



IN FOCUS

October 2023, Vol. 13, No. 10



**THE PAST COMES BACK
TO HAUNT YOU**

**Alumna reveals Milwaukee's
past - and its ghosts - with her
haunted history tours**

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PUBLISHED THE FIRST TUESDAY OF EACH MONTH BY THE
COLLEGE OF LETTERS AND SCIENCE AT
THE UNIVERSITY OF WISCONSIN-MILWAUKEE.

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UWM welcomes a new Shaw Scientist with expertise on Parkinson's

What you need to know:

- An-Phu Tran Nguyen was named a 2023 Shaw Scientist.
- Tran Nguyen is a new assistant professor in the UWM Biological Sciences Department. His research program is funded by a grant from the Shaw Fund, meant to support an early-career scientist.
- Tran Nguyen's research focuses on the genetic components of Parkinson's Disease.

With support from the Greater Milwaukee Foundation, An-Phu Tran Nguyen has begun his appointment at UW-Milwaukee as both an assistant professor of biological sciences and as a Shaw Scientist.

Shaw Scientist awards were developed by the Greater Milwaukee Foundation, working with a panel of leading researchers and scientists, to fulfill the wish of Dorothy Shaw.

Shaw, a philanthropist who lost two sisters to cancer, left the bulk of her estate, a \$4.2 million gift, to the Foundation with this challenge: Find a way to support emerging scientists at the University of Wisconsin-Madison and the University of Wisconsin-Milwaukee engaged in research in the fields of biochemistry, biological science or cancer research. Each year, scientists from UWM or UW-Madison who are in the early stages of their career can be nominated for this award, which provides \$200,000 in unrestricted funding.

Tran Nguyen now joins the ranks of those awardees. Tran Nguyen said he is honored to be chosen as a Shaw Scientist and excited to make his own mark at UWM. His nascent research program will be supported by the Greater Milwaukee Foundation's Shaw Fund.

"When I started to look up the information about the Greater Milwaukee Foundation, I saw a lot of fantastic scientists who have been awarded over the years with the Shaw Scientist Awards, and I am in admiration of their work. I feel really honored to be funded by the same institution," Tran Nguyen said. "I cannot say thanks enough for their support."

Here's a closer look at one of the newest Shaw Scientists.

A world traveler

Tran Nguyen is a native of Vietnam, and he's keenly aware of the aftereffects of the Vietnam war.

"I'm a lucky generation. We grew up without a war to worry about," he reflected. "There was a long isolation of the country for nearly two decades."

But in the last three decades, the country has been "opening up and quickly growing," allowing Tran Nguyen and his peers to understand just what they were missing.

"There was a lot to catch up on. We had the idea that we were so behind in technology and education," he said. "Everyone wanted to try to get out and see the world."

And see the world he did. Tran Nguyen threw himself into his education, starting with learning French. That made it easy for him to study at Le Mans Université in France before transferring to the Université d'Angers, where he earned both his bachelor's and master's degrees and specialized in cellular and molecular signaling in health and diseases. He continued his studies with a PhD that he earned at the University of Tuebingen in Germany, funded by the [Marie Curie Actions](#) program, and then a post-doc position at the [Van Andel Institute](#) in Michigan, where he was also promoted to a research scientist position.

Now, he's settling into his new role as an assistant professor at UW-Milwaukee.

Parkinson's and genetics

Tran Nguyen's research focuses on Parkinson's Disease (PD) – specifically, its genetic components.

PD is a neurodegenerative disorder. Public figures like Michael J. Fox, Muhammed Ali, Pope John Paul II, and others were diagnosed with Parkinson's. Around 90,000 Americans are diagnosed with PD each year, according to the Parkinson's Foundation. Its symptoms include unintended or uncontrollable movements, muscle stiffness, and difficulty with balance and coordination.

"The main cause of those is a lack of dopamine that is released by dopaminergic neurons in the substantia nigra, a structure located in the basal ganglia. It's a small part of the brain, but it's important. Dopamine is a neurotransmitter, a kind of a master regulator of mood and movement," Tran Nguyen explained. "In PD patients, the dopaminergic neurons are dying, causing a dopamine deficiency."

But while scientists understand that a lack of dopamine is the culprit of the symptoms, "we still don't know what is causing the loss of nigral dopaminergic neurons and not others in PD," he said.

As more and more scientists have begun studying PD and other neurodegenerative diseases, they have found some genetic links that may point to causes of PD, and potential therapeutic targets. Tran Nguyen has been studying a gene known as LRRK2.



An-Phu Tran Nguyen

"The gene is encoding for a protein with the same name: Leucine-rich repeat kinase 2. Kinase is an enzymatic function. There are a lot of reasons why we're interested in studying LRRK2. The mutations in this gene (shown up) most frequently in the familial PD cases," he said.

The familial mutations of LRRK2 tend to increase its

kinase activity, which could lead to dopaminergic cell loss in animals as shown in Tran Nguyen's paper published in the [Proceedings of the National Academy of Sciences journal](#).

"The idea is if the mutation causes very abnormal, elevated kinase activity, we could think of a therapeutic approach trying to normalize this. It may help to slow down the progression of the disease. That's the starting point," Tran Nguyen said. "There are a lot of pharmaceutical companies right now that are working on developing LRRK2 kinase inhibitors. Some of them are being tested in clinical trials."

There is still much to study in the field, and Tran Nguyen hopes he can continue that work at UWM.

Settling into UWM

Tran Nguyen has high hopes for the new school year. He wants to get to know Milwaukee. He wants to fill the rows and rows of empty shelves in his new office. And he wants to train the next generation of neuroscientists by establishing a lab at the university.

"I have a lot of projects that have started to mature, which I hope can develop further. Having an opportunity like this to have some independent funding to move forward with some of these projects is very exciting," Tran Nguyen said.

With support from the Greater Milwaukee Foundation and a new community of student researchers, the next breakthroughs in Parkinson's research may just come from Tran Nguyen's lab at UW-Milwaukee.

By Sarah Vickery, College of Letters & Science

UWM alum works to uncover building blocks of the universe at SNOLAB

What you need to know:

- Jodi Cooley is the executive director of SNOLAB, an underground research facility in Ontario, Canada on par with national laboratories like Fermi Lab in the United States.
- SNOLAB hosts scientific experiments that probe the nature of neutrinos, radiation, and dark matter, which could give researchers more knowledge about the building blocks of the universe.
- Cooley is a UWM alumna who majored in applied math and physics. She credits UWM with stoking her love of physics and for teaching her leadership skills.

To get to work some days, Dr. Jodi Cooley must put on full mining gear, ride an industrial elevator 1.2 miles underground, walk a half a mile through a working nickel mine, take a shower, and change all of her clothing so she doesn't contaminate the clean lab.

It's an unusual commute, but then, Cooley has an unusual job. She's the executive director of [SNOLAB](#), an enormous underground research facility in Sudbury, Ontario, Canada. There, scientists from around the world work on experiments that will help us better understand the building blocks of the universe.

"I work with people who are motivated by the fact that what they do is really awesome, that they're working with people who are leaders in the world for the type of research they do, and they're trying to do things people have never done before," Cooley said.

As the [head of SNOLAB](#), Cooley is responsible for guiding a staff of 131 employees, plus visiting scientists, to fulfill the institution's vision: "To be a leading laboratory in deep underground science, hosting the world's most advanced experiments that provide insight into the nature of the universe," she explained.

That means she works with the Canadian and Ontario governments to secure funding and resources for SNOLAB. She coordinates international teams of scientists who want to perform experiments in SNOLAB's underground lab spaces. She works with the scientific community to make researchers aware of the lab's capabilities, and she's responsible for the health and safety of each employee who works in the facility.

The lab in the mine

SNOLAB is located in Creighton Mine, a working nickel mine operated by Vale Limited; the facility is in a now-depleted area of the mine away from regular operations. It's a major research facility in Canada, much the same way Fermilab or Argonne National Laboratory are in the United States. And it's enormous.

"The square footage of the floor space is 5,000 meters squared, but that doesn't tell you the whole story of the lab. It's the volume you want to think about," she said. SNOLAB boasts three large underground caverns in which scientists do experiments; the biggest is as tall as a 10-story building and the other two aren't far behind. SNOLAB also boasts a chemistry wet lab and assembly space on surface, along with modern offices, meeting spaces and an auditorium.

Being deep underground means that SNOLAB's clean rooms are shielded from the everyday background radiation on the Earth's surface. This shielding from cosmic rays is essential to detecting extremely rare subatomic particle interactions that is the core of SNOLAB's research program.

Scientists – either those employed at SNOLAB, or those who are visiting to perform their experiments – are conducting research in some interesting areas.



Jodi Cooley

The lab currently has 24 experiments in various stages of development. Some explore the nature of a subatomic particle called neutrinos; others examine the effects of varying radiation levels on biological matter; some explore quantum computing. But most of the experiments revolve around dark matter. That's Cooley's particular area of expertise.

[Dark matter](#) is a unique type of particle because scientists can't see it, even though they've found evidence that it exists.

"The fact that the Milky Way galaxy is rotating and the stars at the edge of the galaxy, including ourselves, are not flying off into outer space, is because there are some particles there that are providing extra gravity that act like the glue that keep us rotating around the black hole at the center of our galaxy," Cooley explained. "We know (dark matter is) there, but it's not luminous. We can't see it with our eye. We can't detect it even with our x-ray telescopes. ... We've only been able to observe it through the effect its gravity has."

Being a part of this innovative research is exciting because the discoveries made at SNOLAB may help reveal some of the fundamental building blocks of the universe. Cooley said the lab's work has captured the interests of not only scientists, but the Canadian government as well: Canadian prime minister Justin Trudeau is rumored to want to visit SNOLAB because "he's a big science geek," Cooley joked.

UWM paved the way

Cooley loves working with the dedicated scientists and staff at SNOLAB, but her favorite part of the job is getting to learn about and advocate for so many fascinating areas of science. Cooley loves to learn. It's why she couldn't make up her mind when she was attending UWM. She tried five different majors and was in her fifth year of college before she found her feet in the Physics Department.

"I started hanging out with more physicists. I was like, you know what? This seems kind of fun. I think I might want to go to graduate school for physics," Cooley recalled.

And she did. As she majored in applied mathematics and physics at UWM, Cooley did research on rapidly rotating neutron stars under the mentorship of Distinguished Professor (Emeritus) John Friedman, and then attended UW-Madison to earn a PhD in astrophysics. Her research focused on a project called AMANDA – the Antarctic Muon and Neutrino Detector Array.

"And yes, I have been to the South Pole," Cooley laughed.

She held postdoctoral positions at MIT and Stanford before landing a faculty position at Southern Methodist University, where she taught for 13 years before taking over as the director of SNOLAB last year. She credits UWM for encouraging her love of learning and for giving her the leadership skills she uses each day.

"When I look back at my time at UWM, I can't tell you how much it meant to me," Cooley said. "If I had gone to another school ... I don't think I would be where I'm at today."

That's underground, in a mine, at a laboratory on the cutting edge of physics discoveries.

By Sarah Vickery, College of Letters & Science



English grad's ghost walks connect people to history and the occult

What you need to know:

- Allison Jornlin is the tour developer of American Ghost Walks, a company that provides tours of historical haunts.
- Jornlin is a UWM English alumna who enjoys storytelling.
- Jornlin creates tours with an emphasis on the history of a locale as well as its paranormal activities.

Allison Jornlin is a writer, a ghost hunter, and, in her own words, a professional weirdo. She's also the tour developer for [American Ghost Walks](#), a family business that takes guests on haunted history tours of cities in Wisconsin, Illinois, Minnesota, Maine, Louisiana, California, Hawaii, and Puerto Rico.

Before that, however, Jornlin was a UWM graduate. A native of Big Bend, Wisconsin, she chose UWM because she wanted to stay close to home. She majored in English but also enjoyed taking classes in American Indian Studies, especially those taught by the late professor [John Boatman](#). After graduation, those classes eventually helped her land a spot as a teacher at the [Indian Community School](#) in Franklin, Wisconsin. She taught for 13 years before leaving teaching to research and write about hauntings full-time.

With a deep appreciation for Milwaukee, its history, and its ghosts, Jornlin sat down to talk about American Ghost Walks – just in time for Halloween.

How did you start creating haunted history tours?

The first haunted history tales that I loved were from Richard Crowe, who developed one of the first haunted history tours in the nation in Chicago in 1973. My mother loved listening to the Chicago radio stations. Every Halloween she would gather me and my little brother around the radio to listen to Richard Crowe spin tales of haunted Chicagoland. It's one of my favorite memories.

I decided well, (as a teacher) I now have summertime off so I can research the history of Milwaukee. I was able to go to the Historical Society and every little library around and collect stories. I put together a haunted history tour of the [Third Ward](#) in 2008. It's still going. This inaugural tour eventually led to the founding of the family business we have today.

A couple years later, when my brother was looking for a way to pay his mortgage, I said, why don't you do a haunted history tour of Madison? He really built American Ghost Walks into the successful company it is today. When it was time, we both quit our jobs and now our tour company is in seven states and Puerto Rico.

What sets American Ghost Walks apart from other ghost tours?

We keep working on it and entering more states which is really fun, because then you get to learn about the heritage of different areas of the country. We don't just tell any ghost stories; we tell ghost stories that are connected with the history and the heritage of a place and the people that called that place home.

For example, Kennebunkport, Maine, is one of the tours that we resurrected for this season. I had such a fascinating time delving into its history. There are a lot of writers that used to summer there, like Booth Tarkington. He wrote a book called *The Magnificent Ambersons*, which was directed as a film by Orson Welles. But the fascinating thing about him that people, even locals, don't recognize is that he grew up in spiritualism, and had many extraordinary experiences with the spirits.

That's an example of the kind of subject matter we focus on. We don't want to just give the history and then the ghost stories separately. We can bring about some greater understanding of not only the local people, but of historical movements, like the spiritualist movement. I think that's important because, for example, the spiritualist movement was a big proponent of abolition and women's rights. A lot of people don't realize how ahead of their time spiritualists really were. Of course, we're interested in modern day manifestations of these things as well. But I think people need to understand the history first.

What goes into creating a successful tour?

(It's) important to walk the route that you're thinking of, because many of our haunted history tours are walking tours. When you're doing a walking tour, it's challenging because the tour can only be about a mile. You want it to be a nice, relaxed stroll that takes people past several locations, looping it if possible so it will take them back to the beginning. So, it's challenging to find enough stories that connect in a one-mile radius.

(As for writing a tour script,) there's a lot of archival research, a lot of looking at old newspapers. Certainly, actually visiting the place is very important, and talking to people at the local library and the historical societies there. Not all of the interesting stuff is online. I look over documents to find a narrative that will connect stories.



UWM English alumna Allison Jornlin is the tour writer for American Ghost Walks, a company that guides people on tours of historical haunts. The company started in Milwaukee and has since expanded to seven states and Puerto Rico. Photo courtesy of Allison Jornlin.

How do you find haunted places to feature on your tours? Is it simply a matter of asking the locals, "Where are your ghosts?"

Well, that can be a challenge, because certainly there are lots of people that turn you away and look at you askance for even suggesting such a thing. But going door to door is part of the process. What I like to do is look into historical sites and hauntings that come up in old newspaper articles and other documents, and then you can walk around and talk to people in that area. So I am digging things out of history, then seeing if they're still relevant. A lot of times they are.

What do you say to the skeptics who don't believe in ghosts or hauntings?

In many ways, ghost stories are a sacred thing to people. I mean, it's fun, don't get me wrong! I know, during the Halloween holiday especially, people like to joke about ghosts, but to lots of people, experiences with the departed or other entities in the spirit world have sacredness. That shouldn't be overlooked.

In our society at large, we're taught not to believe in these things, and that science has the answer for everything. Science is great. My dad was a high school science teacher. Science is very much something that's important to me as well. But there are things beyond science that many people have experienced. And in this society, there's not really a way to learn about these things. Our haunted history tours are one way people can reconnect with the spiritual types of learning.

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English professor releases new book exploring infertility through art

Facing the devastating sight of an empty crib, the prospect of another negative pregnancy test, or the physical and mental toll after another unsuccessful round of IVF, some individuals struggling with infertility turned to art to express their anger, frustration, and grief.

Now their work has been collected in a new book co-edited by UWM assistant professor of English Maria Novotny. [Infertilities: A Curation](#) includes visual art and creative writing to evaluate the immediate and lasting emotional toll of infertility. The book highlights the perspectives of women, men, heterosexual couples, single parents, nonbinary and transgender individuals, and countless others. According to the World Health Organization, one in six people will experience infertility, though often discussing infertility is seen as taboo or deeply personal.

Novotny is the co-director of The ART of Infertility, a nonprofit organization that helps individuals grappling with infertility channel their struggles in the form of art. The organization has shown exhibitions of these works around the United States. Novotny's co-editors include Elizabeth Horn (co-founder and co-director of The ART of Infertility) and Robin Silbergleid (author and professor of English at Michigan State University).

Infertilities: A Curation debuted on Sept. 19 and is available from retailers like [Bookshop.org](#), [Amazon](#), and [Wayne State University Press](#). A month-long exhibit featuring artwork from the book along with pieces from the permanent collection of The ART of Infertility will be held at the [North Shore Wellness Collective](#). The Milwaukee exhibit officially opens on Friday, Oct. 6 from 7-9 p.m. and the exhibit will conclude on Friday, Nov. 3 from 7-9 p.m. with a book reading of *Infertilities* hosted with Boswell Books. Other virtual and in-person events will be added to the book's landing page and can be found [here](#).



Maria Novotny



Ghost walks

[Continued from Page 7](#)

You've got a successful haunted historical tour company and Halloween is coming up. We can't end this interview without a good Milwaukee ghost story.

My favorite story from our Third Ward Tour is about Clair Richardson, who was the founder of the Skylight Theatre. He died in 1980, but he was a very popular and larger-than-life personality. Clair Richardson is actually still there at the theater. His ashes are anyway, and many people believe his spirit is still there. And they've seen evidence of that, to their chagrin, on many occasions.

After he died, it was his intention that his (ashes) be put under the stage of the Skylight Theatre. ... It was Clair Richardson's wish that any questionable decisions that his successors made were over his dead body! If you go to the trap room, they actually have a little shrine to Clair where his ashes are kept and there's some memorabilia and photos of him down there. Under the stage, they have a lot of little rituals that they perform. One of them is that they have this spotlight that shines on his urn and his photo, and it's never supposed to be allowed to go out. You know where the story is going.

(A few months after his death) during a live performance, the stage lights were going crazy. The techs were backstage and they couldn't figure out what was causing the problems. The stage manager descended to the trap room and checked Clair's light. He found that it had burned out. Upon replacing it, all the problems on stage ceased. This series of events has actually repeated itself over the years. Because of that, before each and every performance the stage manager must check Clair's light. This is actually on the stage manager's checklist! Clair's light must shine before the show can go on.

By Sarah Vickery, College of Letters & Science

Research partnership uses data science to look at household wealth, ownership

Home values appreciate more slowly for lower-income, minority and female homeowners. These were among the findings of a recent research project by a team from the University of Wisconsin-Milwaukee. The project was funded by the Mortgage Guaranty Insurance Corporation (MGIC).

The study used data science to find insights into what contributes to disparities in home values and how this impacts the accumulation of wealth that comes from owning a home.

"This research has produced findings we feel are actionable by the many public, private, non-profit and philanthropic stakeholders collectively focused on addressing equity in homeownership in Milwaukee," said Geoffrey Cooper, MGIC vice president of product development. "It provides us a better understanding, specific to Milwaukee, of what moves the needle when it comes to building wealth through homeownership."

In this project, "Bridging the Racial Disparity in Wealth Creation in Milwaukee," UWM students and faculty created a data science method that examined the factors contributing to wealth creation through housing. It revealed inequities in the valuation of homes, and identified areas of policy interventions that could address them.

"For many low- to middle-income households, homeownership is often their largest asset," said Purush Papatla, co-director of the Northwestern Mutual Data Science Institute and UWM professor of marketing. "Appreciation in housing values is an important hedge against inflation and a primary source of wealth accumulation."

But how the values of homes are determined affects the amount of investment for the homeowner. For this project, researchers defined housing returns by an owner's annual rate of return on home price growth or decline over time and also the resale value of a foreclosed home.

The research team created a machine-learning model called the Wealth Creation Index that uses data that tracks the wealth created by homeownership over time. The model separated data into the components that help or hinder valuation, providing a way to quantify social impact.

UWM faculty researchers on the team were Kundan Kishor, professor of economics; Rebecca Konkel, assistant professor of criminal justice; Jangsu Yoon, assistant professor of economics; and Tian Zhao, associate professor of computer science.

Research findings include:

Home values appreciate at a lower rate for minorities and female homeowners compared to white homeowners. On average, Black homeowners witness 6.8% lower appreciation. This disparity is 3% lower among Hispanic homeowners and 1% among female homeowners.

Higher rates of foreclosure for Black, Hispanic and female homeowners exacerbate the wealth disparities.

A neighborhood's foreclosure rate has a nonlinear effect on home values. For example, if a house has been foreclosed in a neighborhood with foreclosure rates above 95%, homeowners experience a 9.6% decline in their home's foreclosed value. This compares to a 1.2% decline in foreclosed value of a home in a neighborhood with foreclosure rates below 95%.

The ratio of owner-occupied homes in a neighborhood affects home values with the threshold of 30%. When the share of owner-occupied housing units in a neighborhood is less than 30%, there's a negative impact on home values.

Distance to a higher quality high school is a key factor associated with home values. Home values decrease as the distance between a given house and a high-performing high school increases.

The team found that homeownership is a better tool for wealth creation than renting – even when the loss of wealth attributable to foreclosure is considered. Therefore, policy tools are needed to increase access to homeownership among who are lower-income, minorities and women.

Other recommendations included improving policies that support homeowners who are at risk of losing their homes to reduce foreclosure rates and policies that prevent widespread declines in property values.

By Laura Otto, Marketing and Communications



Kundan Kishor



Jangsu Yoon

The collision of heat waves, drought and water scarcity in Wisconsin

What you need to know:

- Woonsup Choi, an associate professor of geography at UWM, is interested in how climate change, urban growth, and drought impact water levels in waterways.
- His research explores heat island effects, the impact of urban green spaces, and how hydrological droughts impact Wisconsin.
- This work will become even more important as climate change affects weather patterns, leading to potentially longer droughts and warmer temperatures.

Milwaukee temperatures climbed to a record 95 degrees over Labor Day weekend this year, while other parts of Wisconsin experienced drought conditions. Climate change is driving an increase in extreme heat waves in the U.S. and exacerbating droughts by making them more frequent and severe.

Woonsup Choi's research has shown that urban expansion is associated with a more intense urban heat island effect in summer, including more exceptionally hot nights. In a study of 49 cities, including Milwaukee, he found that urban green areas are not increasing at the same rate as urban expansion – even when an urban population is declining.

An associate professor of geography, Choi is chiefly interested in how climate change, urban growth and drought affect the water levels in rivers and waterways.

In another research project, he and graduate student Susan Borchardt demonstrated that the recharging of aquifers, which provides the groundwater that replenishes rivers, will slow in the face of climate change in northeastern Wisconsin, despite an expected 5% increase in rainfall.

Choi recently sat down to talk about urban heat waves, the different kinds of drought (extreme lack of rainfall is only one kind) and the dual effect of climate change and groundwater withdrawal.

In one of your research papers, you looked at the association between land use and heat waves. Could you start by explaining what a heat island effect is?

In general, the Earth reflects some of the sun's energy and also absorbs some of it. More specifically, the land surface receives energy from the sun during daytime and then stores part of it. The energy that the land accumulates during daytime is released at night and is largely responsible for the air temperature.

However, different materials on the ground have different abilities to retain that heat. Buildings and pavement not only release energy more slowly at night than soil does but also supply artificial heat. So nighttime temperatures there tend to be warmer compared to natural areas.

So, the warmer temperature in a city looks like an island surrounded by cooler temperatures. The mechanism of urban heat island is much more complex than this, and urban heat islands occur at particular atmospheric conditions.

Among the 49 cities you looked at in your study, you found an association between more extreme heat waves and a lack of green space. Tell us more.

[In this study](#), we found that urban areas have increased rapidly, while green areas are declining in most of the cities we looked at.

I also conducted a study comparing heat island effects and temperature patterns in Milwaukee and Minneapolis. In Milwaukee, we are benefiting a lot from Lake Michigan, which has a very strong moderating effect on intense heat. But for both cities, the number of days and nights that exceed certain temperature thresholds has increased and is likely to increase in the future.

In addition to the background climate, the layout of the cities – features like whether it is more spread out, or dense with buildings – affect heat waves. Also, whether there's a large waterway going through the city.

We can create conditions to lower heat island intensity if we can promote more air flow. More green space is important but also how the green spaces are connected to each other. If they are connected, the air can flow more freely.

Describe the different kinds of drought we experience in Wisconsin.



Woonsup Choi, associate professor of geography, talks about what summers in Milwaukee and Wisconsin are expected to be like in the future. (UWM Photo/Troye Fox)

The meteorological drought happens when rainfall is lacking. In hydrological drought, the water in rivers and the amount of groundwater in aquifers is lacking. There is also agricultural drought, which generally means moisture in the soil that can be used by plants and trees is limited.

The water in rivers during a dry period usually comes from the groundwater. So, if the water is lacking in rivers, that can also suggest the water level is falling under the surface. But it's not a simple correlation.

When meteorological drought happens, then naturally the water in the river will also decline – but not immediately. It will take some time.

Usually there is an association – or synchrony – that occurs when there is a meteorological drought. After some time, we can expect hydrological drought to result in falling river levels. And the same is true when it rains again or if it rains a lot: It takes a while to bring the river levels back. Land conditions also can affect the lag time between the two.

In another recent research paper, you investigated the characteristics of hydrological droughts in Wisconsin. What did you find?

[In this paper](#), we looked at the location of 24 hydrological droughts during a 38-year period and found there were three areas across the state and each had different variables affecting drought conditions.

During the same time period, the number of high-capacity wells (used for agriculture), has increased substantially in Wisconsin.

We found that unlike meteorological droughts, hydrological droughts tend to occur more frequently in recent years and groundwater withdrawal from unconfined aquifers has exacerbated hydrological droughts. This has made it more difficult to predict hydrological droughts using information from meteorological drought.

What did you find in terms of hydrological drought in the Milwaukee area?

The water level in the Kinnickinnic River is extremely variable and, based on the method I used to diagnose hydrological drought, the results came out very different from other urban rivers. So, it needs further investigation.

The KK stood out because the watershed is highly urbanized. Generally, rainwater enters a river in two ways: Rain infiltrates the ground, and it stays there for a while before it exits into the river. At the same time, excess water that cannot infiltrate the soil will flow over surfaces and go directly into the river. When there is a lot of pavement, most of the rainwater will flow overground. So, the timing is short between rainfall and the rise in water levels.

By Laura Otto, Marketing and Communication

Award winning undergraduate researchers get a head start on future

What you need to know:

- UWM recognized the 2022-23 Senior Excellence in Research Award winners in May.
- Many award winners are students who graduated with majors in the College of Letters & Science and conducted research with L&S faculty.
- Research included inquiries about how young people become addicted to e-cigarettes, using fluorescence to study misfolded proteins, cancer drug research, and more.

Why do young people in rural areas become addicted to cigarettes, and how can this addiction be prevented?

What is a treatment that can best combat triple-negative breast cancer with fewer side effects?

What's happening out in the universe that may change the way we understand the cosmos?

Those are just some of the undergraduate research projects the eight winners of the [2022-2023 Senior Excellence in Research](#) award winners were involved in before graduating in May.

Alex Nelson, who earned his BS in biological sciences and neuroscience with honors, became a research assistant as a sophomore. He worked with Joshua Gwon, associate professor of nursing, studying how young people in rural areas become addicted to e-cigarettes and if there are ways to keep them from becoming addicted.

Nelson also worked with Han-Joo Lee, professor of psychology, as a lead researcher in his anxiety disorders lab. Nelson plans to combine his interest in public health and medical research by pursuing a subspecialty career in internal medicine and community health at the University of Wisconsin School of Medicine and Public Health.

Naomi Raicu, who graduated with a bachelor's in physics, a minor in mathematics and an honors degree, worked with Ionel Popa, associate professor of physics, in his lab using fluorescence to study misfolding proteins. "Fluorescence helps us understand how proteins are folding and unfolding inside biomaterials," she explained. Proteins are the workhorse, she added. If they misfold, the result can lead to Alzheimer's and other conditions.

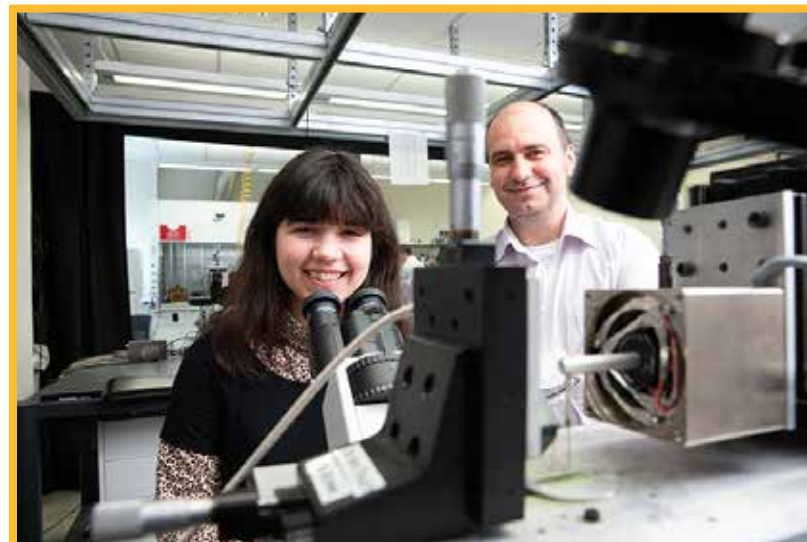
A Shorewood High School graduate, Raicu has been involved in research since high school and chose UWM because it offered the opportunity to do undergraduate research.

Dhivya Senthil Murugan, who graduated with a double major in neuroscience and cellular/molecular biology with a chemistry minor, liked the idea of using research to help people with medical challenges. She worked with Xiaohua Peng, associate professor of chemistry and biochemistry, studying drugs that could potentially combat hard-to-treat triple-negative breast cancer with fewer side effects.

"Research is about learning new things and trying to make the best of what you know to better people's lives," she said. "For me the better way to do that was through medical research and medicinal chemistry. When I first got involved, I didn't know it was a thing. It was a very unique and enriching experience."

Some of the students came into the program excited about doing research as undergraduates. "Becoming involved in research has been a dream of mine since high school," said Claire Bolda. "This really helped me explore my interest in astronomy." She graduated with a BS in physics, with an emphasis on astronomy.

Her work with Dawn Erb, professor of physics, looked at how galaxies grow. "That can have important implications for our understanding of galaxies and how they're formed," Bolda said.



(Top) Naomi Raicu worked with Ionel Popa, associate professor of physics, studying misfolding proteins, which can lead to Alzheimer's and other conditions. **(Middle)** Alex Nelson worked with Joshua Gwon, associate professor of nursing, studying how rural young people become addicted to e-cigarettes. **(Bottom)** Dhivya Senthil Murugan (center) accepts her SERA award. She worked with Xiaohua Peng studying drugs that could combat breast cancer with fewer side effects. (UWM Photos/Troye Fox)

Sparrow Roch also had the opportunity to study and research the formation of the galaxy. Roch worked with mentor Sarah Vigeland, assistant professor of physics, to study pulsars – quickly rotating neutron stars that emit beams of radiation. Timing the unique signals from pulsars at different locations in the galaxy gave researchers the opportunity to detect gravitational waves at much lower frequencies than those previously detected. Roch graduated with a double major in computer science and physics, with an emphasis on astronomy.

Benefits flow both ways

Many of the students found that their research experience carried over into the classroom and vice versa.

"Initially I was able to practice what I was learning in class in the lab," said Taylor Wilcox, who worked with Peng and Alexander (Leggy) Arnold in the lab. "Then I took what I was learning in class to come up with better scientific questions. Overall, the experience has been really good."

Wilcox's research focused on helping find new medications for the neuropathic pain that comes from chemotherapy and diabetic complications. She earned her degree in biochemistry and chemistry.

Writing papers and presenting at conferences also helped the students broaden their range of skills, the students all agreed.

"I think it's really helped me with communication because you really have to learn to be concise," Raicu said.

Throughout the year, SERA students shared their experiences with other undergraduate researchers and other students potentially interested in research.

"You can get involved in research at other schools, but people are very encouraging here," Raicu said. "You can get involved in a field you are actually interested in. And [it's R1](#) and affordable. You are getting so much value for your money."

For more information about the 2022-23 SERA award winners, see the Office of Undergraduate Research [website](#).

By Kathy Quirk, Marketing and Communication



Upcoming Events

Recurring October events

Art Works: Recent Donations to the UWM Art Collection. Emile H. Mathis Art Gallery. Art Works places the spotlight on curation and research practices at the UWM Art Collection and [Emile H. Mathis Art Gallery](#). Exhibits run Monday-Thursday, 10 a.m.-4 p.m. through Feb. 8, 2024.

French Table – Practice your French in a conversational setting. 1-2 p.m. Curtin 766. All learning levels welcome. Held Oct. 4, 12, 18, 26, and Nov. 1.

Weekly Irish Language Table. 1-2 p.m. Merrill G16. All learning levels welcome. Held Fridays throughout the semester. Refreshments provided.

October 4

Stitch Under the Stars. 2-3 p.m. Manfred Olson Planetarium. Bring your own fiber arts project or take a star embroidery kit. Cosponsored by the UWM Women's Resource Center.

October 5

Cosmic Bowling. 7-10 p.m. Union Rec Center. Join the Planetarium for bowling fun. Free for UWM students.

October 12

The Role of Fragile Masculinity in Producing Illogical Medical Diagnoses of Intersex Infants. 11:30 a.m.-12:30 p.m. Curtin 535B. Cary Costello, UWM, presents in person and via [Teams](#). Part of the Women's & Gender Studies lunch and learn series.

October 13

United We Read – Creative Writing Faculty/Student reading series. 7-8:30 p.m. Sugar Maple, 441 E. Lincoln Ave., Milwaukee. Readings by students Daphne Daugherty, Jessica Lynn Drake-Thomas, and Kurt Olsson and associate professor Valerie Laken.

October 14

Celebrate Earth Science Week at the Greene Geological Museum. 11 a.m.-3 p.m. Greene Geological Gallery (Lapham 138). A part of UWM Family and Friends weekend. Activities for all ages.

Solar Eclipse Viewing Party. 11 a.m.-1 p.m. Cunningham parking lot. Experience a partial solar eclipse visible from 11 a.m. to 1:30 p.m, with peak visibility at approximately 12 p.m. Special glasses will be available for safe viewing. Enjoy a 40-minute planetarium show afterward.

October 17

Non-Profit Career Panel. 4:30-6:30 p.m. Lubar Entrepreneurship Center, American Family Dream Center. Featuring alumni Breonna Stone, Alexander Malchow (Faith in Peace), and Claire Reuning (Catholic Charities). [Registration](#) is free.

October 19

Creative Writing Program's Visiting Writer: V.V. Ganeshanathan. Craft Talk. 3-4 p.m. in Architecture and Urban Planning Room 170 or [livestreamed](#). Reading and author Q&A. 7:30-8:30 p.m. in Curtin 175 or [livestreamed](#).

"Race," Racism, and Representation in Ancient Italy: Ethiopians in the Visual Arts of the Roman Empire. 4:30-5:30 p.m. Lubar N140. Guest speaker [Sinclair Bell](#) is Professor of Art History and Presidential Teaching Professor at Northern Illinois University.

October 21

Planetarium Centennial Party. 6-8 p.m. Manfred Olson Planetarium. Join the Planetarium to mark the 100th anniversary of the invention of the planetarium. Enjoy stargazing shows, outdoor telescopes, and more. Free and open to the public.

October 25

The Role of Gun Politics in Shaping Our Democracy – 2023 Social Impact Lecture. 5:30-6:30 p.m. Golda Meir Library, 4th Floor Conference Center. Jennifer Carlson, Arizona State University, explores how gun culture impacts American society and politics. Free but [registration](#) is requested.

October 26

All We Have Is The Truth: Burdened Individuality, Abstract Equality, and Economic Inference. 4:30-6 p.m. Curtin 175. Trevon Logan, Ohio State University, presents as part of the Phi Beta Kappa [Visiting Scholar program](#). Sponsored by UWM's Phi Beta Kappa Chapter.

October 27

Planetarium Event: Rooftop Stargazing. 8-9 p.m. Physics building rooftop. Free and open to the public. The Skydeck is located on the 5th floor of the Physics building. Follow the pink signs to take the elevator at the east end of the Physics building to the 3rd floor and continue left to the staircase that leads to the roof. Unfortunately, the Skydeck is not wheelchair accessible. Event will be canceled if there is inclement weather.

OCTOBER 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

October 27

Samhain (Celtic Halloween). 5-7 p.m. Merrill Hall courtyard. Join the Center for Celtic Studies for live music, Celtic ghost stories, a costume contest, and more. Free and open to the public.

Nov. 3

Careers and Futures in the Language Industry. 11:30-1 p.m. Curtin 104. UWM alum H el ene Pielmeiers shares insights into the language services and technology market. Attend in person or watch via [Zoom](#).

Planetarium Show: Searching for Life. 7-8 p.m. Manfred Olson Planetarium. Learn how the James Webb Space Telescope is helping in the search for distant worlds and their potential to host life. Show not recommended for children under 4. [Tickets](#) are \$5-\$6.



2023 Panther Prowl 5K Run/Walk

Saturday, Oct. 14 | 10:00 a.m.

Join the UWM Alumni Association on Saturday, Oct. 14, in person or virtually, for the UWM Panther Prowl 5K Run/Walk. The beloved campus tradition features a picturesque course that winds through campus and Lake Park in the prime of the autumn-color season. Whether you run, walk or stroll with us on the Upper East Side, or choose the virtual option to show your support from afar, you will be part of a campus legacy in the Panther Prowl's 19th year!

All proceeds benefit UWM student scholarships.

[Register here](#) today!



Alumni Accomplishments

Kitty Morse ('67, BA; '72, MA French) penned a book entitled, *Bittersweet: A Wartime Novel and Heirloom Recipes from Occupied France*, which details the history of Morse's family, torn apart by World War II, and their family recipes that survived. Morse will speak about her book at the Coronado Public Library in [Coronado, California](#), in October.

Ghassan Abou-Zeineddine ('16, PhD English) has joined Oberlin College in Ohio as an Assistant Professor of Creative Writing. He also spoke to [NPR's](#) Neda Ulaby on the show "Weekend Edition" about his new book, titled *Dearborn*, in September.



Ghassan Abou-Zeineddine

Abbie Kerr ('10, PhD Psychology) will serve as the interim provost of [Illinois Wesleyan University](#) for the remainder of the 2023-24 school year. She takes over for the previous provost, who stepped down from the role to focus on teaching. Kerr is currently Illinois Wesleyan's Associate Dean for Scholarly and Creative Work and also serves as professor of psychology at IWU and the director of neuroscience.

Alexis Dahmer ('05, BA Sociology and French) was featured in [OnMilwaukee](#) as part of the publication's "Future is Female" series. Dahmer is the Senior Legal Director of Compliance, North America at Johnson Controls and an adjunct law professor at Marquette University.

Lisa Lien-Mager, ('88, BA Spanish and Journalism, Advertising, and Media Studies) was appointed as the Deputy Secretary for Forest and Wildfire Resilience at the [California Natural Resources Agency](#) by California Gov. Gavin Newsom. She has been a Senior Advisor for Strategic Communications at the California Natural Resources Agency since 2021.

William Tisdale ('89, MS Urban Affairs) was lauded in the [Milwaukee Journal Sentinel](#) for his work fighting against housing discrimination in Milwaukee. Tisdale retired from his role as the president and CEO of the Metropolitan Milwaukee Fair Housing Council (MMFHC) in May.



In the Media and Around the Community

How does Milwaukee's Martin Drive thrive as a diverse neighborhood in a very segregated city? **Arijit Sen (History)** gave his take on [WUWM Radio](#).

Noelle Chesley (Sociology) spoke to [Wisconsin Public Radio](#) about the challenges facing a growing contingent of stay-at-home-fathers.



When Milwaukee's Downer Theater closed unexpectedly, **Jocelyn Szczepaniak-Gillece (Film Studies)** spoke to [Spectrum 1 News](#) and [Wisconsin Public Radio](#) about the struggles of smaller cinemas in a shifting movie market.

Just what would it take to

get audiences back in theaters? She answered that question on another segment for [Wisconsin Public Radio](#). Finally, Szczepaniak-Gillece appeared in an MGM+ [documentary](#) about the serial killer Ed Gein.

As United Auto Workers in Milwaukee took to the picket lines as part of a national strike, **John Heywood (Economics)** spoke to [TMJ4 News](#) about the driving forces behind the movement.

There is a surprising parallel between the rise of hip-hop and the advent of Deion Sanders as a Black football coach at the University of Colorado, said **Robert Baker (African and African Diaspora Studies)** in a [Milwaukee Journal Sentinel](#) article.

Erin Sahlstein-Parcell (Communication) spoke about love, family, friendship, and relationships in an article published in [The Atlantic](#).

Undergraduate student **Frank Kalisik (History)** will present research titled, "From Residency to Revolution: Social and Political Equality in the Midwest, 1848-1861" at a history symposium at Sam Houston State University in October.

Alumnus **John Harry ('21, MA History)** delivered a talk titled, "Stevens Point and Wausau: Sister Cities of the Pinery" at the Woodson History Center in Wausau, Wisconsin, as part of the Marathon County Historical Society's [History Speaks program](#).

Alumna Heather O'Brien ('05, MS Biological Sciences) gave a lecture titled "Wolverine Surveys in Wyoming" as part of the Museum of Discovery science lecture series at [Sheridan College](#) in Wyoming in September.

While a neuropeptide shows promise as a potential cause of overindulgence in food in humans, **Benjamin Campbell (Anthropology)** questioned the results in an article in the [Scientific American](#).

Nigel Rothfels (History) spoke about the historical role of zoos in an article that originally appeared in [The Atlantic](#). The article details the arrival of Basil, a one-eyed Virginia opossum, at the Smithsonian National Zoological Park in Washington, D.C.

[Shepherd Express](#) spoke with undergraduate student **Samantha Peetz (English and Film Studies)** about her work with SEEN, a collective of filmmakers, artists and curators focusing on queer cinema.

Before Congress narrowly avoided a government shut-down, **Hong Ming Park (Political Science)** spoke to [CBS 58 News](#) about the potential impact to government employees in Wisconsin.



Professors Danilel Pop, Cosmin Marian, and **Jeffrey Sommers (Global Studies and African and African Diaspora Studies)** delivered an invited presentation ("Polycrisis and Societal Resilience") at an international conference in the Department of Economics and Business at the University of Belgrade

on Sept. 21. Sommers also was invited to the US Embassy in Belgrade on Sept. 22 to discuss university partnerships for his work on property tax policy reform. **Sommers** also weighed in on the controversy surrounding the funding of repairs to the Milwaukee Brewers stadium in an op-ed in the [Milwaukee Journal Sentinel](#).

Undergraduate student **Alexia Castillo (Biochemistry)** was featured in a [TMJ4 News](#) segment detailing a new partnership between the UWM Undergraduate Research program and the Medical College of Wisconsin's Cancer Center to give students scholarships to participate in cancer research over the summer.

Welcome to campus, Panthers!

UW-Milwaukee welcomed students back to campus and kicked off a new school year with dozens of Fall Welcome events. Students participated in boat tours, tie-dye decorating, tailgates, soccer games, beach days, Milwaukee explorations, Brewers games, campfires and much more. Click [here](#) to see more photos.

Welcome back, Panthers. Here's to a new year and new possibilities!



(Above) Herbert De Leon begins the presentation for the show at the UWM Manfred Olson Planetarium during the Stars'n'Smores event at Fall Welcome.

(Left) Students gaze at summer constellations and the super moon through telescopes at the Stars'n'Smores event. (UWM Photos/Elora Hennessey)



Laurels and Accolades

Undergraduate student **Rose Lemerande (Anthropology)** is the curator of an annual exhibit at the [Neville Public Museum](#) in Green Bay, Wisconsin. Titled "Morbid Curiosities," the exhibit is displayed each October and features items in the museum's collection with a macabre past. Lemerande, now a first-year student at UWM, was an intern at the museum over the summer. The exhibit runs through Nov. 5.

Pamela Harris (Mathematics) recently served as editor for a new book published by the American Mathematical Society entitled, "Aspiring and Inspiring: Tenure and Leadership in Academic Mathematics," which is a collection of essays from successful women and gender minority mathematicians on what it takes to build a career in mathematics.

The editors of *Criminology & Public Policy*, a journal of the American Society of Criminology, announced that **Aki Roberts and John Roberts (both Sociology)** won the journal's Best Paper Award for Later-Career Scholars this year for their article, "Clearing Crimes in the Aftermath of Police Violence."



The UW-Milwaukee Class of 2027 gathers for a class photo on the Laura Moynihan Field at Engelmann Stadium. (UWM Photo/Cris Lago)