UWM

Background image is an artist's interpretation of an array of pulsars being affected by a gravitational ripple produced by a supermassive black hole binary in a distant galaxy. (Illustration by Aurore Simonet for the NANOGrav Collaboration)

UWM physicists are part of the team that just uncovered a new kind of gravitational wave

The hum in the background of the universe

CONTENTS

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It's no CSI, but the WI State Crime Lab is rewarding work for this chemistry alumna

What you need to know:

- Chemistry alumna Lexie Lanphere is a controlled substance analyst at the Wisconsin State Crime Lab.

- Using skills she learned at UWM, Lanphere analyzes evidence for traces of controlled substances like illegal drugs.

- Lanphere discusses how to get started in the forensics field.

It might be a small bag of white powder found on the floor of a suspect's car. It might be some residue left on a dirty spoon in someone's pocket. It could be a container of pills passed around at a nightclub.

Whatever form the substance takes, it's Lexie Lanphere's job to find out what it is.

Lanphere is a controlled substance analyst at the Wisconsin State Crime Lab's Milwaukee branch. Each day, she and her colleagues aid law enforcement and the Justice Department by providing expert analysis of evidence recovered from crime scenes. The Crime Lab analyzes everything from fingerprints to gunpowder residue to DNA to, yes, controlled substances.

"These are actual, physical substances that are suspected to be drugs – powder, liquids, tablets," Lanphere said. "(I look for) anything that is controlled under theUniform Controlled Substances Act. …It has the different schedules, 1-5, where Schedule 1 is substances with a high potential for abuse with no accepted medical use, and Schedule 5 is substances with low potential for abuse and have medical uses in the state."

When an illicit substance is recovered by law enforcement, it's delivered to the lab where Lanphere's supervisor determines which analyst will handle the case. When she gets an assignment, Lanphere takes custody of the sample and its case file. Using techniques like mass spectrometry or gas chromatography, she can determine the makeup of the material.

"Usually I'm pretty good at eye-balling it," Lanphere joked. "Sometimes you do get surprises, but after you see all of those different evidences, you get good at recognizing what (the sample) probably will be."

She's also good at her job because she's been using these analysis techniques since her days a chemistry major at UW-Milwaukee. Her UWM education gave her the foundation for her career, she said.

Lanphere is a Milwaukee native, but she started her education with a Bachelor's degree in English from the University of Kansas. She always knew she wanted to double-major, however, and fell in love with chemistry when she took several entry-level courses in the subject – the structure and rules surrounding chemical reactions made a beautiful sort of sense to her.

So, Lanphere decided to pursue a second Bachelor's degree at UWM, this time majoring in chemistry with a certificate in forensic science. She participated in undergraduate research in Dr. Joseph Alstadt's lab, where she learned to use the equipment that she now uses every day in her job. In fact, Lanphere and her fellow researchers in the lab worked with the Wisconsin State Crime Lab on a research project to determine a new instrumental method to quickly and reliably identify designer cathinones – more commonly known as bath salts. Through her work, Lanphere landed an internship at the State Crime Lab.

That connection proved invaluable. Lanphere worked at Millipore Sigma for a year and a half after graduation before she got a call from Sandy Koresch, the technical lead of the Controlled Substance Unit at the Wisconsin State Crime Laboratory. A job had opened in her division. Was Lanphere interested?

Saying yes was an easy decision. Lanphere said that she loves the routine science and working with the instruments to analyze samples. Her least favorite part of the job is testifying in court. She and her colleagues are often called upon to serve as expert witnesses and explain to a jury what they've found during their analysis of evidence.

It's also given her some insight into current social trends: Lanphere has seen evidence – literally – of the nation's opioid epidemic first-hand. Many of the substances she analyzes are laced with fentanyl, a drug that can be deadly in even small doses.

She has advice for anyone who wants to follow in her career path.Look for internships that will let you work with gas chromatography or mass spectrometry – the fundamental instrumentations used in forensic science. If you don't find your dream job right away, try and find work in a related field where you can build your experience and your résumé.

UWM chemistry alumna Lexie Lanphere is a controlled substance analyst at the Wisconsin State Crime Lab. Her job is to analyze evidence for the presence of substances restricted by state law. Photo courtesy of Lexie Lanphere.

Before anyone gets too excited, the job isn't anything like the CSI television shows. DNA and controlled substances can't be analyzed in just 45 minutes. Lanphere isn't out arresting bad guys or shooting off pithy one-liners. And sometimes, she said, "The cases can be kind of gross."

"We will analyze things that have been taken from people's body cavities during searches or autopsies. That sort of stuff is pretty icky," she added. "There are some samples that we get that just have a whole slew of drugs in them. I don't understand how people are putting this in their bodies."

But when they do, Lanphere will find out exactly what that substance is.

By Sarah Vickery, College of Letters & Science

Scientists turn stars into a galaxy-sized detector of gravitational waves

What you need to know:

- Scientists at UWM are part of NANOGrav, an international collaboration that studies gravitational waves.

- For the first time, scientists have found compelling evidence for low-frequency gravitational waves that generate a "background hum" across the universe.

- The team used stars called millisecond pulsars to detect the low-frequency waves.

- These waves might tell us more about the origins of the universe.

It was a celebration more than 15 years in the making – and the second time UWM has had a role in the breakthrough science of gravitational waves. UWM physics students and faculty gathered to watch a livestream on June 29 announcing the discovery that could tell us more than ever before about how the very early universe formed.

A collaboration of scientists in the U.S. and Canada, called the North American Nanohertz Observatory for Gravitational Waves, or NANOGrav, has compiled compelling evidence that a signal has been found for low-frequency gravitational waves that collectively generate a "background hum" across the universe. UWM has been a member of NANOGrav since its inception in 2007.

Low-frequency gravitational waves come from super-massive black hole binaries in the period just after the Big Bang when scientists theorize that the entire universe expanded in size from sub-microscopic to gargantuan in an instant. Scientists want to know more about these waves and the events that created them.

When galaxies merge – a process that's happening all the time, all over the universe – so do the massive black holes in the centers of each. Even before the catastrophic merger, the black holes start giving out a hum of gravitational waves that starts millions of years before merging. Finally, they come together in a collision so immense that it releases a brief, but space-rattling crash of gravitational waves that warps spacetime as they spread out from the impacts.

"But it's hard to study black holes because they don't give off light," said Sarah Vigeland, UWM assistant professor of physics. "Low-frequency gravitational waves will give us a way to study them without actually seeing them."

An ingenious detection strategy

These low-frequency gravitational waves have wavelengths much longer than the size of our solar system, which means they would oscillate the span of years or decades, Vigeland said. To detect them, astronomers turned our sector of the Milky Way Galaxy into a huge gravitational-wave antenna, using a suite of exotic stars called millisecond pulsars.

Millisecond pulsars are scattered throughout the galaxy, emitting beams of radio waves while spinning hundreds of times per second. The "lighthouse-like" radio beams sweep past the Earth at extremely regular intervals and appear to "pulse" when seen from the Earth.

A passing gravitational wave changes the pulses' arrival times. So, scientists looked for timing inconsistencies by observing them with radio telescopes, which scan the sky for radio frequencies.

The problem is, the signal in an individual pulsar is very difficult to detect, Vigeland said. A massive gravitational wave moves relatively slowly, taking months, years or even decades for a single wave to rise and fall.

"The signal slowly gets louder as we add more pulsars and more data," she said. "In the frequency we are looking at, the loudest signal is the sound of all of them together, called the gravitational wave background."

That is what NANOGrav members believe they have detected.

Spacetime stretching and compressing

NANOGrav's most recent dataset includes analysis of 68 millisecond pulsars, each of which is observed roughly monthly, some for more than 15 years.

This dataset contains evidence that spacetime is stretching and compressing over these long timescales, Vigeland said, which is consistent with slowly undulating gravitational waves passing through our galaxy. Scientists are describing this background as a "hum" that hasn't been found in NANOGrav data before now.

David Kaplan and Sarah Vigeland lead UWM's NANOGrav research team. UWM was one of the original members of this Physics Frontier Center, funded by the National Science Foundation. (UWM Photo/Elora Hennessey)

The work was published June 29 in a set of papers in **The Astrophysical Journal Letters**.

In 2015, an international team of astronomers that included some at UWM found "high-frequency" gravitational waves, using ground-based facilities in the U.S. called the Laser Interferometer Gravitational-wave Observatories (LIGO).

Unlike low-frequency waves, high-frequency gravitational waves come from the collisions of small black holes and neutron stars with masses no greater than our sun and they happen on much shorter timescales. The data that each kind of wave can provide complement one another, Vigeland said.

UWM's team

More than 190 scientists comprise NANOGrav, a Physics Frontiers Center funded by the National Science Foundation. Vigeland and David Kaplan, UWM professor of physics, lead the current UWM group: postdoctoral researchers Joe Swiggum, Abhimanyu Susobhanan and Megan Jones; doctoral students Alex McEwen, Gabriel Freedman, Shashwat Sardesai and Gabriella Agazie; and Administrative Specialist Tonia Klein.

"It's a pretty big deal," Agazie said. "It will eventually tell us a lot of cool stuff about the universe that we don't yet know."

Agazie has been studying individual pulsars to determine exactly when the pulses should be arriving on Earth. By modeling each pulsar's characteristics, such as where it is in the sky, researchers can predict the pulse arrival time.

A native of West Virginia, Agazie became interested in astrophysics because the Green Bank Radio Telescope, one of the telescopes used in NANOGrav, is located there. Her role is the first step in the NANOGrav experiment described in the papers.

Future detections

The second is to look for interruptions in the pulse arrival times that could signal a possible gravitational wave detection.

"What a gravitational wave is doing is bending or stretching spacetime between us and the pulsar," said Freedman, who worked on this part of the experiment. "We are trying to see if we can eke out the gravitational wave signal from all other possible sources of noise that could cause these pulse delays or advances."

What happens next? Freedman is optimistic.

"With more time and more data, we're able to see these signals with more clarity," he said, "but I don't think it will be another 15 years before we see something new. Where I see this research going is we might be able to identify individual super-massive black hole binary sources that make up this background."

By Laura Otto, University Relations

The UWM research team working on NANOGrav is: (back row from left) Gabriella Agazie, Tonia Klein, Assistant Professor Sarah Vigeland, and Megan Jones; (middle row from left) Professor David Kaplan and Nihan Pol; (bottom row from left) Shashwat Sardesai, Gabriel Freedman, Alex McEwen and Joe Swiggum. Not pictured is Abhimanyu Susobhanan. (UWM Photo/Elora Hennessey)

Women's violent work: Italian professor's new translation tells the story of 'Tina, Mafia Soldier'

What you need to know:

- UWM Italian professor Robin Pickering-Iazzi just finished a translation of the 1994 book *Tina, Mafia Soldier*.

- The book tells the story of a young woman who joined the armed wing of the Mafia.

- The book is based on the life of a woman in the *Cosa Nostra* Mafia and shows how some women gain respect through violence.

At age eight, Tina watches as her father, a small-time mafia boss, is gunned down in the family's home. Angry and desperate to take back control of her suddenly-upended life, Tina begins training to make her own entry into the mafia. But she's not interested in quietly working in the background: She wants to be one of the soldiers.

That's the premise of the novel **Tina, Mafia Soldier**, written by Italian author Maria Rosa Cutrufelli and newly translated by a UW-Milwaukee professor.

Robin Pickering-Iazzi is a faculty member in UWM's Global Studies Department, where she teaches in the Italian Studies program. Her research focuses on Italian literature and culture, including organized crime. Though *Tina, Mafia Soldier* was originally published in 1994, Pickering-Iazzi's translation has breathed new life into the work, and new interest in how young women are rebelling against social norms in violent ways.

Here are three things you need to know about *Tina, Mafia Soldier.*

1. The story and its backstory are violent.

Tina, Mafia Soldier is written from the perspective of a former teacher who is an author. When newspaper articles about Tina's bloody rise to gang leadership capture her attention, the narrator is compelled to write a book about this *masculidda*, or "tomboy." Told through a series of interviews with Tina's lawyer; her family; a *carabiniere*, or police officer; and others, the book ends when the narrator and Tina finally come face-to-face for an explosive meeting of their own.

Robin Pickering-Iazzi

It's unusual for novels about the Mafia to focus on women characters, much less women who undertake violent roles in it. But then, the book's inspiration was anything but typical. The work is based in part on the life of Emanuela Azzarelli, who has made waves in her hometown of Gela in Sicily. Her father was a Mafia boss who, like the character Tina's father, was murdered when Azzarelli was a child.

"So, she decides to take up a gun," Pickering-Iazzi said. "This is the difference between her and so many other women (in the Mafia) who are the accountants, or who gather extortion money. She wanted to be a part of the armed wing of *Cosa Nostra*, be a soldier doing the killing and the fighting."

And she did. Pickering-Iazzi points to newspaper articles from the 1980s detailing the exploits of the young woman who was dubbed the "Bonnie of Gela," as in "Bonnie and Clyde." Cutrufelli drew inspiration from those clippings and even visited Azzarelli in jail to interview her – with interesting consequences.

When the book was published, the mayor of Gela invited Cutrufelli for a celebration event to mark the book's debut and revive cultural life in Gela.

"Before the event started, Emanuela came up in her steel-toed boots and camouflage, grabbed Maria Rosa (Cutrufelli), and threw her to the ground, kicking and punching her," Pickering-Iazzi said. "The *carabinieri* came to grab Emanuela and take her away. Maria Rosa, who is incredible – nothing will stop her – perched her broken glasses on her face and the event went on."

In fact, Cutrufelli declined to press charges. When a *mafioso* is imprisoned, Pickering-Iazzi explained, they gain more credit in the eyes of their compatriots, in essence moving up the rungs of the Mob's ladder. Instead of adding to Azzarelli's clout, Cutrufelli and the mayor of Gela took her to dinner and thoroughly explained the difference between the fictional character of Tina and the real Azzarelli.

"Later, Maria Rosa found out that one of the reasons that Emanuela beat her up so badly … was that she wanted to regain part of her reputation that she lost by giving that interview to Maria Rosa when she was in prison," Pickering-Iazzi added.

Azzarelli continued to contact Cutrufelli for years afterward until Cutrufelli was forced to change her phone number.

2. When young women are denied power, sometimes they take it by force.

Women have played an integral, if quiet, part of organized crime for centuries, Pickering-Iazzi said. They have often been accountants and loan sharks. They run prostitution and gambling rings. But they do not join the Mafia's armed ranks, which is what makes Azzarelli – and the character of Tina – stand out.

"Gela was very interesting for this, because there were several (women) who started out as young teenagers in these roles, wanting to be the soldiers with that violence," Pickering-Iazzi said. She speculates that the girls were frustrated with social mores and a culture that disregards women – among the Mafia, domestic abuse is rampant.

"(In this book), you see the elements in society, politics, and culture that contribute to a growing phenomenon of young girls who, because they can't express themselves in other ways to get respect, see that the only way to do so is through violence, to gain respect by creating fear in others, sometimes by wielding a gun," Pickering-Iazzi said.

It's a theme that rings true even today, throughout the world. Pickering-Iazzi recalls stories of American teenage girls who have driven their classmates to suicide through vicious bullying campaigns – a different sort of violence, but no less deadly.

3. Translation is difficult but rewarding work.

Pickering-Iazzi has been met with plenty of interest in *Tina, Mafia Soldier,* but she admits she decided to take on the job of translating the novel for selfish reasons: "I'd love to teach it in class," she joked.
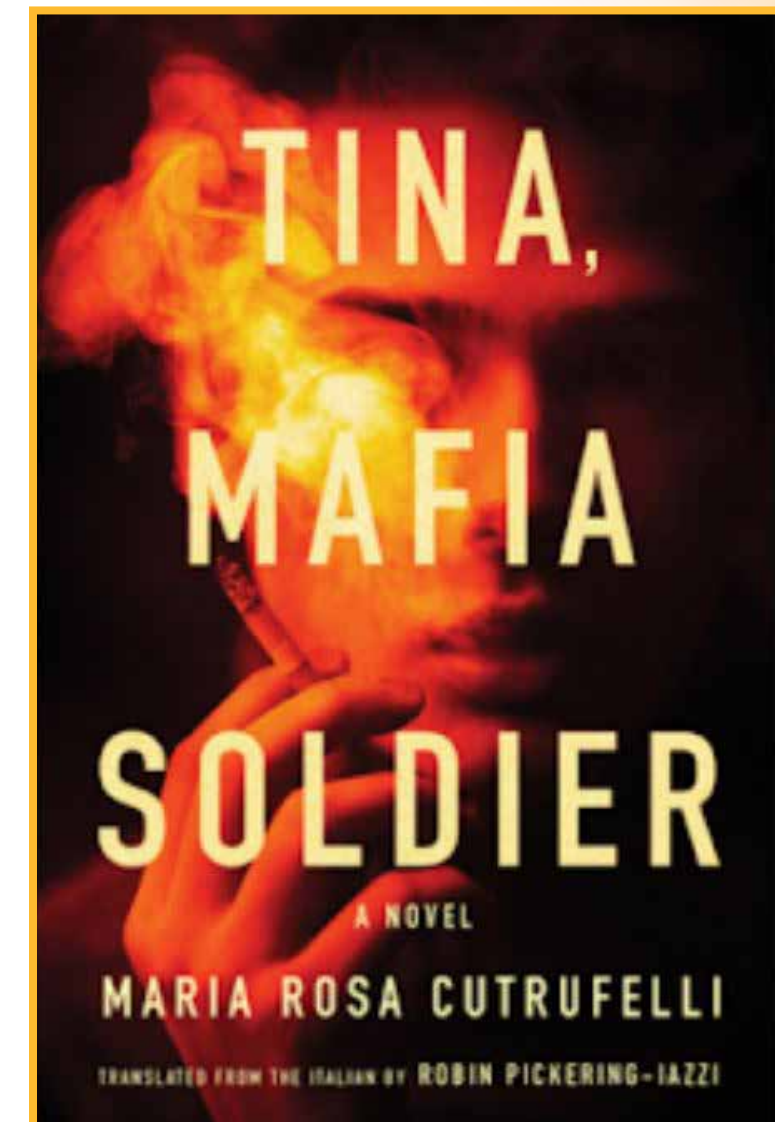
Tina, Mafia Soldier

"Whether it's in a course on the Italian mafias, or on Italian women writers, or the Italian diaspora," she added. "It's not a story that focuses solely on the Mafia. … Instead, you have these wonderful passages about Sicily, the land, the people from different socio-economic classes, the food."

The tricky part of translating such a rich text is conveying all of the meaning, nuance, and even idioms of Italian in a way that English-reading audiences will understand and appreciate. To that end, Pickering-Iazzi said she tries to stay faithful to the text. For phrases or passages that don't directly translate, she'll try to find an English image or metaphor close to the original Italian.

She also had help: Pickering-Iazzi has been friends with Maria Rosa Cutrufelli since the two met at a conference on Italian feminism in the 1980s. Cutrufelli gave her blessing when Pickering-Iazzi asked if she could translate *Tina, Mafia Soldier*. That meant the pair could work together when it came to some of the trickier aspects of translation.

"There were certain historical events that were alluded to in the novel that Italian readers would have known … and American readers would have thought, 'What's going on here?'" Pickering-Iazzi recalled. "In those cases, Maria Rosa was in agreement that I would add in some context within the narrative. … I mimicked the style of Maria Rosa and inserted a bit of new text."

It worked; the book has generated plenty of media buzz and was included on CrimeReads' **"Most Anticipated Crime Fiction of 2023"** and Crime Fiction Lover's **"Most Wanted Crime Novels of 2023"** lists.

Tina, Mafia Soldier is available from retailers like **Amazon**, **Penguin Random House**, and **Barnes and Noble**.

By Sarah Vickery, College of Letters & Science

Mathematical models put food in mouths: Math student's research aids local food banks

> **What you need to know:**
> - Gavin Sayrs is a double-major in Mathematical Sciences and German.
> - For his undergraduate research project, Sayrs used Hidden Markov Chains to help food pantries predict how much food they will take in and give away each month.
> - Using these equations may help food pantries manage their inventory more effectively.

Food pantries have an inventory problem.

Each month, a food bank receives any number of visitors who are experiencing food insecurity. Each month, a food bank also receives donations that go to stock the shelves. Will the pantry receive enough donations to meet the demand of its clients? Will there be surplus, shelf-stable donations they can carry over into next month? Will there be an unusually high number of clients relying on the food pantry this month? How do you answer those questions?

"The best way might be to use a Markov Chain," Gavin Sayrs mused.

Sayrs is an undergraduate research student at UWM. He is double-majoring in mathematical sciences and German, and he's also the treasurer of the Living Hope Club, a campus organization that focuses on helping Milwaukee residents living below the poverty line.

"I thought, I really enjoy charity work, and I have a club that does charity work. Why don't I take my interest in math and combine it and see what happens?" Sayrs said. "There's food going in and out of pantries constantly. How can we best help them know, in the future months, how much food they'll be receiving and how much food they might be losing?"

That was the inspiration for his undergraduate research project titled, "Local Food Pantry Hidden Markov Model Analysis." He presented his work at the **UWM Undergraduate Research Symposium** in April. He was mentored by UWM mathematics professor Chao Zhu. Sayrs relied on data supplied by the **Kinship Food Pantry** in Milwaukee.

If you've never heard of a Hidden Markov Chain, you're not alone, but it's a tool that's being increasingly used in supply-chain and logistics fields. Think of the Markov chain like a matrix with many probabilities within it. Each matrix entry shows where the probability will go over time. You can use a Markov Chain to predict a sequence of unknown (hidden) variables based on a set of observed variables.

"To summarize: Every single time a transition is made from an unobserved state to another unobserved state (it could possibly be the same state it's transitioning to), there is a signal emitted that can be seen that is the observed state," Sayrs explained.

"In our situation, the observed state is how much inflow or outflow of food we're getting. That can either be a positive number where we're receiving more food than giving out, or a negative number, where we're giving out more food than we're receiving.

"From there, we can work backwards. We're only able to see data about how much food we're receiving," Sayrs added. "We can say what state we are in currently, and we can combine this data and say what (donation levels) will look like in the next year."

In terms of inventory in a food pantry, Sayrs had plenty of observed variables, thanks to the meticulous records that Kinship Food Pantry keeps. Working with Krista Fuller, an intern at Kinship working as the Food Center Operations Coordinator, Sayrs gathered five years' worth of data showing the food bank's monthly donations and how much they served up to community members in need.

"We see that in certain months, we don't receive as much food as in other months. There's a certain inflow/outflow difference," he said. "We can record this difference by taking all of our monthly data and looking at it through a standard deviation. Is our monthly inflow/outflow within one standard deviation, meaning everything's normal? Or is it greater than one standard deviation? …From there, we can see how much food they're getting in relation to what they normally get."

With this method, Sayrs said, the food pantries can predict which months might be leaner than others. For example, September, October, and November are all months where the food pantry sees an increased number of visitors. The food pantry may want to hold back surplus food in July and August to make sure there is enough food on the shelves in the coming months, or workers might try to reserve money in their budget to address the shortfall.

There is still more research to do. While Sayrs is grateful that Kinship Food Pantry was generous in working with him ("They were so gracious," he said. "They helped out
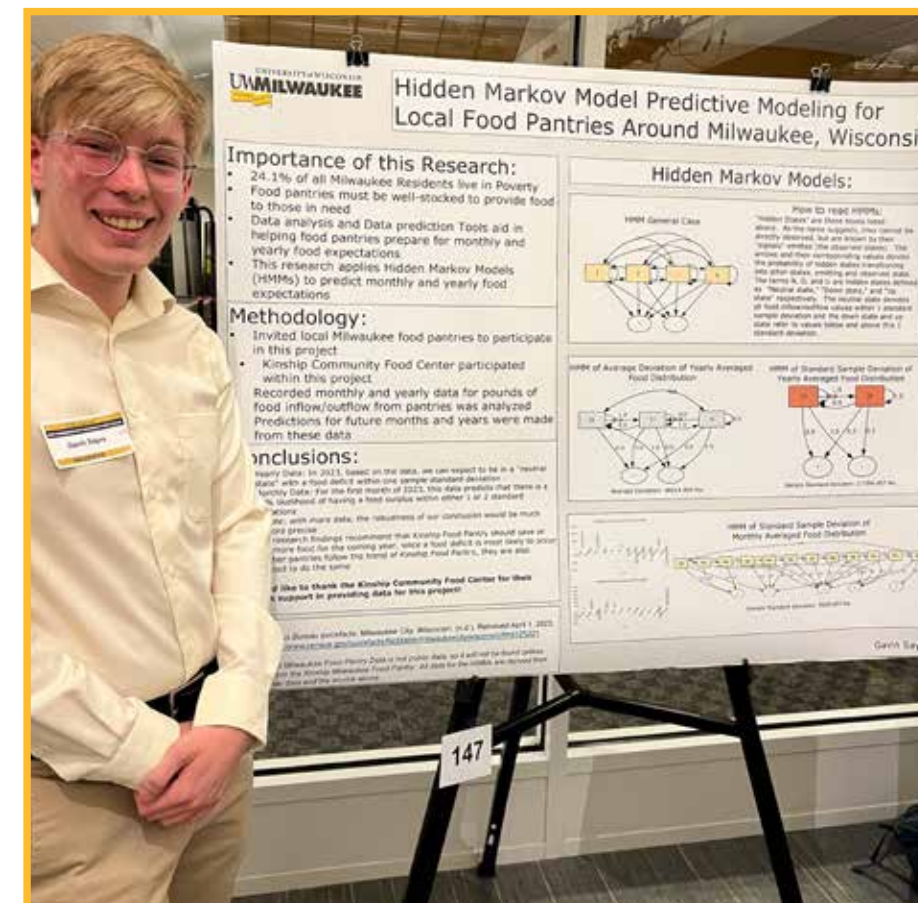
Gavin Sayrs is double-majoring in mathematical sciences and German. In April, he presented his research project at UWM's Undergraduate Research Symposium. His project uses Hidden Markov Chains to help local food pantries predict their monthly inflow of food donations and outflow of foodstuffs to their clients. Photo by Sarah Vickery.

all that they could and it was a great experience."), he wants more than just the 5 years of data they were able to provide. To really build a good model, he said, Sayrs wants to look at 10 years' worth of pantry inflow/outflow numbers.

Even so, Sayrs said he's shared his finding with Kinship Food Pantry, and hopes that other food pantries in the city can also use this method to predict inventory surpluses and shortfalls. Hidden Markov Chains are already used in weather forecasting, estimating stock market prices, and even in projecting the spread of diseases.

"I know people who get involved in working with food pantries might not have math backgrounds. They have some social science background or something like that. That's good. We need people like that," Sayrs said. "But we also need to have solid data, because that helps them do what they're best at doing."

By Sarah Vickery, College of Letters & Science

UWM helps prepare students to fill the mental health care shortage

What you need to know:

- There is a severe shortage of mental health care workers in the United States.

- The UWM Psychology Department prepares students for careers in the field through rigorous classes, field placements, and career development opportunities.

- Meet a past and future psychology major who both work in the mental health care field.

The United States is facing an acute shortage of mental health care workers.

By 2025, the U.S. Department of Health and Human Services estimates that there will be a deficit of 10,000 mental health care workers across the country. That means that thousands of Americans will have either limited or no access to mental health care – and there are many states where this is already the case.

UWM's Department of Psychology is acutely aware of the shortage, and faculty and staff are ramping up their efforts to help students prepare to join a field that desperately needs their help.

A major hurdle is helping students realize just how many opportunities there are, said UWM associate professor of psychology Deborah Hannula. Hannula is director of undergraduate studies in the Department and its associate chair.

"Something that our students need is more access to information about their next steps," she said. "We've been trying to increasingly provide students with information about professional opportunities in the context of workshops or discussion panels."

Deborah Hannula

The Department is stepping up efforts to invite professionals within the mental health care field to speak with students. The goal is to provide students with tips and tricks to navigate the job market, along with information about the educational experiences and certifications they'll need for their future jobs so that they can effectively plan for what comes after graduating with a bachelor's degree in psychology.

In addition, UWM offers many upper-level courses that will help prepare students for the workforce – classes on subjects like Abnormal Psychology, Experimental Child Psychology, Clinical Psychology, and more.

Hannula also encourages students to get involved with research. They can join faculty-directed labs and may even be awarded an undergraduate research fellowship (the SURF award) and be paid for their work.

"Getting involved in research (early on) can provide students with an opportunity to 'try it before they buy it' -- they may discover that research is not a good fit to their interests, in which case, a PsyD program or a master's level program in mental health counseling or something similar might be a better option than a PhD," Hannula said.

But the thing that might best prepare students for a career in mental health care is actually working in the field.

Field placements put students to work with organizations that address mental health issues within the community. For example, several UWM psychology students have completed field placements at Lad Lake, Sirona Recovery/COPE, and Walker's Point over the past year.

"The field placement is a great opportunity for students to step outside of the classroom and get some practical experience – a sneak-peak that will help them make informed decisions about the future," Hannula said. "Students can engage with professionals in the field, learn about their experiences, and hear about the educational and training opportunities that were instrumental in securing their current positions. Really, the professionals working in your chosen field are the best ones to speak with about a particular profession, because they've successfully navigated the landscape and they're doing it."

Not only that, Hannula added, but it also allows students to forge connections in the industry which may help them secure jobs down the line or give them someone who can write a letter of recommendation for graduate school.

For students who want to become mental health care workers, Hannula says to "Start exploring what you need to do in order to make yourself the best possible candidate for the next steps. Get a sense of what the profession is like and by completing a field placement and carve out a path at UWM that will help you realize your goals."

Many careers within the field require graduate degrees, she noted, so students should find ways to distinguish themselves in grad school applications.

There are many options for careers, too. From child psychology to psychiatry to sports psychology and beyond, Hannula hopes that her students explore all of their options so that they know which specialty is right for them.

No matter where they end up working, they'll be sorely needed.

Incoming student tells why he chose psych

Scott Sutton is about to start classes at UWM for the third time.

He originally started classes as a music performance and music education double-major, but he took time off from school to work for a major Apple store. A few years later, he went back to school, this time for engineering. He enjoyed his internships, but found himself feeling bored and unfulfilled.

But when Sutton was wandering a job fair hosted by UWM's College of Engineering and Applied Science, he found a booth that seemed a bit out-of-place: Roger's Behavioral Health was recruiting.

"I was like, what the heck, let's give it a try," Sutton recalled. "I fell in love with it."

Sutton is a mental health technician at Rogers. He works closely with patients, accompanying them through the hospital, meeting their needs, assisting with therapeutic interactions, and being an ally for the patient alongside their clinical team.

"It's really rewarding because you build a strong alliance with the patients, because you're there more than anyone else on their team," Sutton said.

He also enjoys working at Rogers because he's found numerous opportunities to grow his career. For instance, Sutton trained

Scott Sutton

Alum explains the barriers and joys of the job

Tessa Stevenson

When she was a teenager, Tessa Stevenson regularly attended therapy. She enjoyed her sessions and liked her therapist, and each time she went, she got a little more curious.

"I remember thinking, could I be the person sitting in the chair on the other side of the room?" Stevenson said.

Today, she is.

Stevenson is a licensed professional counselor (LPC) at New Prospects Counseling Services, where she works with clients to address depression, trauma, grief, interpersonal issues, and more. Stevenson, who uses she/they pronouns, is queer and is especially interested in working with LGBTQ+ individuals.

She's also a UWM graduate who majored in psychology before she earned her Master's degree from Marquette University. She was always interested in psychology, but when she took a freshman seminar with associate professor of psychology Deborah Hannula during the first year at UWM, she knew she had found her major, and a mentor.

That relationship has lasted; earlier this year, Hannula invited Stevenson to sit on a panel for UWM students that discussed career options in the mental health care field. With the U.S. facing a shortage of workers, the job outlook

Scott Sutton

to be part of Rogers' Community Learning and Engagement team that teaches stigma reduction and compassion resilience for health and human services workers. The team helps professionals and caregivers maintain their wellbeing and cope with secondhand trauma. Sutton is also training to be a substance abuse counselor, though he primarily works with adolescents now.

But Sutton wants more.

"I figured that to continue advancing, I should probably have the same level of education as most of my coworkers," he joked. And so, Sutton will be entering UWM one more time, this time as a psychology major.

"I feel like there's so much more I can learn," he added. "Working with my patients, every day I get new questions that I want answered. I'm seeking out that knowledge so I can understand them even better, and in some ways, understand myself."

With his experience in the field, Sutton has seen the impact of the mental health care worker shortage first-hand. Staffing was a critical issue during the COVID-19 pandemic, but he said he's seen signs of hope: Rogers has been hiring more staff and he's noticed an eagerness among his new coworkers.

He has some advice for the new staff, and any students who may want to enter the field themselves.

"One thing it takes to be successful is the willingness to own your mistakes," he said bluntly. "You're going to make mistakes. You're going to say the wrong thing to a patient. … If you aren't willing to have grace with yourself, then it's going to be hard to have grace with others."

You also need to use draw on all of your experience. Sutton frequently finds himself relying on the skills he learned at his previous jobs – skills like managing difficult personalities and juggling multiple responsibilities, to name a few.

Yes, it can be a hard job. There's no denying that mental health care workers are at risk for burnout, and constantly seeing people grapple with sickness and trauma can be demoralizing.

But for Sutton, it's rewarding to be there for someone in a time of crisis.

"Remember that everyone has bad days," he advised. "You're the one that's going to be there for them. They're counting on you."

By Sarah Vickery, College of Letters & Science

Tessa Stevenson

is rosy for students who are interested. But, Stevenson said, there are some challenges to establishing this type of career.

One of the biggest barriers to entering the mental health care field that Stevenson sees is that students just don't know how.

"It's really difficult to find information," she said. For instance, licensing requirements vary by state. The designations used in Wisconsin are different from those used in Illinois and other states, "So you can't necessarily Google the information because there are little pockets of incongruency," she said.

Graduate school is another hard sell. Pursuing more education can be intimidating and expensive, Stevenson noted.

And once mental health care workers are in the field, it can be a challenge to keep them there. Stevenson completed her graduate work and training during the COVID-19 pandemic, when health care workers of every stripe were experiencing severe exhaustion and burnout. Turnover was, and in many places still is, high as workers leave the field to pursue jobs that are less emotionally taxing or have better work/life balance.

But even though there are downsides to a career in the mental health field, Stevenson loves her work.

"We can't deny that issues exist, but I think that this work is absolutely rewarding," she said. "I'm about a year into practice, and I sometimes reflect on that and I get a little teary-eyed. There are a lot of people who I hope I've helped find a clear path toward better mental health."

And, she added, there are ways to make a job work to fit your needs. Stevenson worked in hospitals and clinics as part of her training, and decided those jobs were not for her. Instead, she went into private practice so she could set her own schedule.

To be successful in the field, Stevenson said, be prepared to work on yourself. It's part of the coursework to analyze your own idiosyncracies and to check your own biases so you can best serve patients.

Stevenson loves those patients.

"The therapy relationship such a special relationship that is so different from friendships. It's so different from family or other relationships we have in life," she said. "It is something I value and love so much."

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In the Media and Around the Community

Jeffrey Sommers (African and African Diaspora Studies and Global Studies) penned an op-ed alongside Michael Rosen in the **Milwaukee Journal Sentinel** titled, "Not taking federal dollars to expand Medicaid in Wisconsin puts health of thousands at risk." He also analyzed an aborted rebellion amongst Wagner troops in Ukraine in a piece published by **Brave New Europe**.

The **Washington Post**, **CBS 58 News** and the **Scientific American** spoke with **Sarah Vigeland (Physics)**, who explained the significance of the NANOGrav collaboration's discovery of low-frequency gravitational waves that make a "background hum" in the universe. She also talked about the importance of pulsars in this research with **Quanta Magazine**, and explained the outline of the research for **Salon**. She talked about the next steps on **Yahoo.com**.

A summer with snakes? Undergraduate student **Hassan Richardson (Conservation and Environmental Sicence)** spoke with **Spectrum 1 News** about his internship with Nearby Nature, an organization currently tracking garter snake populations in Milwaukee.

Sales taxes are regressive, meaning that people making less money will have to pay a larger percentage of their income in sales tax, **James Peoples (Economics)** explained on **TMJ4 News**.

The **Los Angeles Review** published a poem by **Mary Thorson ('14, BA English)** titled, "Time & Sound."

Juneteenth marks the day that enslaved people in Galveston, Texas, were told news of the Emancipation Proclamation, a declaration freeing slaves issued some two years before. **Derek Handley (English)** spoke of the day's significance in an article by the **Anadolu Agency**.

You can't see them with your naked eye, but particles from the Canadian wildfires are floating in the air around Milwaukee, **Neal O'Reilly (Conservation and Environmental Science)** said in the **Milwaukee Journal Sentinel**.

As new cases loom before the Wisconsin State Supreme Court, the **Milwaukee Journal Sentinel** turned to **Sara Bensh (Political Science)** to predict what cases the court may hear.

As people celebrated Juneteenth in Milwaukee, **Robert Baker (African and African Diaspora Studies)** explained the history of the holiday on **WUWM Radio.**

Did you know that the QWERTY keyboard was invented in Milwaukee? **Jason Puskar (English)** delivered a talk titled "150 Years of the QWERTY Keyboard" at the city's **QWERTYFEST**, held in June to mark the 150th anniversary of the device's invention.

Kathryn Reuter ('21, MA History) spoke with FineBooks & Collections about her job as an academic outreach coordinator at the University of Iowa, providing instruction and outreach services for Special Collections & Archives and the University of Iowa's Stanley Museum of Art.

Laurels and Accolades

UWM won a 2023 **GoAbroad Innovation Award** in honor of its new Black Lives Matter Class and Study Abroad experience. The class, called "**Black Lives Matter: A Global Comparative Study**" is a two-week immersive study abroad in London that focuses on the Black experience in the United States and the United Kingdom. The class was developed with the help of an IDEAS (Increase and Diversify Education Abroad for US Students) grant by the U.S. Department of State and in collaboration with CEA CAPA Education Abroad.

Mike Allen (Communication) was included on **Research. com's** 2023 Ranking of Best Scientists in Psychology. The website, which is dedicated to connecting scientists and academics with research and conference opportunities and with like-minded researchers, ranked Allen at 2,214 in the U.S. and 3,852 in the world.

Alumni Accomplishments

Wendy WImmer ('08, MA English) was featured in the **Green Bay Press Gazette** as part of the publication's "Lit Wisconsin" sereies highlighting the work of writers of Wisconsin. Wimmer is the author of the acclaimed short story collection "Entry Level." The stories in the book focus on people battling low wages, underemployment, and overwork.

Janet Fitch ('99, MA Mass Communication) was the guest speaker at an event at the **Campbell County Public Library** in Gillette, Wyoming. The Library hosted a showing of the first episode of the "Most Dangerous Women" education series. Fitch is the series' producer. The series features little-known women changemakers labeled as "dangerous" in their time.

Jonathan Richie ('15, BA Journalism, Advertising, and Media Studies) was hired as a reporter and assistant editor at **The Oshkosh Herald**. He previously worked as a reporter and photographer at the *Portage Daily Register* in Portage, Wisconsin.

Chad Cotti ('06, PhD Economics) has been appointed as the Department Chair of Agricultural, Food and Resource Economics at **Michigan State University**. This is a five-year term wherein Cotti will work with both the university's faculty and outside stakeholders to further relationships between the institution and the state of Michigan. Cotti's research focuses on the economics of risky behaviors, food security policy and labor market policy.

Chad Cotti

Jose Dalisay ('91, PhD English) was the featured speaker at Gateway Gallery's **KulturaSerye** Talk in Araneta City in the Philippines in June. His talk focused on "The Writer as Liberator". Dalisay is the author of more than 40 books of fiction and nonfiction and taught at the University of the Philippines.

UWM physics professor David Kaplan cuts the cake celebrating NANOGrav's recent publication detailing the discovery of low-frequency gravitational waves by using pulsars (see Page 4). Physics Assistant Professor Sarah Vigeland looks on. (UWM Photo/Elora Hennessey)