FROM THE DESK OF THE

Vice President for Research

October 2024

Lobos, fall is definitely here!

We have cooler mornings, leaves are changing colors, football is here and basketball is on the way! In the research world, many of us are working on writing up all the data and findings that were made over the summer months to publish through peer-reviewed publications, books, presentations, and other mechanisms for sharing our discoveries.

As a state institution that receives most of its research funding from federal and state entities, dissemination and sharing of new knowledge is an important part of our mission, and UNM researchers routinely publish more than 2,500 articles and more than 80 books each year.

I work with a couple of teams (one affiliated with the Grand Challenges teams) that have regular writing schedules where we show up and write, but also check in with each other on various writing commitments and projects. It's a way to stay accountable, seek advice, and continue to make progress on this important part of our jobs as university researchers. As the sunlight hours become fewer each day, it might be a good time to schedule some writing time and finally finish that book or article you've been working on for a while…the world needs to hear what you have to say!

Ellen Fisher, Ph.D.
Vice President for Research
Professor of Chemistry

October Safety Spotlight

Having worked with high vacuum systems that employ a range of vacuum pumps (from quiet to noisy) for much of my research career, I have been exposed to high noise environments that may or may not have damaged my hearing to some extent. Once we diminish or lose our hearing, it never fully recovers.

Many elements of a modern research environment can generate high levels of noise that can negatively impact researchers in those environments. Luckily, there are many ways to prevent or mitigate noise exposure. Eliminating exposure by removing yourself or eliminating excessive noise is an obvious answer. When that is not possible, consider engineering controls such as sound barriers, enclosures and other noise-dampening systems.

PAIS, UNM's state of the art research building. has what are called "chases" – a space that is used to enclose pipes, wiring, or other utilities – that are used to house loud mechanical pumps, thereby removing the effectively constant noise from the lab environment. As always, training and the use of appropriate personal protective equipment (PPE) help round out methods to keep your hearing safe. Lobos are known for their superior hearing – let's keep it that way!

Research Events

R&D Week

We're almost a month away from our 3rd annual Research & Discovery Week, scheduled for Nov. 8-15. We're excited to announce our featured keynote speakers:

- Kelly Cross, Ph.D. | Cross is an assistant professor in the Coulter Dept. of Biomedical Engineering at Georgia Tech and a lead member of a national task force to address barriers to inclusion in undergraduate engineering education.
- Ivan Oransky, MD | Oransky is editor-in-chief of The Transmitter, distinguished journalist in Residence at NYU's Carter Journalism Institute, and co-founder of Retraction Watch. He is a recipient of the John P. McGovern Award for Biomedical Communication.
- Herman Pontzer, Ph.D. | Pontzer is professor of Evolutionary Anthropology & Global Health at Duke, a contributor to Scientific American, and author of Burn: New Research Blows the Lid Off How We Really Burn Calories, Lose Weight, and Stay Healthy.
- Sonia Torres Rodríguez, M.S. | Torres Rodríguez is an economist and research associate in the Office of Race & Equity Research at the Urban Institute. Her community-engaged work addresses racial equity in housing.

Visit the R&D website for the latest events!

UNM Art Museum BioSymposium

The UNM Art Museum is planning a symposium during Research & Discovery Week showcasing the new exhibition *Hindsight Insight 5.0.*

The hope is to bring together artists, researchers, and those on the forefront of creative exploration at the University of New Mexico. This symposium aims to create space for current UNM students, faculty, and staff to present their research and to discover the vast worlds of biology, art, science, technology, and their respective intersections.

The call for submissions is now open.

Educator Symposium on Undergrad Research Engagement

November is shaping up to be a busy month! URAD will host the UNM Educator Symposium on Undergrad Research during R&D week, on Nov. 13, from 9 a.m. to 3:30 p.m. I encourage all our researchers to consider participating if interested and engaged with undergraduate research opportunities.

This symposium is designed for UNM faculty, staff, and graduate teaching assistants. The call for proposals is now open; if you have any questions, please contact URAD Director Tim Schroeder at timschroeder@unm.edu.

ARID Workshop

One of our newest research centers, Accelerating Resilience Innovations in Drylands (ARID) Institute, is hosting a Managers Workshop on **Friday, Nov. 1, from 9 a.m. – 1 p.m.**

ARID researchers aim to link current research happening at UNM with management and community priorities, potential funding opportunities, and future research goals. U.S. Bureau of Reclamation Upper Colorado Basin Assistant Regional Director Katrina Grantz will give a keynote address.

If interested, register by Friday, Oct. 18. If there are any questions, contact Debbie Lee at debbieylee@unm.edu.

Research Celebrations

Last month, we celebrated National Postdoc Appreciation Week. UNM has 127 postdocs who make major contributions to the research enterprise. Below are just two of our outstanding postdocs!

UNM Postdoctoral Fellow: Rosalyn Devonport

Most days for Rosalyn Devonport are spent in her office working advanced and abstract math problems, throw in some computer programming, and if she's having a really stimulating day, coffee with a friend is one of her first stopping points – you'd be surprised at how much advanced math is done over a freshly brewed cup of coffee. While Devonport's day-to-day seems routine, the 30-year-old is a University of New Mexico postdoctoral fellow working to discover what it takes for a spacecraft to obtain "orbital homeostasis."

Read more here.

UNM Postdoctoral Fellow: Anitha Vijayakumar

Anitha Vijayakumar spent more than 10 years studying biochemistry, specifically the Lipid Metabolism. That background eventually led her to where she is right now as a University of New Mexico postdoctoral fellow where her research focus is to discover a way to manipulate certain RNA-binding proteins that could one day lead to making cancer treatments more effective.

Read more here.

Geography & Environmental Studies grants first Ph.D.

UNM's Department of Geography and Environmental Studies granted its first doctoral degree at the end of the Summer 2024 semester. Daniel Beene received his Ph.D. after completing his dissertation titled "Critical Geospatial Data Science: Principles for Curating, Analyzing, and Sharing Geospatial Data."

The research centered on the broad field of geospatial data science and its recent push toward the use of massive geospatial datasets that come from sources like satellites and the Internet of Things. Congratulations, Dr. Beene!

Research News

PERC

The 2024 application window for the Program for Enhancing Research Capacity (PERC) is now open. PERC supports acquisition of shared instrumentation or enhancement of shared facilities that enable major endeavors to advance discovery, creativity, and innovation across campus.

Key PERC dates

- October 25, 3024: Proposal due date
- December 11, 2024: Notice of award
- January 6, 2025: Proposals awarded

Diabetes outcomes improvements

Congrats to some of our research colleagues on North campus for a new published study showing ECHO was associated with improved diabetes outcomes in rural, under-resourced communities with limited access to specialists.

Although diabetes treatments are more effective than ever, many patients in underserved communities simply don't have access. Project ECHO is changing that. Patients of ECHO-trained providers had A1c levels that were an average of 1.2 percent lower than non-ECHO providers.

Congratulations to researcher Dr. Matthew Bouchonville, Dr. Larissa Myaskovsky, Yuridia Leyva, Dr. Erik Erhardt, Dr. Mark Unruh, and Dr. Sanjeev Arora.

Research Recipe

Whether it was a junior high or high school lesson, the changing of leaves during the fall is a colorful mixture of some interesting science (okay, yes, it's a lot of chemistry). Essentially, as days get shorter and temperatures drop, trees end up with less direct sunlight. Ultimately, this causes the chlorophyll

(a compound in green plants that gives them their color and helps them absorb energy from the sun as they undergo photosynthesis) to break down, revealing other pigments in the leaves.

These include carotenoids (yellow and orange pigments) and anthocyanins (red and purple pigments). Thus, if you've ever wondered why some trees turn red and others yellow, it has to do with the particular mix of these pigments in the tree species.

Interestingly, the intensity of fall colors is also affected by environmental factors like sunlight and temperature. Generally speaking, dry, sunny, and cool weather produces a higher variety of colors whereas a wet spring and a dry, sunny late summer can produce more intense red and purples.

So, as you plan your family photos this fall where there's lots of tree variety, take note!