells that we think is consistent with appendicitis.”

Linda Felton

Linda Felton, a professor at the College of Pharmacy and the chair of its Department of Pharmaceutical Sciences, describes her research as “kind of all over the place” with one general theme: drug delivery systems. “Deliver drugs better, that’s my thing,” says Felton, a former practicing pharmacist. “In particular, I’m interested in modifying drug release.”

One of her patent applications involves a novel approach to delivering antibiotics directly to an infection. Felton is looking at loading antibiotics into a porous nanoparticle encased in a lipid bilayer that was developed by the UNM School of Engineering and Sandia National Laboratories. Her invention sequesters the antibiotic in the nanoparticle until it finds the bacteria, rather than allowing the antibiotic to travel throughout the bloodstream. “It would lessen exposure systemically and potentially it could be more effective so you would need a lower dose,” Felton says.

Another of her patent applications looks to keep sunscreen on the skin, where it is useful. Because sunscreens contain small molecules, they penetrate the skin. She found those small molecules to larger molecules so they stayed on the skin surface and found the sunscreen continued to function properly.

Felton also has patent applications for a marker on the inactive ingredients in drugs that could identify legitimately manufactured drugs to help stop drug counterfeiting. And, she has a patent pending on a formulation of glucosamine and chondroitin, over-the-counter supplements, which were found to be effective in treating moderate and severe knee osteoarthritis in a clinical trial conducted through the Department of Veterans Affairs.
meet the **INNOVATORS**

**Todd Thompson**


Thompson, who also has three patents that involve using pentamethylenenonanol in the treatment of prostate cancer from his research at the University of Wisconsin, continued to work on prostate cancer therapies when he came to UNM, and in doing so expanded his cancer research resulting in a patent for the treatment of melanoma, a form of skin cancer.

Working with UNM’s Center for Molecular Discovery, Thompson received a National Institutes of Health grant to use a biochemical assay he had developed to screen drugs that are off-patent for their original use for possible effectiveness on prostate cancer. His team screened 1,200 drugs and found 80 that looked as though they might be effective.

Thompson then asked medical oncologists at the UNM Cancer Center to review those 80 drugs and narrow them down to ones they believed might be most effective. Thompson ran those compounds through a wide array of different cancer lines and got a surprise. “All of these drugs were good against prostate cancer, but they were very good against melanomas,” he says. “And there were a couple of drugs that showed extreme activity.” The most active was the tricyclic antidepressant nortriptyline. The patent is for the treatment of melanoma using nortriptyline and Thompson predicts it will become a drug used as part of combination therapy to treat melanoma.

The core of Thompson’s scientific inquiry is applied science. “I work in line with taking scientific ideas and trying to translate them to make sure that they can help people,” he says. And in the current drug marketplace, patenting an invention is the path to attracting the capital that leads to drug development and puts therapies on pharmacy shelves.

“I think it’s part and parcel of the process,” Thompson says. A patent provides the marketing support that allows a company to potentially make money on a drug, so they are willing to invest in bringing it to market.

“I have no interest in doing research if it isn’t going to help people,” he says. “And a drug isn’t going to help people if somebody isn’t going to market it, making therapy available so it can make a difference.”

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**Laurie Hudson**

Another UNM patent approved and awaiting issuance also came out of the Center for Molecular Discovery screening of drugs that are now off patent for their original purpose. “It was a needle in a haystack,” says Laurie Hudson, professor of pharmaceutical sciences whose interests are in environmental metals and novel therapies for ovarian cancer.

In collaboration with UNM colleagues Angela Wandinger-Ness, Larry Sklar, Zurah Surviladze, Tudor Oprea, Jeffrey Aube, Jennifer E. Golden, Chad E. Schroeder, Denise S. Simpson and Julica J. Nöth, it was discovered that one component of ketorolac, a nonsteroidal anti-inflammatory approved by the FDA for pain relief, controlled GTPases, the chemical switches inside a cell that regulate biochemical reactions – including cell growth and how cells adhere to each other.

Isolating the Rkotorolac from the S-ketorolac, Hudson said, “had an activity in cells that was unexpected.” Their approved patent was for isolating that component to slow ovarian cancer growth and spread. They are now modifying the application to expand its use to other cancers.

Hudson’s other patent application, with the College of Pharmacy’s associate dean for research, Jim Liu, and others also looks to repurpose an existing drug in the fight against cancer. In looking at arsenic, one of Liu and Hudson’s interests, they knew that it inhibits DNA’s ability to repair itself, which often leads to cancer growth.

While they study arsenic as a cancer-causer, Hudson says, “We turned that on its head.” “Our idea, and the basis of the patent, is that if arsenic inhibits DNA repair, then it might increase the amount of DNA damage caused by cancer therapies in the cancer cells.” This increased DNA damage could then lead to greater cancer cell death.

Their idea was that arsenic trioxide, an anticancer chemotherapy drug used to treat certain kinds of leukemia, might be used more broadly, in conjunction with radiation and chemotherapy drugs, to boost the efficacy of those treatments by damaging DNA. While some drug patents recognize new inventions, “utility” patents like these take an existing drug and match it with a new purpose.

“The value of taking these existing drugs to improve cancer therapies is that the time from the idea to human application is much shorter than it is with a new drug,” Hudson says.

“`The value of taking these existing drugs to improve cancer therapies is that the time from the idea to human application is much shorter than it is with a new drug.”`
Mining Science for Better Health Outcomes

College of Pharmacy colleagues collaborate on environmental research

The College of Pharmacy’s Department of Pharmaceutical Sciences, long involved in research related to toxicology and environmental health, has narrowed its focus in the last few years to zero in on environmental metals. Department faculty are in a prime spot to study the health effects of environmental contamination from uranium left behind after decades of mining on Indian lands and of arsenic, a naturally occurring metalloid that contaminates well water across New Mexico that can also be a byproduct of uranium mining. The METALS group (Metal Exposure and Toxicity Assessment on Tribal Lands of the Southwest) brings together basic science researchers and toxicologists to better understand how metals cause disease, a critical step in preventing further exposure and affecting environmental policies.

The college has also just won $5 million in funding from the National Institute for Environmental Health Sciences, the National Institute for Minority Health and Health Disparities and the U.S. Environmental Protection Agency to form the Center for Native American Environmental Health Equity Research. It is also developing a Superfund Basic Science Research Center focused on this problem in Native American communities. “We see this as an emerging program that really brings together a lot of the skills and expertise within the college,” said Johnnie Lewis, a professor of pharmaceutical sciences and the principal investigator of the center grant. “It’s really a chance to merge a lot of research interests that previously were not collaborating. And as a team we’re stronger than we were as individuals.”

Laurie Hudson, a professor in the college’s Department of Pharmaceutical Sciences, and Jim Liu, the college’s associate dean for research, teamed up to ask a very basic science question related to the METALS team’s work: How does arsenic cause problems in cells? They found that arsenic inhibited the ability of cells to repair DNA, an important function for health. And they found that arsenic interacted with or could bind to some DNA repair proteins that had a particular structure called a zinc finger that controlled their function, thereby blocking the repair process. They wondered, Hudson said, if zinc might be protective at a higher level. They tried shifting the balance between arsenic and zinc in cells and mice and found that raising the zinc level could offset the effect of arsenic.

Hudson and Liu just received an NIH grant to look at low zinc levels as a risk factor in terms of arsenic-induced damage. They will be looking at blood taken from women in another of Lewis’s projects, the Navajo Birth Cohort Study. That study has recruited 500 Navajo women who are expecting babies to obtain health information at a prenatal stage and after giving birth. They will be followed for at least a year. Having blood samples from arsenic-exposed pregnant women who have been taking prenatal vitamins that contain zinc will open a door on further research into how adequate zinc levels might protect against disease. “It was a natural partnership in asking whether having sufficient amounts of zinc would be protective in people,” Hudson said. “Looking at women taking zinc supplements, we will be able to see whether there is a protective effect.” If zinc is protective, it would be a low-cost way to prevent some DNA damage associated with arsenic exposure.

Another colleague in the Department of Pharmacoeconomics, Matthew Campen, is looking at the problem from another angle — the cardiovascular effects of air pollution. Using blood samples from the Navajo birth cohort project, Campen and graduate student Molly Harmon are looking for biomarkers of inflammation related to cardiovascular disease. Plotting where the Navajo participants live in relation to abandoned mines sites, Campen’s laboratory found a strong correlation. “It shows the closer you live to these abandoned uranium mines, the greater your overall inflammatory potential is,” Campen said. “It’s very preliminary, but it’s just flooring me what a strong relationship it is.” Inflammation is associated with cognitive, autoimmune, metabolic and cardiovascular disease, so the findings could lead to further inquiry into the association between uranium wastes and those diseases. The collaboration between scientists within the College of Pharmacy led to that discovery, and Campen is excited about even more collaboration with the newly funded center. “It dramatically increases our abilities to do research and interact with the communities that are affected by the mining sites that have been abandoned,” he said. “It puts us at the top of the country for environmental health research in these questions.”

Another line of inquiry asks about how arsenic and uranium cause disease in different populations. Scott Burchiel, a senior associate dean at the College of Pharmacy and its former associate dean for research, received the first National Institutes of Health grant at the college and has been continually funded by NIH for a quarter of a century. His focus has always been on environmental health and toxicity and his work now focuses on arsenic exposures. In laboratory tests looking at the effects of arsenic and uranium on the immune system, Burchiel is determining whether exposure during pregnancy is associated with greater risk. “If you expose pregnant mice to arsenic, they’re much more sensitive,” Burchiel found. “So we’re starting to do a major new effort on gestational exposures of arsenic and uranium in mice.” This work could have important implications for the Navajo birth study. “Depending on genetic makeup,” he says, “you may be more or less sensitive to arsenic and uranium exposure.”
Ludmila Bakhireva

All Bakhireva and her colleagues studying substance abuse have to do is find research questions to look around New Mexico. “Substance abuse is such a big public health problem here,” says Bakhireva, an associate professor of pharmacy, family medicine, epidemiology and biostatistics.

With Bakhireva’s research into the use of naloxone to prevent opioid overdose deaths and the effects of opioids and alcohol during pregnancy on child development and other substance abuse research by some of her colleagues, the College of Pharmacy has carved out an important niche.

“It’s really one of our areas of excellence,” Bakhireva says.

A prime goal of Bakhireva’s research is to identify children exposed to drugs and alcohol in utero and to better understand the early cognitive effects of that exposure. Bakhireva follows expectant mothers from prenatal care through delivery and the baby’s first 20 months.

She is also lending an arm to systematically and objectively evaluate the prevalence of prenatal alcohol exposure in community-based settings. While fetal alcohol spectrum disorder and other neurological deficits related to utero alcohol and opioid exposure are often diagnosed when a child enters school, Bakhireva hopes her research will lead to identifying affected children earlier in life so they can benefit from early interventions. “One of our goals,” she says, “is to help children achieve the best possible outcomes.”

Bakhireva is also taking advantage of the unique ability of pharmacists in New Mexico to prescribe naloxone to study the population receiving the overdose-reversing drug. She and colleague Amy Bachyra are working with the New Mexico Pharmacists Association to study community pharmacists’ attitudes toward prescribing the drug and developing a database that will show which kinds of drug users in New Mexico are receiving naloxone prescriptions to possibly reveal overlooked populations — for example, longtime users of prescription opioids who might benefit from having naloxone in the medicine cabinet just in case. “We are pioneering this line of research in the nation,” Bakhireva says.

Ajna Hamidovic

Hamidovic, an assistant professor in pharmacy and psychiatry is in the early stages of a clinical trial for development of a novel therapeutic agent for smoking cessation. Her working hypothesis: “From the data we have available, it looks like abstinent smokers substitute one addiction for another,” Hamidovic says. “They eat and get Type 2 diabetes at an alarming rate. It’s a little-known fact. And it’s a big problem.” Hamidovic is testing intranasal insulin — insulin that bypasses the bloodstream and is delivered directly to the brain — in hopes that it can help smokers feel full and reduce the incidence of Type II diabetes in abstinent smokers. But the therapy also holds the potential to increase abstinence rates because many smokers refuse to quit due to fear of gaining weight. People who quit smoking often gain weight — 5 to 10 pounds, with a sizable portion of smoking abstinence gaining more than 15 pounds.

She recruits heavy smokers — those who smoke at least 10 cigarettes a day and studies what happens to their appetite, food and nicotine cravings, snacking behavior and physiological ability to process a fatty meal in addition to their memory and mental focus as soon as they stop using nicotine. She repeats the same tests after a dose of the nasal insulin. Looking at insulin’s effects on memory and mental focus is a key to longterm smoking cessation, Hamidovic says. “People don’t continue to abstain,” she says, “because they don’t feel sharp. Higher insulin levels in the brain resulting from this treatment are likely to help with that.”

Hamidovic has just started another study that puts her cold-turkey subjects in a room with three plates heaped with Girl Scout cookies and tells them they can eat as much or as little as they like. The experiment is performed with an insulin dose and a placebo dose. She is testing whether the insulin will interfere with their eating behavior to regulate satiety and reduce caloric intake. Hamidovic is hopeful her work in the lab and the clinic could be a key to helping encourage people to quit smoking, continue their abstinence longer and be healthier ex-smokers.

from Bench to Bedside & Beyond
Pharmacy Practice faculty translate science to better outcomes.

Faculty in the College of Pharmacy’s Department of Pharmacy Practice and Administrative Sciences and PEPFAR, its graduate program in Pharmacoeconomics, Epidemiology, Pharmaceutical Policy and Outcomes Research, are making medicines safer by tracking severe adverse outcomes, analyzing how drug overdose interventions can better reach the populations whose lives it intend to save, working toward earlier interventions for children exposed to drugs and alcohol in utero, carrying away at health disparities in minority populations — even finding better ways for smokers to kick their habit.

As participants in UNM’s Clinical & Translational Science Center, one of 62 National Institutes of Health–supported research centers in the country, the college’s “bench to bedside” efforts are part of a commitment to translate basic science into better drugs, better health care practices and better public health policies.

“Researchers do a lot of work in our silos, but it never really ends up in practice,” says Dennis Raisch, a professor in the Department of Pharmacy Practice and Administrative Sciences and chair of PEPFAR. “Our focus here is completely on patients by helping research findings become health care practice.”

Dennis Raisch

Raisch’s personal interest is in studying serious, rare adverse reactions that occur in cancer treatments and other drugs. “We try to be one of the first groups that identify these reactions and increase awareness of those reactions to the physicians that are involved,” Raisch says. But, how to identify and quantify those reactions beyond anecdotal reports?

Raisch uses the FDA’s MedWatch database of adverse reactions to find patterns. The database includes millions of drug reactions reported by patients, physicians and other health care providers.

If physicians have noticed some cases of liver failure in patients using a particular drug, for example, Raisch might search the entire database for reports of liver failure and calculate the ratio of those reactions for the drug compared to other drugs.

By limiting the search to only patients receiving the targeted drug, he can determine if there is a disproportionately high rate of liver failure associated with the drug.

His findings can result in a “Dear Doctor” letter being sent to alert physicians and other health care providers of an unexpected negative reaction to a certain drug, a revision to the package insert or a boxed warning on a medication of a serious side effect. In certain rare cases, the FDA could decide to pull a drug from the market.

“We look at ourselves as an early warning system,” Raisch says. “I find it very rewarding.”

“Our focus here is completely on patients by helping research findings become health care practice.”

“From the data we have available, it looks like abstinent smokers substitute one addiction for another.”

“One of our goals is to help children achieve the best possible outcomes.”
from Bench to Bedside & Beyond

Matthew Borrego

Borrego’s field of pharmaco-economics uses clinical trial data and computer models to assess the economic efficacy of various drugs, medical devices and interventions. “We try to see where we’re getting the best bang for the buck,” Borrego says. “Not necessarily the cheapest, but the most cost effective.”

Borrego and graduate student Aakshay Khara just published the results of a large study of the disparities in treatment of asthma. Using a national database, they looked at Hispanic and non-Hispanic white populations to determine who is being prescribed and has access to recommended inhaled corticosteroid medications.

Among children, they found no difference between the ethnic groups. Among adults the difference was significant. Twenty-one percent of Hispanic adults were prescribed corticosteroids compared with 41 percent of non-Hispanic whites. Patients over 65 also had a 2.3 times greater chance of receiving an inhaled corticosteroid. Borrego attributes the difference to the young and elderly having greater access to medical insurance. The study relied on pre-Affordable Care Act data from 2009 and Borrego points the disparities can be attributed to minorities having less access to or worse health insurance coverage as well as differences in cultural beliefs and quality of care delivery.

Because the long-term health outcomes are better among asthma sufferers who use inhaled corticosteroids, Borrego believes narrowing that prescription gap between Hispanics and non-Hispanic whites could improve and save lives as well as save money for the health care system. “You pay me now or you pay me later,” Borrego says. “They’re going to be landing up in the emergency room or worse.”

“We try to see where we’re getting the best bang for the buck...not necessarily the cheapest, but the most cost effective.”

Joe R. Anderson, PharmD, PhC, BCPS

Associate Professor of Pharmacy Practice and Administrative Sciences
Associate Professor of Medicine
PharmD, The University of Texas at Austin and The University of Texas Health Sciences Center at San Antonio, 1995
BS, Pharmacy, University of New Mexico, 1991
BS, Biology, University of New Mexico, 1988

My research interests are in cardiovascular pharmacotherapy, specifically related to heart failure and primary and secondary ASCVD prevention, and health outcomes, particularly as they pertain to advanced pharmacy practice.

Andersen has more than 20 years experience in clinical trial research as a principal investigator, co-investigator and research coordinator, and serving on the Data and Safety Monitoring Board committee for clinical research trials. He is co-director of a post-doctoral clinical research fellowship in Cardiovascular Pharmacotherapy. His laboratory (shared with his colleague, James Nauwrooks, PharmD) has expertise in the assessment of platelet aggregation through the use of whole blood aggregometry equipment. Their lab has studied the effects of various medications and natural compounds on platelet aggregation. Recently, Andersen collaborated on several Clinical Translational Science projects with colleagues in the Department of Pharmaceutical Sciences to identify and validate a novel biomarker of cigarette smoke-induced CV disease and to evaluate novel endothelial cell biosensor methodology to detect subclinical inflammation in patients of varying degrees of CV risk.

Honors and Awards
Pharmacist of the Year, New Mexico Society of Health-System Pharmacists, 2005
Phi Lambda Sigma Pharmacy Leadership Society, 2006
University of New Mexico College of Pharmacy Teacher of the Year, 2007
New Mexico Pharmacists Association’s Innovative Pharmacy Practice Award, 2008
Dorothy Dillon Memorial Award, 2010

Recent Grants and Contracts
Co-I, AHA Grant-in-Aid 15GRNT22700039, “P450s and Endothelial Dysfunction”
Co-I, UNM CTSC, “PM50 Fatty Acid Metabolites and Cigarette Smoke-induced Cardiovascular Disease”
Co-I, CTSC, “Relationship of Hba1c and platelet aggregation response to aspirin in patients with type 2 diabetes mellitus”

Select Publications
Amy Bachyrycz, PharmD
Assistant Professor, UNM College of Pharmacy
Shared Faculty, Walgreens Patient Care Center
BS, Pharmacy, University of Connecticut, 2002
PharmD, University of Connecticut, 2004

My research interests focus on areas of need specific to the community while utilizing the outpatient/community pharmacy setting and developing innovation with an emphasis on pharmacy profession advancement and advancement of pharmaceutical care.

Bachrycz is involved heavily in the New Mexico Pharmacists Association as past president and current district counselor on the executive board. She also has a strong focus on public health and volunteers at various preventative health events throughout the state for those in need. She has authored and co-authored manuscripts specific to community pharmacy outcomes, public health and preventative medicine, while continuing to write policy to help advance the profession of pharmacy. She has written protocols that have become law specific to the areas of pharmacist prescriptive authority, including naloxone and tuberculosis testing. Because of these laws, pharmacists in the outpatient community pharmacy setting can now prescribe and dispense naloxone rescue kits and prescribe, administer and read tuberculosis tests for their patients in New Mexico. She has also been heavily involved in other protocols and laws allowing pharmacists to prescribe emergency contraception, immunizations, travel immunizations and tobacco cessation products, all while acting within the scope of a New Mexico pharmacist.

Honors and Awards
New Mexico Pharmacists Association: New Mexico Bowl of Hygeia Award, 2015
HealthInsight Shining Star Award, 2014
Cardinal Health Generation Rx Award, 2014
Immunization Coalition NMSISIS Champion, 2014

Select Publications
A.M. Bachyrycz, M.A. Dodd, G. Prelasky. Development and dissemination of a statewide system to minimize use of Potentially Inappropriate Medications (PIMs), Medical Care (2012).

Ludmila N. Bakhreva, MD, PhD, MPH
Associate Professor, Regents’ Lecturer
MD, Omsk State Medical Academy, Russia, 1999
MPH, Boston University, 2001
PhD, University of California - San Diego, 2007

My primary research interests are in the area of substance abuse, maternal and child health and pharmacoeconomics.

Bakhreva has extensive expertise in establishing and successfully following up cohorts of high-risk vulnerable populations. She is leading several multi-disciplinary clinical studies involving substance-using pregnant women and children affected by prenatal alcohol and substance abuse. She is leading an NIH-funded longitudinal study to identify early indices of functional brain damage resulting from prenatal alcohol exposure. Bakhreva’s research portfolio also includes studies examining the safety of medications during pregnancy and the effect of environmental exposures on adverse perinatal outcomes. She has authored more than 90 scientific manuscripts and other creative works and has been continually funded by the NIH since 2010. She is an NIH reviewer and serves as a councilor of the Teratology Society.

Honors and Awards
University of New Mexico Regents’ Lecturer award, 2011
Teratology Society F. Clarke Fraser New Investigator Award, 2011
New Investigator Award, North American Monophasic Association, 2004
Councilor, Teratology Society, 2013-2016
Chair, Teratology Society Education Committee, 2011-2012

Select Publications

Select Publications
Barry E. Bleske, PharmD
Professor
Chair, Department of Pharmacy Practice and Administrative Sciences
PharmD, University of Minnesota, 1986
BS, Pharmacy, Wayne State University, 1984

My basic and clinical research is in the area of cardiovascular medicine with a focus on heart failure. My work has also recently focused on research in the educational setting.

Select Publications

Honors and Awards
Fellow, American College of Clinical Pharmacy, 1997 – present

Recent Grants and Contracts
PI, Schwabe Pharmaceuticals, “WS 1442 Regulation of eNOS Expression via Epigenetic Mechanisms – Focus on MicroRNAs.”
PI, Community Research Foundation, “Heart Failure One Minute Clinic”
CoI, NIH 1R21 AG048500-01, “C23S1 variants as determinant of ACEI activation: a healthy volunteer study.”
CoI, FDA, "Modernization of in vitro vitro Oral Bioperformance Prediction and Assessment”

Matthew E. Borrego, PhD
Associate Professor
Department of Pharmacy Practice and Administrative Sciences
PhD, Pharmacoeconomics/Social and Administrative Sciences, University of Arizona, 1998
MS, Hospital Pharmacy Administration, University of New Mexico, 1995
BS, Pharmacy, University of New Mexico, 1989

My research interests include pharmacoeconomics and health outcomes, health policy, health disparities, health literacy and pharmacy education.

Select Publications

Honors and Awards

Recent Grants and Contracts
CoPI, "Relationship between Health Literacy and Chronic Kidney Disease Outcomes”. Southern Illinois University-Edwardsville.
CoPI and Director, Research Education and Training Core, “New Mexico Center for Advancement of Research, Engagement & Science on Health Disparities (NMCAKESH).” NIH - National Center on Minority Health and Health Disparities, Exploratory Centers of Excellence (02G Grant).
My research focuses on the effects of environmental agents on the immune system of humans and animal models, gene-environment interactions and epigenetics of immune suppression.

Recent Grants and Contracts
PI, NIEHS-funded R01 research grant, “Synergistic Immunosuppression by PAHs and Arsenite”
PI, NIEHS-funded “VICTER Supplement for Synergistic Immunosuppression by PAHs and Arsenite”
Co-PI, NIEHS-funded, interdisciplinary study, “UTEFLUNM ARCH Program on Border Asthma”

Select Publications

Honors and Awards
UNM’s 56th Annual Research Lecturer, 2013
Fellow, Academy of Toxicologic Sciences, 2009-present
Nunnio and Sherilyn DeSantis Endowed Chair in Pharmacogenomics, 2007-present
Society of Toxicology, Member and Chair Membership Committee, 2000-2003
Society of Toxicology Media Resource Specialist (Nontoxicology, Biotechnology and Biopharmaceutical Toxicology, Medical Devices, 1999-present

Matthew J. Campen, PhD, MSPH
Professor of Pharmaceutical Sciences
Chair, Environmental Health Signature Program
PhD, Environmental Health, University of North Carolina at Chapel Hill, 2000
MSPH, Environmental Health, University of North Carolina at Chapel Hill, 1997
BS, Biochemistry, Virginia Tech, 1994

I’m interested in the cardiovascular health effects of inhaled pollutants, such as ozone, combustion emissions and nanomaterials.

Recent Grants and Contracts
PI, NIEHS-funded Enhancement of Coronary Construction by Volatile Organic Air Toxics
Project PI, EPA-funded study of Cardiovascular Consequences of Immune Modification by Traffic-Related Emissions
PI, NIOSH-funded Endothelial Cells as Bioassay for Occupational Cardiovascular Risk
Co-PI, NIOSH-funded Systemic Health Implications of Occupational Nanomaterial Exposure

Select Publications
Jessica Conklin, PharmD, PhD, BCACP, CDE

Visiting Assistant Professor
Pharmacy Practice & Administrative Sciences
PharmD, University of New Mexico, 2011
BS, Biology, New Mexico State University, 2009

My current research interests involve assessing transgender patients’ needs in their medical home and the therapeutic effects of statins in the setting of drug interactions with antiretroviral therapy.

Conklin provides clinical pharmacy services to the patients of Truman Health Services clinic within the UNM Health Sciences Center. She has developed a thriving pharmacist–clinician–run primary care clinic with an emphasis in cardiovascular risk education and medication management for patients living with HIV/AIDS. In addition to her clinical activities, she is a preceptor for student pharmacists and pharmacy residents during their ambulatory care clerkship. She has previously published in the area of medication management and transitions of care.

Honors and Awards
United States Public Health Services Excellence in Public Health Pharmacy Practice Award, 2011
New Mexico Pharmacists Association Community Pharmacy Clinical Achievement Award, 2011
Joy Holloman Donelson Women’s Leadership Award, 2010

Select Publications

Karen L. Cooper, PhD
Research Assistant Professor
PhD, Biomedical Sciences, University of New Mexico, 2006
MS, Biology, New Mexico Institute of Mining and Technology, 2001
BS, Biology, South Dakota State University, 1986

My research focuses on the toxicity of metals (singly and in mixtures), in combination with UV radiation in a variety of cells types and animal models.

Cooper specializes in toxicity of metals, combinations of metals and in combination with DNA damaging agents in a variety of cells types (keratinocytes, melanocytes and kidney cells) and animal models. Her specific interests are in mechanisms of the inhibition of DNA damage repair by these environmental toxicants. She completed her dissertation research in the lab of Laurie Hudson, PhD, and continued as a contributing lab member during her post-doctoral training. She is currently a research assistant professor. Cooper is currently investigating the disruption of zinc-finger-containing DNA repair enzymes by arsenic and uranium, and the potential intervention by dietary zinc.

Honors and Awards
Society of Toxicology, Member and Secretary/Treasurer of Mountain West Chapter, 2012-present
Member Society of Toxicology, 2002-present

Select Publications
Dawn A. Delfin, PhD

Assistant Professor
PhD, Medicinal Chemistry and Pharmacognosy, Ohio State University, 2007
BA, Chemistry, Smith College, 1998

My research focuses on improving stem cell therapy as a novel treatment for heart failure.

Delfin has a background in drug discovery and design, using both chemistry and biology as approaches to discovering new treatments. Delfin is now researching ways to improve stem cell therapy to treat heart failure. A major impediment to the success of stem cell therapy for heart failure is that the stem cells do not adhere well to the support structure of the heart. The Delfin lab, with funding from the American Heart Association, is seeking novel ways to support cell adhesion to the heart. The Delfin lab uses cell culture, fluorescence microscopy and flow cytometry to answer these research questions. Delfin has served as a reviewer for medicinal chemistry journals, the NIH and the American Heart Association.

Honors and Awards
NIH KL2 Scholar, Clinical and Translational Sciences Center, University of New Mexico, 2013-present
Postdoctoral Fellow, Center for Muscle Biology and Disease Postdoctoral Fellowship, The Ohio State University- Nationwide Children's Hospital, 2012-2013
Postdoctoral Fellow, United Negro College Fund-Merck Science Initiatives, 2011-2012
Postdoctoral Fellow, NIH T32 “Congenital and Acquired Heart Disease,” The Ohio State University, 2010-2011

Recent Grants and Contracts
PI, American Heart Association Beginning Grant-in-Aid, "Stem Cell Adhesion to the Extracellular Matrix of Remodeled Hearts"
PI, UNM Research Allocation Award, "Expression of integrins in stem cells to enhance their adhesion to cardiac extracellular matrix"
PI, UNM College of Pharmacy Team Research Pilot Project Award, "Determining the effects of diabetic serum on the promotion of cardiovascular disease"

Select Publications
S.A. Snugge, D.A. Delfin, et al. Claudin5 levels are reduced from multiple cell types in human failing hearts and are associated with maladaption of epithelial bi. Cardiovascular Pathology, 24, 160. PMID: 25660558 (2014).

Paulina Deming, PharmD

Clinical Associate Professor of Pharmacy Practice and Administrative Sciences
Assistant Director of Project ECHO HCV Programs
PharmD, University of New Mexico, 2004

My research interests are in patient outcomes during chronic hepatitis C virus therapy, including patients with advanced liver disease and cirrhosis.

Deming’s expertise is in chronic hepatitis C virus infections. She maintains a clinical practice specializing in HCV infections within the university-based HCV clinic, Truman Health Services HIV/HCV coinfection clinic, and Project ECHO (Excellence in Community Healthcare Outcomes). She collaborates in research initiatives through Project ECHO and the Project ECHO HCV consortium and has co-authored position papers on the management of HCV infections for professional pharmacy groups.

Honors and Awards
Society of Infectious Disease Pharmacists: Gits Panel Best Practices Recognition Award, 2014

Select Publications
Melanie A. Dodd, PharmD, PhC, BCPS
Associate Professor of Pharmacy in Geriatrics
Interim Vice-Chair for Clinical Affairs
Department of Pharmacy Practice and Administrative Sciences
PharmD, University of New Mexico, 1997
BS, Pharmacy, Purdue University, 1994

My research focuses on the development, implementation and impact of new pharmacist clinical practice models, including interprofessional teams, on patient outcomes. I also have an interest in the scholarship of innovative teaching methods with a focus on geriatric interprofessional education.

Recent Grants and Contracts
PI, MedEd Portal Interprofessional Educational Collaborative Collection, Educational Development Grant.
Co-investigator, NIH Pain Consortium, Centers of Excellence in Pain Education.
Co-investigator, Donald W. Reynolds Foundation Next Steps in Physician’s Training in Geriatrics Grant.
PI, New Mexico Medical Review Association, “Evaluation of New Mexico Medicaid pharmacy benefit and utilization.”

Select Publications


Dodd is an expert in the area of geriatric pharmacotherapy. She is a pharmacist clinician with prescriptive authority at the UNM Senior Health Clinic, providing chronic disease and medication management for older adults. She has played an active role in developing new pharmacist clinical practice models, credentialing processes and pursuit of pharmacist reimbursement at UNM. Her vision is that pharmacists provide direct patient care throughout the continuum of care as essential members of interprofessional teams. She believes it is important to embrace and advocate for the expanding roles of pharmacists, including specialization, which will require appropriate credentialing and privileging processes. Her research has focused on the development and impact of new clinical practice models involving the pharmacist as an essential member of the team, including pharmacists in advanced roles such as the pharmacist clinician. She has also been actively engaged in providing innovative geriatric interprofessional education.

Honors and Awards
Dorothy Dillon Memorial Lecture Award, New Mexico Society of Health-System Pharmacists, 2011
Pharmacist of the Year, New Mexico Society of Health-System Pharmacists, 2000, 2001
American Society of Health-system Pharmacists, Section of Ambulatory Care Practitioners, Chair, 2014-2015
American Society of Health-system Pharmacists, Council on Public Policy, Chair, 2012-2013

Eszter Erdei, PhD, MPH
Research Assistant Professor of Pharmaceutical Sciences
PhD, Immunology, Lorand Eotvos University of Budapest, Hungary, 2003
MPH, Epidemiology, University of New Mexico, 2010

My research focuses on integrating benchtop immunology research with community participatory research approaches among underserved and underrepresented communities in the United States, Latin America and Europe. My recent works are centered on various immunological effects of chronic, low-level exposures of uranium, mercury and other heavy metal in tribal community members in the Southwest and Midwest.

Recent Grants and Contracts
UNM HSC PI, NIH/NIH-funded NARCH VII research grant, “Immune Status Evaluation on the Cheseapeake River Shores” Co-I, A Prospective Birth Cohort Study Involving Uranium Exposures on the Navajo Nation” PI: Johnny Lewis, PhD. Co-I, NEHS-funded, interdisciplinary study, “UTEFLUNM ARCH Program on Border Asthma”

Select Publications
Linda A. Felton, PhD
Professor of Pharmaceutics
Chair, Department of Pharmaceutical Sciences
PhD, Pharmaceutics, University of Texas at Austin, 1997
BS, Pharmacy, University of Texas at Austin, 1986

My research focuses on polymeric film coating and modified release drug delivery systems as well as formulation development, blinding and GMP manufacturing of solid dosage forms for use in clinical trials.

Recent Grants and Contracts
PI, Biomedical Research Institute of New Mexico, “Formulation Development Services”
PI, Dow Chemical Company, “Evaluation of Very Low Viscosity Cellulosic Polymers as Immediate Release Film Coating Matrices”

Select Publications

Honors and Awards
Secretary/Treasurer, Formulation Design and Development Section of the American Association of Pharmaceutical Scientists, 2014-2016
Invited Participant, Alliance for Contraception in Cats & Dogs Scientific Think Tank, 2012
American Association of Pharmaceutical Scientists Modified Release Focus Group Steering Committee Member, 2006-present

Changjian (Jim) Feng, PhD
Associate Professor of Pharmaceutical Sciences
PhD, Inorganic Chemistry, Nanjing University, 1998
MS, Inorganic Chemistry, Central China Normal University

My laboratory is interested in how metal ions play critical structural and functional roles in biological molecules. Our primary research focus is on regulation mechanism of nitric oxide synthase, a flavo-hemoprotein responsible for biosynthesis of nitric oxide, a ubiquitous signaling and effector molecule in mammalian cell biology.

Recent Grants and Contracts
PL, NIH-GM-funded, “Mechanism of Electron Transfer in Nitric Oxide Synthase”
PL, NSF-funded, “Mechanism of Nitric Oxide Synthase Regulation by Interdomain FMN/Heme Docking”
PL, AHA-funded, “Control Mechanisms of Nitric Oxide Synthases”

Select Publications
Larry Georgopoulos, PharmD

Associate Dean of Clinical Affairs
Professor of Pharmacy Practice
PharmD, Pharmacology, University of New Mexico, 2009
BS, Biochemistry, University of Utah, 1974

My interests include Medication Therapy Management (MTM) programs, third-party payer provider contracts, contracts to provide MTM training to community pharmacies, contracts to federally qualified health centers and clinical pharmacy programs and contracted pharmacy network management.

Georgopoulos leads the College’s clinical initiatives in all health-system settings. He has extensive experience managing all aspects of regional pharmacy operations, including staff model and hospital pharmacy operations, clinical pharmacy programs and contracted pharmacy network management. Georgopoulos has a 25-year history of pioneering and embedding clinical pharmacists in medical group practices and is emerging as a nationally recognized leader in the pharmacist reimbursement model.

Honors and Awards
- Foundation of Manager Care Founders Circle, 2009
- FHP International Corporation-Presidents’ Circle Award, 1994
- FHP International Corporation-Employee of the Year Award, 1988
- University of Utah College of Pharmacy-L.S. Skaggs Pharmacy Scholar, 1974

Recent Grants and Contracts
- PI, Cardiac Care Consultants of New Mexico, “Cardiac Care Consultants Professional Service Agreement” (2014-2017)
- PI, ABQ Health Partners, “ABQ Health Partners Radiopharmaceutical Products” (2014-2016)
- PI, New Mexico Health Connections, “New Mexico Health Connections Consultation Professional Service Agreement” (2014-2016)
- PI, Trumain Health Services, “Trumain Health Services Professional Service Agreement” (2014-2016)
- PI, University of New Mexico Medical Group, “University of New Mexico Medical Group Consultant Pharmacy Services” (2014-2017)
- PI, Medco Health Solutions, “Gap In Care Program Professional Service Agreement” (2011-2012)

Donald A. Godwin, PhD

Executive Associate Dean for Education
Associate Professor of Pharmacy
PhD, Pharmaceutical Sciences, University of South Carolina, 1996
BA, Biological Sciences, University of Delaware, 1991

My research interests lie in the area of innovative programs to enhance student progression and graduation rates in a Doctor of Pharmacy curriculum. My recent work has been done on curricular changes to improve the critical thinking and problem-solving skills of pharmacy students.

Honors and Awards
- American Association of Colleges of Pharmacy Academic Leadership Fellow, 2006-2007
- Chair, AACP Student Services Personnel Special Interest Group, 2008-2009
- Nominations Committee, AACP Administrative Services Section, 2014 - present

Select Publications
Pamela R. Hall, PhD
Assistant Professor of Pharmaceutical Sciences
Regents’ Lecturer
PhD, Pharmacology, Case Western Reserve University, 2004
MS, Molecular Biology, University of Alabama in Huntsville, 1999
BS, Microbiology, University of Alabama in Huntsville, 1989

My research focuses on understanding host innate defense mechanisms against Staphylococcus aureus infection, as well as on development of novel vaccines and therapeutics to prevent and treat such infections.

Select Publications
B.O. Elmore, K.D. Triplett, P.R. Hall. Apolipoprotein B48, the structural component of chylomicrons, is sufficient to antagonize Staphylococcus aureus quorum-sensing. PLOS ONE, 10(5) (2015).

Honors and Awards
UNM College of Pharmacy Regents’ Lecturer, 2015
Junior Faculty Excellence in Research Award, UNM Health Sciences Center, 2013

Recent Grants and Contracts
PI, NIAID-funded R1 research grant, “Apolipoprotein B and Control of S. aureus Quorum Sensing”
PI, NIAID-funded R01 Research Supplement to Promote Diversity in Health-Related Research
PI, NIAID-funded R21 research grant, “VLP-based Vaccines for Targeting Staphylococcus aureus Secreted Virulence Factors”

Ajna Hamidovic, PharmD
Assistant Professor of Pharmacy and Psychiatry
PharmD, University of Wisconsin, 2002
MS, Clinical Investigation, Northwestern University, 2007

My research focuses on developing novel smoking cessation pharmacological treatments.

Select Publications
Hamidovic is a clinical investigator with expertise in conducting genetic association analyses and Phase II clinical trials. She has authored numerous papers and published her work in, among others, Neuropsychopharmacology, Translational Psychiatry and Cancer Prevention Research. Her work is currently funded by two R01 grants from the National Institute on Drug Abuse. Hamidovic is editor of Mental Health Clinician and is an active clinician at UNM Behavioral Health. She holds two Investigational New Drug Approvals by the FDA to evaluate novel pharmacological approaches for smoking cessation. Her Clinical and Experimental Drug Addiction Research Lab evaluates intranasal insulin for its efficacy in reducing cravings, improving cognitive function and reducing mood intake during smoking cessation. The lab actively uses tests of mood and cognition, eating behavior, stress reactivity and metabolic processing to analyze efficacy of CNS insulin in increasing smoking abstinence rates. Clinical measures collected in the lab include safety assessments of endocrine and olfactory neurological parameters.

Honors and Awards
Member, UNM Cancer Research Center, 2015
NIH (NIDA) Student Loan Repayment Program Award, 2015-2013
NIH/NIDA Outstanding Early Career Investigator Award, 2010
NIH/NIDA National Research Service Award, 2007-2010

Recent Grants and Contracts
F1, R03 DA038276 “Intranasal Insulin Treatment for Weight Management During Smoking Cessation”
F1, R03 DA036054 “Efficacy of Intranasal Insulin in Relieving Symptoms of Tobacco Abstinence Syndrome”
F1, F32 DA024920 “Genetic Variation in Amphetamine Response”

Select Publications
Select Publications

Recent Grants and Contracts
Sub-investigator, New Mexico Cancer Care Alliance, INST Protocol 1306 – “Genome sequencing of human cancer tissues” (2013-2015)
PL CTSC Pilot Grant, “Metrics of ethics for incidental findings in neuroimaging research.” The study involves a series of focus groups to develop information for refining surveys across constituent groups I.e. subjects, physician and IRB members) engaged with neuroimaging research. $28,436. (2013-2014)
Co-PI, NIH-funded R21 NS070750-01A1, “Optimization of incidental findings disclosure to research subjects.” The goal of this study is to optimize disclosure of incidental findings from neuroimaging studies to research subjects. $451,752. (2012-2014)

Recent Grants and Contracts
PL, NIEHS R01 Arsenic co-carcinogenicity with UV radiation and oxidation of target protein
PL, NIEHS VICTER Supplement Impact of zinc status on susceptibility to arsenic-induced toxicity
PL, NCI R01 Zinc Chelomprevention of Arsenic Co-Carcinogenicity
PL, DOD Test &A Award Inhibition of small GTPases as a novel therapeutic approach in ovarian cancer
PL, NCI R21 Capitalizing on NSAD rexinoid selectivity for cancer prevention and therapy (Q5)

Select Publications

Laurie G. Hudson, PhD
Professor of Pharmaceutical Sciences
UNM Regents’ Professor
PhD, Pharmacology and Toxicology, Harvard University, 1985
BS, Zoology, BS Biology, University of Washington, 1980

I have two major areas of research interest. One is focused on the mechanisms by which environmental metals disrupt protein function with an emphasis on inhibition of DNA repair. The second is investigating novel therapeutics for ovarian cancer and understanding molecular drivers of cancer metastasis.

Hudson has expertise in skin and ovarian cancers and cellular mechanisms that lead to cancer development and progression. She has authored more than 90 peer-reviewed scientific manuscripts and has been continually funded by the NIH for more than 20 years. She is an active reviewer for various foundations and NIH panels. Hudson’s laboratory conducts investigations through biochemical, cell biological, and basic and translational approaches. Studies in ovarian cancer have led to a pilot clinical trial to investigate the pharmacokinetics and pharmacodynamics of a candidate therapeutic drug. Investigations on the mechanisms of environmental metal toxicity are moving into exposed human populations in the Southwest.

Honors and Awards
Faculty Teaching Excellence Award for Biomedical Sciences, UNM School of Medicine, 2004
Teacher of the Year, FS-1, UNM College of Pharmacy, 2014
Nominee, New Mexico Women in Technology Award, 2014
Featured Inventor, UNM Science & Technology Corporation, 2014
Recipient, UNM Health Sciences Research Award, 2014

Recent Grants and Contracts
PL, NIEHS R01 Arsenic co-carcinogenicity with UV radiation and oxidation of target protein
PL, NIEHS VICTER Supplement Impact of zinc status on susceptibility to arsenic-induced toxicity
PL, NCI R01 Zinc Chelomprevention of Arsenic Co-Carcinogenicity
PL, DOD Test &A Award Inhibition of small GTPases as a novel therapeutic approach in ovarian cancer
PL, NCI R21 Capitalizing on NSAD rexinoid selectivity for cancer prevention and therapy (Q5)

Select Publications
Bernadette Jakeman, PharmD, PhC, BCPS, AAHIVP
Assistant Professor - Clinician Educator
Pharmacy Practice & Administrative Sciences
PGY2 Residency in Infectious Diseases, UNM Hospitals, 2009
PGY1 Residency, NM Veterans Affairs Health Care System, 2008
PharmD, University of New Mexico, 2007
BS, Chemistry, Willamette University, 2001

My scholarly activities focus on highlighting the innovative pharmacy practice in New Mexico.

Jakeman has worked as a clinician educator and clinical pharmacist in infectious diseases and HIV for the last six years. Her research relates to that work and includes pharmacotherapy interventions, effective practice initiatives and teaching initiatives.

Honors and Awards
- Elected Board Member, New Mexico Society of Health-System Pharmacists, President-Elect 2013-2014, President 2014-2015
- Finalist, Best Paper 2009 ACCP Annual Meeting, 2009
- Teacher of the Year, UNM College of Pharmacy, 2012

Recent Grants and Contracts
- PI, UNM RAC grant, “Optimization of hepatitis B vaccination in HIV-infected patients.”
- Co-PI, UNM COP, “Biomarkers of S. aureus infection in a high-risk population”

Select Publications

Johnnye Lewis, PhD
Director, Community Environmental Health Program
PhD, Pharmacology, University of Manitoba, Manitoba, Canada, 1989
MA, Psychology, University of Victoria, Victoria, BC Canada, 1976
BA, Psychology, Miami University, Ohio, 1970

My research uses community-engaged, iterative methodologies to assess relationships between exposures to metal mixtures and community health in tribal communities, striving to inform prevention and intervention strategies.

Lewis is principal investigator of the Navajo Birth Cohort Study, a community driven study on the relationship between uranium exposure, birth outcomes and child development on the Navajo Nation. She co directs the Center for Native American Environmental Health Equity, working with colleagues from Montana State University, the University of Washington and the Cheyenne River Sioux, Crow and Navajo. And she directs the UNM METALS Team, investigating transdisciplinary approaches to understanding unique exposure and response mechanisms in tribal communities that contribute to health disparities. The focus of their research is building partnerships among researchers, clinicians, policymakers and communities to not only understand adverse health outcomes, but to prevent intervention and prevention strategies to reduce disparities.

Honors and Awards
- Griff Salisbury Award for Environmental Protection, New Mexico Environmental Law Center, 2004
- Elected Member, Education Committee, Society of Toxicology, 2006-2009
- Invited member, NIH Blue Ribbon Panel to Advise on the Risk Assessment of the National Emerging Infectious Diseases Laboratory, Advisory Panel to the Director, NIH, 2008-2011
- Faculty Research Excellence Award for Population Research, UNM, 2011
- Appointment to Board of Directors, North American Board of Certified Energy Producers, 2011- present

Recent Grants and Contracts
- PI, RO1, NIH-NIEHS Navajo Uranium Assessment and Kidney Health Project
- PI, UO1, CDC/ATSDR A Prospective Birth Cohort Study of Uranium Exposure on the Navajo Nation
- Co-PI, R15, NIH-NIAAA, Interaction of Alcohol and Environmental Exposures in the Navajo Birth Cohort
- Co-PI, F50, NIEHS Center for Native Environmental Health Equity

Select Publications
Ke Jian “Jim” Liu, PhD
Professor of Pharmaceutical Sciences
Associate Dean for Research
Director, UNM BraIN Center
PhD, Radiation Biochemistry, University of Leeds, 1988
BS, Chemistry, Peking University, 1982

My research focuses on toxicity and carcinogenesis of metal ions, mechanism and neuroprotection of brain injury due to stroke, and oxidative stress and oxidative damage to DNA and proteins.

Co-PI, NIH/NCI R01CA182369, “Zinc-Chemoprevention of Arsenic-Induced Carcinogenesis”
PI, NIH/NIEMS R13ES024646, “The 8th Conference on Metal Toxicity and Carcinogenesis”

Select Publications

Debra MacKenzie, PhD
Research Assistant Professor
PhD, University of New Mexico, 1990
BS, Biology, New Mexico State University, 1983

My main research interests center around understanding mechanisms of immune regulation and suppression.

MacKenzie is an investigator on the Navajo Birth Cohort Study, working to elucidate the effects of mixed metal exposure, including arsenic and uranium, on birth outcomes and child development on the Navajo Nation. She is co-PI on a research project supported by the Center for Native American Environmental Health Equity, investigating the associations of metals exposure with immune dysregulation and development of biomarkers of autoimmunity within three tribal communities, the Navajo, the Crow in Montana and the Cheyenne River Sioux in South Dakota. She is also an experienced molecular biologist and has studied the actions of the androgen receptor in prostate cancer as a target for prostate carcinogenesis and therapy for advanced disease. She is a researcher on a recent patent describing novel approaches for chemotherapy of cancer.

Honors and Awards
Kappa Psi Pharmaceutical Fraternity, 2010-present
First Year Pharmacy Students Teacher of the Year Award, 2009, 2011, 2013

Recent Grants and Contracts
Co-PI, NIH/NIEMS Environmental Health Disparities Center, “UNM Center for Native American Environmental Health Equity”
Investigator, CDC/ATSDR, “A Prospective Birth Cohort Study Involving Uranium Exposures on the Navajo Nation”
Investigator, NIH/NIEMS, “Synergistic Immunosuppression by PAHs and Arsenic-VICTER Supplement”

Select Publications
Patricia L. Marshik, PharmD

Associate Professor of Pharmacy Practice and Administrative Sciences
PharmD, University of Minnesota, 1993
BS, Pharmacy, University of Minnesota, 1992

My research focuses on the use of medications in the treatment of pediatric pulmonary diseases and transition of care.

Marshik’s expertise is in pediatric pulmonary diseases. She has authored scientific manuscripts, review articles and book chapters on medications used for the treatment of these diseases. She has received funding from the NIH, pharmaceutical companies and organizations. She is an active reviewer for the Pharmacist’s Letter and Prescriber’s Letter for medications used for respiratory diseases. Marshik has been actively supported by the Maternal and Child Health Bureau’s Pediatric Pulmonary Center’s training grant since 1997. The goal of this grant is to train leaders who will improve health care delivery for children with chronic pulmonary conditions and their families.

Honors and Awards
New Mexico Department of Health Council on Asthma member and co-chair Education sub-committee, New Mexico Department of Health Council on Asthma, 2013 – present

Recent Grants and Contracts
Pharmacy faculty, MCHB-funded training grant, “Pediatric Pulmonary Centers”

Select Publications

R.N. Dalley, P.R. Byrson, J. Peart, J.D. Sumas, P.M. Young, D. Tsuini, eds. Virginia Commonwealth University, Richmond, Va. Vol 2 428-434.


Jason T. McConville, PhD

Associate Professor of Pharmaceutics
PhD, Pharmaceutics, University of Strathclyde, United Kingdom, 2002
BS, Applied Chemistry, University of Coventry, United Kingdom, 1994

My research focuses on overcoming hurdles associated with targeting the delivery of therapeutic agents. Research areas include lung cancer, lung infection, gastroretentive dosage forms and transbuccal/mucoadhesive drug administration.

McConville’s research interests include bioadhesive buccal drug delivery systems, pulmonary targeting for local and/or systemic therapy of anticancer drugs as well as anti-infective agents, and chronopharmaceutical drug delivery platforms for oral drug administration. McConville serves as an adjunct professor in the Department of Pharmaceutical Technology at the University of Bonn, Germany, where he teaches and jointly supervises in the graduate program. Additionally, he serves as the associate editor of special and themed editions for Drug Development and Industrial Pharmacy, and on the editorial advisory board of Inhalation.

Honors and Awards
Associate Editor of Special/Themed Issues for Drug Development and Industrial Pharmacy, 2015
Member of the Society for Teaching Excellence, University of Texas at Austin, 2011
Member, Controlled Release Society, 2002-present
Member, American Association of Pharmaceutical Scientists, 1997-present
Member, Aerosol Society, 1997-present

Recent Grants and Contracts
NIST/USP Convention - RPF “Performance verification test for inhalation aerosols”

NIST, LMIC, LLC - RPF “Investigating the properties of MicroFibular Cellulose (MFC)”

NIST/Pharmaceutical Systems - RPF “Implantable drug delivery device”

CoP, DDG-Army RAID Congressional Special Interest: Microencapsulation and Drug Delivery Research.

PL Cyrotech, LLC - RPF “Pre-Formulation Development with API 31510”

Select Publications


Mercier is board certified as a pharmacotherapy specialist with added qualifications in Infectious Disease. She has been practicing as a Pharmacist Clinician at Truman Health Services for the last 15 years and is part of the Young Adult Clinic, an interprofessional clinic serving young adults living with HIV. Mercier established the Infectious Diseases Pharmacotherapy residency at UNM Hospital. She has published more than 50 peer-reviewed articles, original research and book chapters in prestigious journals, and is currently a reviewer for five distinguished journals. She has presented many papers at national and international meetings and has lectured on various topics in infectious diseases.

Honors and Awards

Regents’ Professor, University of New Mexico, 2015
Fellow, American College of Clinical Pharmacy (FCCP), 2014
University of New Mexico - College of Pharmacy, Teacher of the Year. PS3, 2010-2014

Recent Grants and Contracts

NIH, HABBS VA Palo-Alto Contract, Healthcare/Associate Infection & Influenza Surveillance System, University of New Mexico, College of Pharmacy (2008-2014)
NIH, Tricore Reference Laboratories, Pharmacy Residency Affiliation Agreement, University of New Mexico, College of Pharmacy (2014-2016)
Co-I, UNM College of Pharmacy, Biomarkers of Staphylococcus aureus infection in a high risk population (2013-2015)
Ph.D. Cubin Pharmaceuticals. MASS-ASQO DCAT Protocols. University of New Mexico, College of Pharmacy (2012-2013)
Ph.D. Hartford Hospital, Gram-negative organisms Collection Contract (2013-2014)
Ph.D. Hartford Hospital, Staphylococcos aureas Collection Contract (2012-2013)

Select Publications


Miller is a statistician and modeler. He has worked at the Community Environmental Health Program since 2011, working on the DiNEH Project, the Navajo Birth Cohort Study and the study of environmental contamination on Chayenne River Sioux tribal lands. In the graduate program at Iowa State University, and in positions from then until 2011, he worked on a variety of projects, much of which involved modeling motion data or ecological data.

Recent Grants and Contracts

Statistician, NIEHS funded research grant, “A Prospective Birth Cohort Study Involving Uranium Exposures on the Navajo Nation” (Navajo Birth Cohort Study, or NBCS)
Statistician, NIEHS funded R15 research grant, “Interactive Effect of Environmental Exposures and Alcohol in the Navajo Birth Cohort”
Statistician, NIEHS funded revision of R01 research grant, “Impact of zinc status on susceptibility to arsenic-induced toxicity”
Statistician, NIEHS funded R01 and R25 research grants, “Navajo Uranium Assessment and Kidney Health Project” (the DiNEH Project)
Statistician, NIEHS funded R25 research grant, “Environmental Justice on Chayenne River

Select Publications

Pavan Muttil, PhD
Assistant Professor of Pharmaceutical Sciences
PhD, Pharmaceutics, Central Drug Research Institute, India, 2006
MS, Biria Institute of Technology and Science, India, 2001

My expertise is in the area of designing and developing novel drug delivery systems as dry powders for vaccines and drugs against various infectious diseases and cancers. I also formulate nano- and microparticles as drug delivery systems. These novel dry powder formulations are further evaluated in animal models by needle-free delivery routes, such as oral and pulmonary routes.

The Muttil laboratory focuses on the formulation and evaluation of dry powder vaccines and drugs for needle-free delivery. The dry powder formulations improve the stability of biologics such as live bacterial vaccines, peptides and proteins, virus-like particles etc. Current projects being pursued in the laboratory include targeted pulmonary drug delivery for lung cancer in a novel orthotopic lung cancer mouse tumor model for longitudinal SPECT/CT imaging; pulmonary immunization against tuberculosis; thermostable needle-free vaccination strategies against various bioterrorism agents; shellHype stabilization of antibiotic containing protecoloids (nanoparticles) for oral and pulmonary delivery; pulmonary delivery of immunotherapeutic agents against cancers and infectious diseases; and dry powder formulations of Virus Like Particles as a mucosal vaccination strategy.

Honors and Awards
UNM College of Pharmacy Graduate Student Faculty Appreciation Award, 2015
Bill & Melinda Gates Grand Challenges Exploration grant, 2012
Post-doctoral award for outstanding contributions in Mentoring, Service, and Leadership, University of North Carolina at Chapel Hill, 2009
New Millennium Indian Technology Leadership Initiative (NMITLI) Scholarship, Council of Scientific & Industrial Research (CSIR), India, 2002-2006

Recent Grants and Contracts
NIH, American Foundation for Pharmaceutical Education (2015-current)
Co-PI, NIBIB/NIAID U19 Discovery and Refinement of Preventive STI Vaccine Targeting Critical Epitopes of HIV and CT (2014-current)
PI, Bill and Melinda Gates Grand Challenges Exploration (2012-2014)
Co-PI, CRBM/VAHD T1 Defense Threat Reduction Agency (DTRA) (2012-current)

Select Publications

James J. Nawarskas, PharmD, PhC, BCPS
Associate Professor
PharmD, State University of New York at Buffalo, 1995
BS, Pharmacy, University of Toledo, 1993

My research and interests involve antiplatelet drugs and the scholarship of teaching.

Nawarskas is a pharmacist clinician at the UNM Healthy Heart Clinic and provides clinical pharmacy services at UNM Hospital in the area of cardiology. He maintains an active scholarship program in cardiovascular pharmacotherapy with an emphasis on platelet-active drugs and cardiovascular risk reduction. He is a medical education scholar and is actively engaged in the scholarship of teaching at the College of Pharmacy.

Honors and Awards
University of New Mexico College of Pharmacy Regents’ Lecturer, 2008
General Clinical Research Center Glenn T. Pease Clinical Investigator Award, 2005
Fellow of the United States Pharmacopeia, 1997

Recent Grants and Contracts
NIH, University of New Mexico, “Relationship of HbA1c and platelet aggregation response to aspirin in patients with type 2 DM”
Co-PI, Lilly USA, “Treatment with ADP Receptor Inhibitors: Longitudinal Assessment of Treatment Patterns and Events After Acute Coronary Syndrome (TRANSLATE-ACS)”
Co-PI, University of New Mexico, “Relationship of HbA1c and platelet aggregation response to aspirin in patients with type 2 DM”

Select Publications
Norenberg is a board-certified nuclear pharmacist and a fellow in the American Society of Health-System Pharmacists and the American Pharmacists Association. He serves on the boards of directors of the Society of Nuclear Medicine and Molecular Imaging, the American Board of Science in Nuclear Medicine, and as a delegate to the United States Pharmacopeia Convention. Since 2002, he has also served as the Chairman and Executive Director of the National Association of Nuclear Pharmacists, a trade association representing 350 commercial nuclear pharmacies in the United States. In this capacity, Norenberg participates in numerous national and international trade associations and policy-making efforts to ensure patients have access to a safe and reliable supply of drugs used in nuclear medicine and radiology.

Recent Grants and Contracts
Milligan, E (Co-PI), Norenberg JP (Co-PI), Chronic neuropathic pain, glial-immune responses and fetal alcohol exposure. NIH R21

Select Publications

Honors and Awards
APhA-APPM William H. Briner Distinguished Achievement Award in Nuclear Pharmacy Practice Fellow, American Pharmacists Association (APhA) Delegate, United States Pharmacopeia Convention (USP)

Rong Pan, PhD
Research Assistant Professor
PhD, Neurobiology, Chinese Academy of Sciences, Beijing, China, 2010
BS, Animal Science, China Agricultural University, Beijing, China, 2004

My research focuses on the effects of zinc on stroke-induced brain damage, and biomarkers of blood brain barrier damage.

Pan is an expert in neuroscience, focusing on the role of zinc in stroke-induced brain damage. By using both in vivo and in vitro ischemic stroke models, she discovered that the intracellular accumulation of zinc is one of the major factors causing brain damage, and that the elevation of zinc dramatically decreases brain damage caused by ischemic stroke. In addition, Pan has observed that the blood oculinulin level increases with increased blood brain barrier damage, indicating that elevated blood oculinulin directly reflects blood brain barrier damage. Since end-stage blood brain barrier damage results in intracerebral hemorrhage, blood oculinulin has the potential to predict the risk of intracerebral hemorrhage after acute stroke thrombolytic treatment.

Honors and Awards

Select Publications
Larry J. Pineda, PharmD, PhC
Visiting Assistant Professor
Pharmacy Practice and Administrative Sciences
PharmD, Texas Tech University, 2012
BS, Texas Tech University, 2003

My research focuses on exploring novel pharmacy practice models to help improve current HIV screening, care continuum and management outcomes.

Pineda is a pharmacist clinician in his first year of academic pharmacy. He is trained in infectious diseases with a strong emphasis in HIV pharmacotherapy. His main role as a clinical educator is the implementation of transitions of care service, which provides pharmaceutical care to HIV-positive patients who are transitioning between health care settings. The goal of this service is to reduce medication errors, hospital readmissions, and facilitate linkage/retention/reengagement in medical care. His manuscript on pharmacists’ HIV knowledge has been accepted for publication later this year in the Journal of American Pharmacists Association. He has also co-authored a book chapter on pharmacodynamics of anti-infective agents, which is currently under review.

Honors and Awards
2nd Place, Best Poster by Post Doc, Fellow or Resident, 9th Annual UNM COP Research & Scholarship Day Exhibition, 2014
Member, Society of Infectious Diseases Pharmacists, 2013-present
Member, American Academy of HIV Medicine, 2015
Rho Chi Pharmaceutical Honor Society, 2012

Dennis W. Raisch, PhD, MS, RPh
Professor of Pharmacy Practice and Administrative Sciences
Chair of Graduate Program in Pharmacoconomics, Epidemiology, Pharmacoeconomic Policy and Outcomes Research
PhD, Pharmaceutical Sciences, University of Arizona, 1988
MS, Pharmaceutical Sciences, University of Arizona, 1986
BS, Pharmacy, University of Arizona, 1988

My areas of specialty are pharmacovigilance, pharmacoconomics and patient-centered outcomes research. My current research endeavors include assessing outcomes of health care therapies using national and local databases and performing multi-criteria decision analysis and preference studies involved with health care.

Raisch is an expert in clinical trials, drug safety and pharmacoconomics. He has more than 140 peer-reviewed publications. He has taught at UNM for 25 years and received more than $1 million in external research funding. In collaboration with the Southern Network on Adverse Reactions project, a research project funded by the National Cancer Institute and the University of South Carolina, he is assessing rare, serious adverse drug reactions.

Honors and Awards
International Society for Pharmacoconomics and Outcomes Research Distinguished Service Award, 2005, 2012
American Pharmacists Association Clinical Research Paper Award, 2011

Recent Grants and Contracts
Co-Investigator: Research for Adverse Drug-Events and Reports – Nephrogenic Systemic Fibrosis Associated with Gadolinium. National Cancer Institute # 2 R01 CA102713-03A2. (2009-10)
Co-Investigator: Southern Oncology Network on Adverse Reactions Tyrosine Kinase Inhibitors, National Cancer Institute. 1 R01 CA165609-01A1. (2012-present)

Select Publications
Gretchen M. Ray, PharmD, PhC, BCACP
Associate Professor of Pharmacy Practice
PharmD, University of New Mexico, 2006

Ray practices in the UNM Family Medicine clinics, specializing in diabetes management and cardiovascular disease. Her interests include the implementation of pharmacist services within the ambulatory care setting, especially among patients with diabetes. She is the director of the FGY2 pharmacy residency in ambulatory care and is involved in ambulatory care-based research with her residents.

Select Publications


Melissa H. Roberts, MS, PhD
Temporary Part-Time Faculty
PhD, Pharmacoeconomics, University of New Mexico, 2013
MS, Health Systems, Georgia Institute of Technology, 1999
BS, Economics, University of Pennsylvania, 1981

My research focuses on health outcomes for chronic disease, and in particular, health outcomes related to pharmaceutical treatment of chronic disease.

Roberts’ academic training is in economics and the optimization of systems. She has been involved with data systems for more than two decades and with health care outcomes research for the last 15 years. Her main research interest is in comparative effectiveness research methods. While she has conducted studies in many disease areas, her research in the past decade has primarily focused on disease burden and comparative effectiveness studies for treatment of chronic obstructive pulmonary disease.

Honors and Awards
International Society for Pharmacoeconomics and Outcomes Research, Medication Adherence and Persistence Review Group, 2012-present
Member, ATS, 2010-present
Member, International Society for Pharmacoepidemiology, 2009-present
ESPOR, Risk and Benefits Special Interest Group, 2010-2012
Recent Grants and Contracts
PL Pfister funded ASPIRE research grant, “Rheumatoid arthritis and comorbid chronic obstructive or interstitial pulmonary diseases: a retrospective analysis of prevalence and outcomes in a Southwestern managed care population” (2015)

Co-PI, Endo Pharmaceuticals, Investigator initiated study, “COPD and comorbid pain” (2011-2013)

Select Publications
Sabrina Samudio-Ruiz, PhD
Research Assistant Professor
PhD, Biomedical Sciences, University of New Mexico, 2009
BA, Molecular Cellular and Developmental Biology, University of Colorado Boulder, 1999
My research focuses on alterations associated ovarian cancer progression. I am specifically interested in intracellular signaling alterations, gene expression changes and epigenetic modifications associated with the development of platinum drug resistance in ovarian cancer.

Select Publications

Recent Grants and Contracts
PI, NCI funded K01 “EGF receptor, DNA methylation and platinum resistance in ovarian cancer” PI, UNM HSC RAC award (internal funding), “Identification of drivers associated with development of platinum resistance in ovarian cancer” Postdoctoral fellow, NIGMS funded K12 trainee, UNM ASERT/TRACIA program

Honors and Awards

Susan Smolinske, PharmD, ABAT
Professor of Pharmacy Practice and Administrative Sciences Director, New Mexico Poison and Drug Information Center PharmD, Idaho State University, 1993
BS, Pharmacy, University of Florida, Gainesville, 1977
My research focuses on clinical toxicology, with a special interest in designer drugs of abuse and plant/herbal toxicity.

Select Publications

Financial Stabilization Grant H485321668 (Project Director, 100%, Health Resources and Services Administration, $521,822) Surveillance of the RADARS System by Poison Control (El Centro Coordinator, 100%, Denver Health and Hospitals, $53,573 per year) Michigan Department of Community Health (Project Director, 100%, federal Medicaid match, $1,100,000/year) Financial Stabilization Grant H485321664 (Project Director, 100%, Health Resources and Services Administration, $538,862/year)

Recent Grants and Contracts
Surveillance of the RADARS System by Poison Control, Denver Health and Hospitals Real-Time Surveillance of Events Associated with Neoprecipitation, Cough and Cold Preparations (Principal Investigator, 100%, Consumer Healthcare Products Association, $250/case) Michigan Department of Community Health (Principal Investigator, 100%, SCRIIIF federal Medicaid match, $1,560,000) In Market Safety Surveillance of Laundry Detergent using Poison Control Center Data (Principal Investigator, 50%, Cincinnati Poison Center, $50/case)

Smolinske is an expert in clinical toxicology. She has authored more than 100 scientific manuscripts and is a senior editor of the ToxED clinical online database. Prior to coming to New Mexico, she was editor of the Poisonindex database for 16 years and director of the Michigan Regional Poison Control Center for 20 years. She is a Board of Trustee member of the American Academy of Clinical Toxicology and serves on numerous committees and task forces for the American Association of Poison Control Centers, including as chair of the Public Health Committee.
Research in my laboratory is directed toward precision medicine-based considerations for cancer prevention and treatment. The action of environmental endocrine disruptors in the pathogenesis of neoplasia is also investigated.

Recent Grants and Contracts
- PI, NCI-funded R33 grant, “Teocaperyquine as a Novel Chemopreventive Agent for Prostate Cancer”.
- PI, UNM Environmental Sciences Signature Program Pilot Project Award, “Identification of Environmental Chemicals Acting Concurrently on Multiple Androgenic Indolexocrine Disruptor Pathways”.
- Co-PI, UNM College of Pharmacy Request for Proposals, “Exosomal RNA profiles as pharmacogenomic biomarkers of radiotherapeutic-outcome”.

Select Publications

Honors and Awards
- UNM College of Pharmacy Hadley Award, 2015
- UNM STC Innovation Fellow, 2013
- Who’s Who in Technology, NM Business Weekly Award, 2010

Recent Grants and Contracts
- PI, NIAID, Pyrazinamide breath test for TB
- PI, NIAID, Nanostructured in vitro TB latency model
- PI, NIAID, Breath test for Pseudomonas aeruginosa in CF

Select Publications

Thompson’s scientific expertise is in cellular and molecular carcinogenesis. His publications encompass research on endocrine-sensitive cancers, including breast and prostate cancer. NIH has funded research directed at investigating novel interventions for prostate cancer prevention. In addition, NIH has supported efforts to screen small molecules as novel therapies for advanced hormone-refractory prostate cancer targeting cellular differentiation and modulation of autophagy. The actions of the androgen receptor in prostate cancer is investigated as a target for both prostate carcinogenesis and therapy for advanced disease. To assist in research efforts to examine the activity of the androgen receptor, the Thompson laboratory developed the Multifunctional Androgen Receptor Screening (MARS) assay, which can rapidly detect both androgen receptor agonists and antagonists. Cancer pharmacogenomics is also investigated. Thompson has four issued patents for methods to treat prostate cancer and melanoma.

Honors and Awards
- DOD Prostate Cancer Research Program Post-doctoral Training Award, 1999-2001
- Toxicology and Applied Pharmacology Editorial Board, 2010-present
- Member, American Association of Colleges of Pharmacy
- Member, American Association for Cancer Research
- Member, Society of Toxicology

Research focuses on reactive intermediates and metabolic transformations. I use stable isotopes to both study and modify bacterial metabolic transformation, providing new classes of diagnostics and anti-tuberculosis drugs. I study reactive intermediates using EPR approaches.

Graham Timmins, PhD
Associate Professor of Medicinal Chemistry
PhD, Biochemistry, University of Leeds, 1990
BSc, Biochemistry University of Leeds, 1986
A. Mary Vilay, PharmD
Assistant Professor of Pharmacy Practice and Administrative Sciences
PharmD, University of Toronto, 2007
BS, Pharmacy, University of Alberta, 2000

I am interested in studying drug pharmacokinetics and pharmacodynamics in patients with chronic kidney disease and acute kidney injury in order to optimize drug therapies as well as kidney dialysis delivery.

Select Publications

Honor and Awards
UNM College of Pharmacy Teacher Appreciation Award, 2015
American College of Clinical Pharmacy, Nephrology FRN Chair, 2015-2016
UNM College of Pharmacy Faculty Preceptor of the Year, 2013

Recent Grants and Contracts
Co-I, SIUE RAC, “Relationship between health literacy and chronic kidney disease outcomes”
PI, AACP NIA, “Trimethoprim/sulfamethoxazole loss in modeled continuous renal replacement therapy”
PI, UNM HSC RAC, “Trimethoprim and sulfamethoxazole transmembrane clearance during CRRT”

Mary K. Walker, PhD
Professor of Pharmaceutical Sciences
PhD, Environmental Toxicology, University of Wisconsin-Madison, 1991
BS, Wildlife Ecology, University of Wisconsin-Madison, 1984
BS, Agricultural Journalism, University of Wisconsin-Madison, 1984

My research interests focus on the vascular toxicity of environmental pollutants that activate the aryl hydrocarbon receptor, such as cigarette smoke and dioxins, and the mechanisms by which dietary omega-3 polysaturated fatty acids can protect blood vessels from toxicant-induced damage.

Select Publications
L.N. Agber, K.M. Eidai, M.K. Walker. Endothelial c-lectrin and aryl hydrocarbon receptor
**John M. Weaver, PhD**

Research Assistant Professor  
PhD, Chemistry, University of Maryland, Baltimore County, 2003  
BS, Chemistry, Washington College, 1997

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My research focuses on the role of brain oxygenation, free radicals and oxidative stress in brain injury related to drug abuse, stroke and neurological diseases.

**Recent Grants and Contracts**

Co-PI, NIH/NIADA-funded R21 research grant, “Methamphetamine-Induced Alterations in Brain pO2”  
Co-I, NIH/NCRR-funded P30 center grant, “Integrative Program in CNS Pathophysiology Research”

**Select Publications**

J. Weaver, Y. Yang, R. Porvia, T. Weatherwax, G.M. Rosen, K.J. Liu.  
In vivo evidence of methamphetamine induced attenuation of brain tissue oxygenation as measured by EPR. Toxicology and Applied Pharmacology, 275: 73-78 (2014).  
J. Weaver, E.Y. Jadak, Y. Yang, J. Thompson, G.A. Rosenberg, K.J. Liu.  
Tissue oxygen is reduced in white matter of spontaneously hypertensive stroke prone rat: a longitudinal study with electron paramagnetic resonance. JCBFM, 34, 890489 (2014).  
C. Liu, J. Weaver, K.J. Liu.  

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**Honors and Awards**

UNM BRHNI Neuroscience Day 2014 Communicating Research Award, 2014  
Member, Society for Neurosciences, 2007-2008  
Member, Federation of American Societies for Experimental Biology, 2006-2008  
Member, American Society for Biochemistry and Molecular Biology, 2004-2005  
UMBC Meyerhoff Graduate Program Biomedical Fellowship, 1997-2003

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**Mikiko Yamada, PharmD**

Clinical Assistant Professor  
PharmD, Roseman University Health Sciences (formerly known as University of Southern Nevada), 2009  
MS, Clinical Research, University of Kansas, 2013  
MPS, Nagasaki University Graduate School of Pharmaceutical Sciences, 2000  
BS, Nagasaki University, 1998

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My research focuses on opioid overdose, prevention of opioid overdose deaths among patients with chronic opioid treatment, bone health among patients with epilepsy, catamarnel epilepsy treatment, drug-herb interactions and simulation in pharmacy education.

**Recent Grants and Contracts**

Treatment of Catamarnel Epilepsy with Kampo Preliminary Study (award no.188345), the Epilepsy Foundation, November 2010, funded amount $50,000/year, completed in 2011

**Select Publications**


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**Honors and Awards**

Wolgreens Diversity Scholarship, 2009  
Sagas Prefectural Scholarship for privately funded post-graduate students studying abroad, 2006-2007
Yirong Yang, PhD
Research Assistant Professor, Dept. of Pharmaceutical Sciences
MRI Scientist, Braid Imaging Center
PhD, Bioengineering, University of Illinois at Chicago, 2007
MS, Electrical Engineering, Zhejiang University, China, 2003
BS, Electrical Engineering, Zhejiang University, China, 2000

My interest is in magnetic resonance imaging, biomedical image analysis and processing with applications to biological and pharmacological research.

Recent Grants and Contracts
KP, 2014/09/09-2016/08/31 SR01/NS082233, National Institute of Neurological Disorders and Stroke, Robbik, Tomasz (PI). In Vivo Inhibition of Specific Microvasculature to Support Post-stroke Remodeling. 2014/03/15-2016/02/29 ST50GM104000, National Institute of General Medical Sciences Lewis, Kin Ji, On Integrative Program in CNS Pathophysiology Research. 2013/07/24-2015/06/30, 1GRNT17062032, American Heart Association Yang Yi (PI). Neuronal Remodeling after Ischemic Stroke

Select Publications

Xixi Zhou, PhD
Research Assistant Professor
PhD, Biophysics, Institute of Biophysics, Chinese Academy of Sciences, 2009
BS, Chemistry, Beijing University, 2003

My interests are in molecular mechanism of arsenite-induced toxicity and carcinogenesis: mass spectrometry analysis for metal interaction with proteins; and the roles of oxidative/nitrosative stress and protein oxidation/nitrosation in cancer development.

Select Publications
RESEARCH BENEFITS EVERYONE

JOIN us in innovation and discovery.
GIVE to the UNM College of Pharmacy.

The College of Pharmacy’s research programs directly impact critical health problems here in New Mexico and beyond. Your contribution will help our innovators meet new challenges and develop solutions to help all people live longer, healthier and more fulfilling lives. The College of Pharmacy in partnership with the UNM Foundation can accommodate almost any giving interest, from supporting cutting-edge invention and therapeutics to developing the next generation of inquisitive minds.

Please contact Michele Tigelaar for more information michele.tigelaar@unmfund.org or 505.272.3657