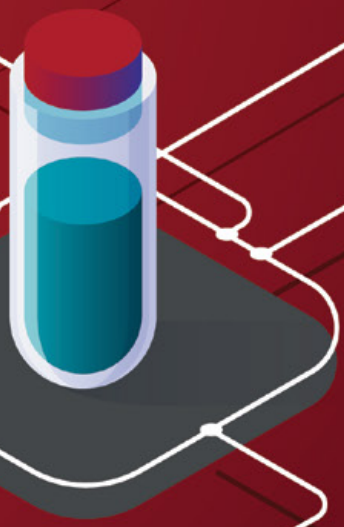
Graduate Studies &
Postdoctoral Education

Annual Report
2024-2025

EDUCATING INNOVATORS, ELEVATING IMPACT



UNMC

Contents

A Message from **the Interim Dean**

It is my pleasure to share this annual report, highlighting another extraordinary academic year. This year's report features the many accomplishments of UNMC's graduate students, postdoctoral scholars and faculty members, serving as a testament to our collective achievements and growth.

From groundbreaking inventions, to transformative research and future-forward initiatives, our trainees and mentors make an impact inside and outside the classroom and laboratories. They embody UNMC's mission to lead the world in transforming lives to create a healthy future for all individuals and communities.

During the 2024-25 academic year, our faculty excelled in scholarly activities with over 1,737 peer-reviewed publications, book chapters or government reports and more than 183 conference or invited speaker presentations. Our students, postdocs and faculty remain a driving force behind UNMC innovations with more than 22 patents.

I am deeply grateful to our Graduate Studies and Postdoctoral Education communities for your scholarship and tireless passion. Together, we elevate health science education toward an odyssey of extraordinary innovation, academic distinction and societal impact.

Karen Gould, PhD
Interim Dean of Graduate Studies

Our **Mission**

Graduate Studies

Our mission is to be the best place in the nation for training graduate students through exceptional health science educational and research programs, faculty mentoring and professional skills development.

Postdoctoral Education

Our mission is to promote and facilitate outstanding training and education of postdoctoral scholars and their timely transition toward independent careers.

Training the next generation of scientists

10 doctoral degree programs

12 master's degree programs

14 specializations in 2 interdisciplinary umbrella programs

5 certificate programs

Support for Graduate Studies

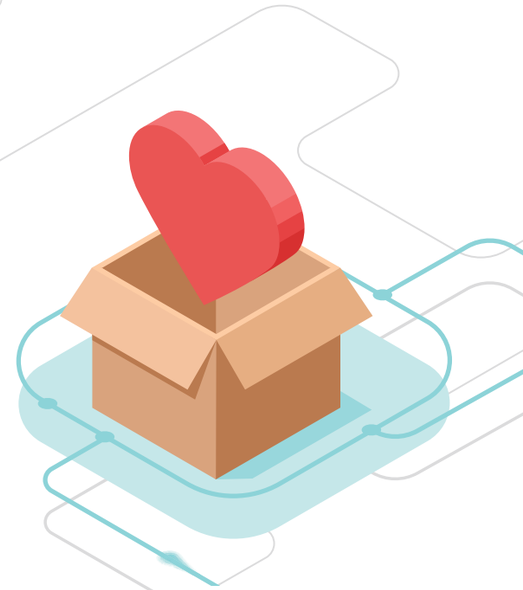
Be the catalyst to turn ideas into cures

From helping faculty design clinical trials for new medicines, to exploring cures for cancer or developing new diagnostic tools to transform care, graduate students are the backbone of innovation at UNMC.

It is through the generosity of donors that Graduate Studies is able to compete for and support the best students, while empowering them to focus on research that leads to life-changing breakthroughs.

The University of Nebraska Foundation offers many opportunities to make a difference in the lives of graduate students, including fellowships, scholarships and more.

Learn more at
go.unmc.edu/support-gradstudies



Leadership

Graduate Studies

Karen A. Gould, PhD
Interim Dean of Graduate Studies

Jered Garrison, PhD
Interim Assistant Dean of Graduate Studies

Terri A. Vadovski
Director

Postdoctoral Education

Iqbal Ahmad, PhD
Associate Dean, Academic Affairs
Director, Postdoctoral Education
and Research

A note of gratitude to Kendra K. Schmid, PhD, for her leadership as interim dean for Graduate Studies from 2024-2025.

Graduate Council Members & Staff

Graduate Council, in conjunction with the Dean, is responsible for Graduate College activities at UNMC.

Karen A. Gould, PhD
Interim Dean for Graduate Studies
(2025-Present)

Kendra K. Schmid, PhD
Interim Dean for Graduate Studies (2024-2025)

Iqbal Ahmad, PhD
Associate Dean, Academic Affairs

Evie Ehrhorn
Graduate Student Association President

Mark D. Shriver, PhD
Applied Behavior Analysis (MS)

Sushil Kumar, PhD
Biochemistry & Molecular Biology (MS)

Jenenne A. Geske, PhD
Biomedical Informatics

Christopher S. Wichman, PhD
Biostatistics

JoEllyn M. McMillan, PhD
Environmental Health, Occupational Health & Toxicology

Ariane Rung, PhD
Epidemiology

Tanya M. Custer, PhD
Certificate in Applied Health Informatics
Certificate in Quality Improvement
Health Professions Teaching & Technology
Healthcare Delivery Science

Tzeyu Michaud, PhD
Health Promotion & Disease Prevention Research

Hongmei Wang, PhD
Health Services Research, Administration & Policy

Matthew C. Zimmerman, PhD
Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS)
IGPBS - Integrative Physiology & Molecular Medicine
Medical Physiology (MS)

Rebecca E. Deegan, PhD
IGPBS - Biochemistry & Molecular Biology

Michael Jordan Rowley, PhD
IGPBS - Bioinformatics & Systems Biology

Joyce C. Solheim, PhD
IGPBS - Cancer Research

Rakesh K. Singh, PhD
IGPBS - Immunology, Pathology & Infectious Disease

Kyle J. Hewitt, PhD
IGPBS - Molecular Genetics & Cell Biology

Erika Boesen, PhD
IGPBS - Integrative Physiology & Molecular Medicine
Medical Physiology

Keshore R. Bidasee, PhD
IGPBS - Neuroscience

Justin L. Mott, MD, PhD
MD-PhD Scholars

Samantha M. Simet, PhD
Medical Anatomy (MS)

Gargi Ghosal, PhD
Molecuar Genetics and Cell Biology (MS)

Laura D. Bilek, PhD
Medical Sciences Interdepartmental Area (MSIA)

Nicole M. Rodriguez, PhD
MSIA - Applied Behavior Analysis

Joshua L. Santarpia, PhD
MSIA - Biological Defense & Health Security

Anthony Podany, PhD
MSIA - Clinical & Translational Research Mentored Scholars Program

Carol A. Casey, PhD
MSIA - Clinically Relevant Basic Research

Sharon J. Medcalf, PhD
MSIA - Health Practice & Medical Education Research

Thomas M. Petro, PhD
MSIA - Oral Biology

Ka-Chun (Joseph) Siu, PhD
MSIA - Patient-Oriented Research

Roxanne Vandermause, PhD, RN
Nursing

Luis A. Marky, PhD
Pharmaceutical Sciences

STAFF

Terri A. Vadovski
Director

Jamie Sorenson
Graduate Studies Specialist

Kayla Lorenzo
Graduate Studies Specialist - Admissions

David Crouse
Graduate Studies Wellness Advisor

Alice Schumaker
Graduate Studies Wellness Advisor

STUDENTS RISING ABOVE THE REST

727

students enrolled in fall 2025

Graduate Studies the third largest student body at UNMC.

52

different countries represented

Students come from all over the world, with **37%** of students being international; **44%** of domestic students are from Nebraska.

158

students graduated

In 2024-25, **82** students earned a doctorate, **70** earned a master's degree and **6** earned a certificate.

Success throughout the year

Student Accomplishments at a Glance

$1,433,675
intramural fellowship funding, including supplements

$2,112,103
in external fellowship funding

$66,796
in travel awards with 96 awards

451
peer-reviewed publications, book chapters or government reports

32% of publications listed students as first author

1,394 hours of service-learning activities

Digital badging now available in the following:

- Leadership
- Teaching and Mentoring
- Teaching Online

563
conference presentations

170
national, regional and local honors

12
patents applied for or approved

Honors & Recognition

Total # of Students who have been recognized as New Graduates of Distinction since 2013:

97

Taylor Burke

IGPBS – Immunology, Pathology and Infectious Disease

Honor: NIH Ruth L. Kirschstein NRSA Individual Predoctoral MD/PhD Fellowship (2025-2029)

Rahul Dogiparthi

IGPBS – Bioinformatics and Systems Biology

Honor: American Society of Hematology Graduate Hematology Award (2024-2026)

Abigail Hall

IGPBS – Immunology, Pathology and Infectious Disease

Honor: AHA Predoctoral Fellowship (2025)

New Graduate Students *of* Distinction

Students who received national or international recognition

87 students received
– **97** NATIONAL AWARDS –

Mark Primeaux

IGPBS – Biochemistry & Molecular Biology

Honor: NIH Predoctoral to Postdoctoral Fellow Transition Award (2024-2030)

Megan Ramirez

IGPBS – Neuroscience

NIH Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience Award (2024-2030)

Natalia Santos

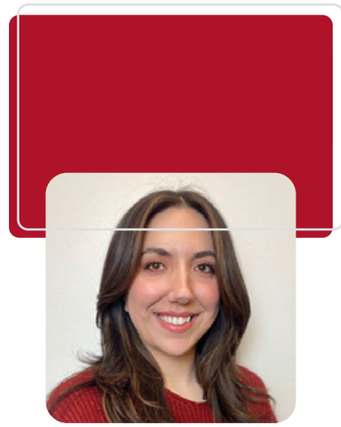
Health Promotion

USDA National Institute of Food and Agriculture Predoctoral Fellowship (2024-2026)

Meg Schaefer

IGPBS – Molecular Genetics and Cell Biology

Honor: NIH Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (2025-2026)



DERRY-COURSE
Emerging Leader Awards

HONORS FROM THE
UNMC Alumni Association

Distinguished Alumnus

Virginia Aita, PhD

PhD: 1985
Emeritus Professor, UNMC College of Public Health

Mid-Career Achievement

Jason Wilken, BS, PhD, MPH

PhD: 2004
Field Officer, U.S. Centers for Disease Control and Prevention, California Department of Public Health

Early Career Achievement

Keenan Hartert, PhD

PhD: 2018
Associate Professor, Minnesota State University

Mentorship AND Meaning:

Jake Jungwoo Son Receives 2025 Praesto Award

For Jake Jungwoo Son, paying it forward to others is an essential part of his own success. That philosophy has shaped his years at UNMC and is one reason he was selected as the recipient of the 2025 Praesto Award, the highest honor conferred by Graduate Studies on a graduating student.

Originally from San Diego, Calif., Son earned his BS in biomedical engineering from Duke University. He came to UNMC in 2019 to join the MD-PhD program, and participated in the IGPBS-Neuroscience subplan during his PhD training. Over the past six years, his academic work has focused on understanding typical developmental patterns and how this knowledge can support earlier intervention in mental health disorders.

The combination of scientific inquiry and a desire to improve patient care has guided his training.

The Praesto Award is given annually to an outstanding graduate student in recognition of exceptional accomplishments across academics, research, leadership, service, and outreach. Son described receiving the honor as "a reflection of all the time, support and generosity of the people who have helped me become who I am."

A recent clinical rotation helped Son appreciate the connection between his scientific and clinical experiences. "I hope to establish more direct links between my scientific and clinical training for instance, bridging the gap between different types of electrical brain stimulation that are done in research during graduate school and in the hospital for patients with treatment-resistant psychiatric disorders during a rotation in North Platte."

Mentorship has been one of the most meaningful parts of his time at UNMC. Son has guided several summer scholars and research assistants, many of whom have gone on to graduate and professional programs. "They were already extremely resourceful, hardworking and collaborative students and I'm proud to have supported them during their training," he said.

He also credits his fiancé, Katherine, with helping him maintain balance and prioritize relationships and activities he enjoys. Music is one of those outlets—Son performs as a violinist in the UNMC Medical Orchestra. "I've learned to keep going to volunteering events, hanging out with friends and exploring Omaha even when I'm tempted to stay at home, because mixing things up really helps keep me excited about what I'm doing," he said.

As he prepares for the next steps in his career, Son hopes his UNMC journey encourages others to continue the tradition of mentorship. "We stand on the shoulders of giants, and our responsibility is to continue this tradition," he said. "The best thing we can do is to play a small role in helping future students."

Number of publications: **26**

Number of presentations: **30+**

Ruth L. Kirschstein National Research Service Award (F30)

UNMC Praesto Award

Mentorship Grant for Medical Students (AACAP)

Service

Gold Humanism Honor Society

Fostering the Future

SHARING Clinic

Upward Bound

UNMC Medical Orchestra and music volunteering

Shahriar Helps Develop **Rapid-Response Aerogel** to Stop Severe Bleeding

Uncontrolled bleeding is one of the leading causes of preventable death. A new breakthrough developed in the lab of UNMC's Jingwei Xie, PhD, in the Department of Surgery, may offer a life-saving solution. S.M. Shatil Shahriar, a graduate research assistant and PhD candidate at UNMC, was one of three contributors to a ground-breaking injectable nano- and microfiber aerogel that recently received patent approval.

> *"This technology was developed to provide a fast and easy way to stop life-threatening bleeding at the scene of injury within seconds, when every second counts."*

Originally from Bangladesh, Shahriar holds bachelor's and master's degrees in pharmaceutical sciences from the University of Development Alternative in Dhaka, Bangladesh and a master of engineering in chemical and biological engineering from Korea National University in Seoul, South Korea. His research focus on hemostats and wound healing, combined with his engineering background, helped bring the device to fruition.

The injectable aerogel grew out of long-standing research in Dr. Xie's lab on fiber-based biomaterials capable of changing shape and expanding. Shahriar worked with Dr. Xie and Mark Carlson, MD, to design a strong, flexible material that could expand quickly and stop severe bleeding.

"This insight led us to create a sponge-like material made from nano- and microfibers that rapidly expands inside the wound and helps control bleeding," Shahriar said.

In a preclinical swine trial simulating life-threatening hemorrhage, the material expanded rapidly, absorbed blood and controlled bleeding faster than existing methods — all without clotting drugs. The result: a flexible, effective material that can stabilize injuries and reduce blood loss, representing an important step forward in trauma care.

"These findings suggest strong potential for use in pre-hospital emergency care, where controlling severe bleeding quickly can mean the difference between life and death before a patient reaches the hospital," Shahriar said.

He emphasized that strong collaboration among clinicians, surgeons and engineers made the breakthrough possible. Clinicians helped identify severe bleeding as a major treatment challenge in emergency care, while engineers and scientists partnered closely with surgeons to design and test potential solutions.

For graduate students pursuing patents or developing advanced medical technologies, Shahriar recommends working with interdisciplinary collaborators and focusing on how technology can solve real clinical problems. He also noted the importance of understanding the patent process, manufacturability and how innovations could be used in real-life care settings.

"Strong facilities, experienced mentors and a qualified team also play an important role in translating research ideas into practical solutions," he said.

The injectable nano- and microfiber aerogel still has several development steps ahead before it can be approved for emergency room use. Next are further preclinical testing, regulatory work and, ultimately, clinical trials to assess safety and efficacy. Shahriar is confident the material will save lives and lead to additional breakthroughs.

"Beyond trauma care, this technology could be adapted for surgical bleeding control, internal injuries and emergency medical kits for first responders," he said. "We are also interested in collaborating with industrial partners to help further develop and translate this technology toward real-world medical use."

Research Collaboration Advances

Practical Solution for Frontline Protection

During the height of the COVID-19 pandemic, emergency departments faced a shortage of isolation rooms to accommodate the surge of infectious patients. Wesley Zeger, DO, executive vice chair of the UNMC Department of Emergency Medicine, developed the idea for a device to help limit exposure to infectious patient aerosols in clinical spaces. Ashley Ravnholdt, a PhD candidate in UNMC's Medical Sciences Interdepartmental Area biological defense and health security program, joined the team to help test and refine the design, contributing to a tool that could support safer clinical environments.

Ravnholdt joined UNMC after earning a bachelor's degree in biology from the University of Nebraska at Omaha. She focused on health security early, following an internship with the University of Nebraska's National Strategic Research Institute, which advances national security research, technology and subject matter expertise for the Department of Defense and other federal agencies. At UNMC, she works as part of the Infectious Disease Research Group in the Global Center for Health Security (GCHS) alongside Josh Santarpia, PhD, associate director of academic affairs for GCHS and a professor in the Department of Microbiology, Pathology and Immunology. She recently started as a postdoctoral research associate for the Department of Emergency Medicine, where she will continue aerobiology-focused research.

The 3-in-1 Oxygen Mask Modification, licensed through UNeMed, improves drug delivery while decreasing aerosolized germ spread.

"Data confirmed that this device could change the risks of a crowded clinical space."

— Ravnholdt

The innovation was developed by an interdisciplinary team that included Dr. Zeger, Dr. Santarpia and Ravnholdt, along with Thanh Nguyen, PhD; Heather Nichols, MBA; Nolan Zeger; Michael Wadman, MD; and Daniel Ackermen, BS. It attaches to a standard patient oxygen mask and connects to a hospital's built in wall vacuum, creating a vacuum for the patient's breath, Ravnholdt said. "Instead of patient breath — which may contain viruses — drifting into the shared air of a room, the device captures those aerosols at the source and safely removes them, effectively creating a personal isolation around the patient." The device was recently approved for a patent, with Ravnholdt listed among its developers.

From the start, the team understood the possibility of real world impact, which kept them motivated through challenges. "The device attaches to standard clinical masks, so knowing we were developing a tool that frontline staff would find easy to adopt also motivated me."

A defining moment came during a round of controlled testing, when the device delivered measurable reductions in aerosol spread. "Using simulated breath, we demonstrated a reduction in environmental spread, both visually and quantitatively," Ravnholdt said. "Seeing theoretical protection convert into clear data confirmed that this device could change the risks of a crowded clinical space."

Ravnholdt hopes the device can streamline patient intake during future infectious disease surges by allowing hospitals to apply isolation interventions earlier in the care process. Instead of relying solely on limited isolation rooms, clinicians could immediately reduce aerosol exposure in standard care areas, improving both safety and patient flow.

"By reducing the spread of infectious aerosols in shared spaces, we can better protect our healthcare workers, other vulnerable patients and visitors," Ravnholdt said. "It's about creating a safer environment—not just for one hospital, but for any clinical setting facing respiratory threats."

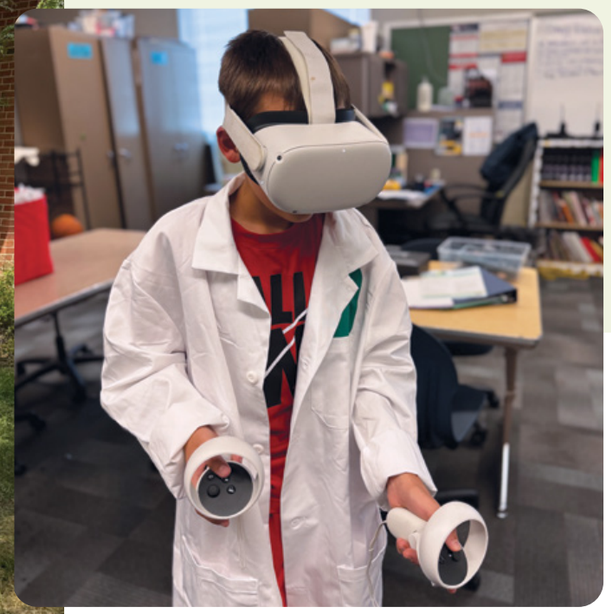
Ashley Ravnholdt,
PhD candidate

Graduate Student Association

UNMC, GSA help Morton Middle School

Students Dream BIG

"It gives them the feeling of actually being inside the laboratory, and they love it so much." — Rodney Conyers Jr.



When Mr. Rodney — that's Rodney Conyers Jr., youth development director of the Panther Pack, Morton Magnet Middle Boys & Girls Club (BGC) — visited the Omaha Children's Museum last summer, he noticed the idea of dress up was hugely impactful for kids. Putting on a uniform allowed them to dream even more deeply and immerse themselves in new possibilities.

The Boys & Girls Club engage in all kinds of after-school science activities at Morton. But Mr. Rodney thought to himself the kids could take it to another level "if they were allowed to put on lab coats and look and feel like the part of a scientist."

He immediately set about finding some scientist white coats, and he asked BGC of the Midlands director of operations Stephanie Sorensen about purchasing some. She in turn reached out to then UNMC interim chancellor, H. Dele Davies, MD, who sits on the BGC of the Midlands board.

Turns out, Dr. Davies had some connections.

And that's when UNMC and the Graduate Student Association (GSA) got involved. The graduate students organized, activated and brought in UNMC's Office of Sustainability to find these kids some coats.

It wasn't long before the kids at Morton Magnet Middle School were proudly wearing their new authentic UNMC scientist lab coats.

"These lab coats mean everything to our members here at Morton Club," Mr. Rodney said. The adults had been wanting to step up the STEM programming. The coats came just in time to give the kids' enthusiasm for science a kick start.

"It gives them the feeling of actually being inside the laboratory, and they love it so much," Mr. Rodney said. "Our members love the larger than life feel the lab coats bring and that gives them that look into what college may be like for them in the future."

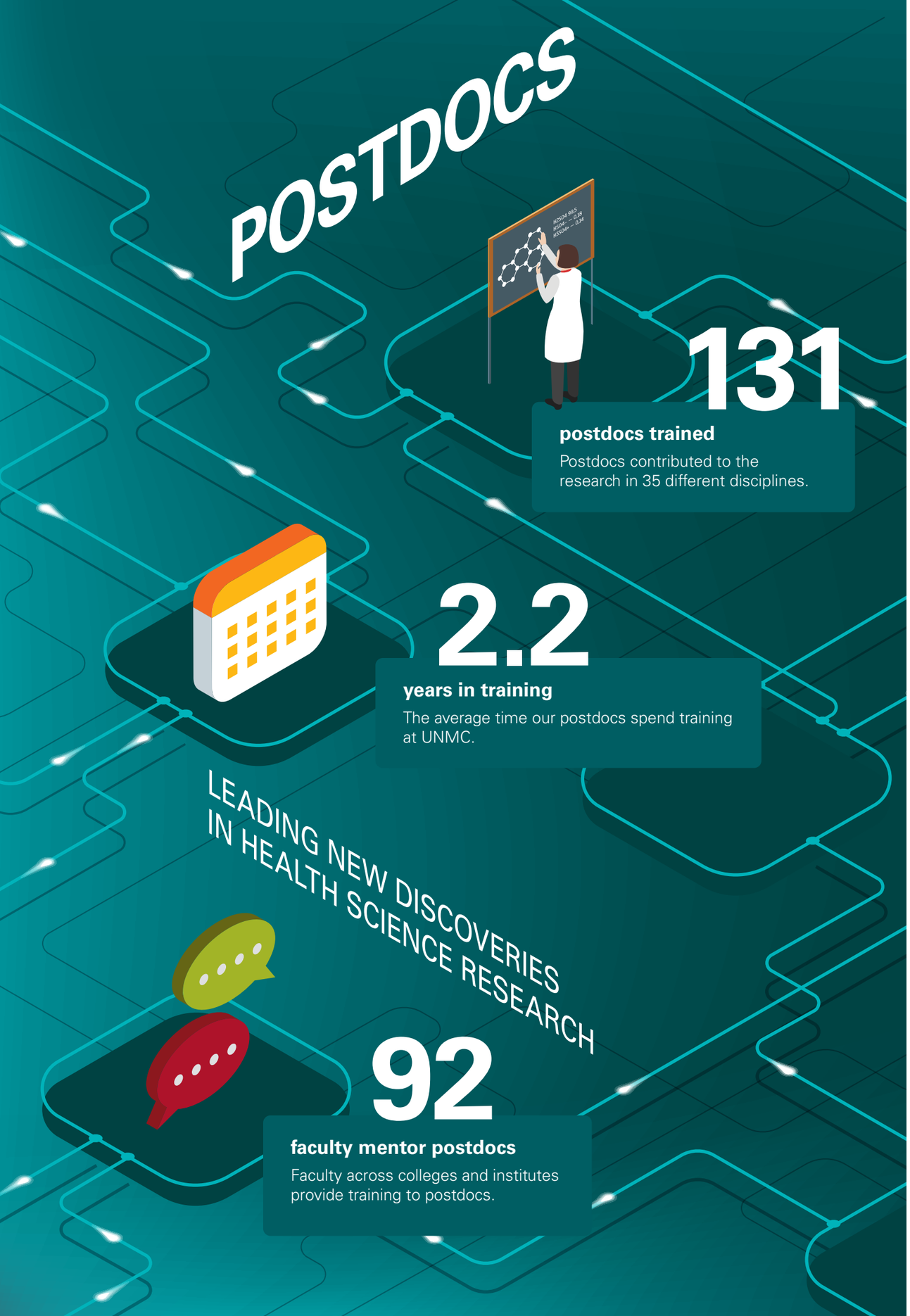
But the partnership between UNMC and Morton Boys and Girls Club was just getting started.

The GSA and UNMC Graduate Studies took part in the annual Thanksgiving-themed Family Night at Morton Magnet Middle School. The night featured togetherness, Thanksgiving dinner, turkey giveaways and science outreach.

"Graduate student volunteers demonstrated a simple DNA extraction from strawberries and spoke with students and families about the importance of genetic material and traits—such as why children often resemble their parents," said Annant Kaur, president of GSA.

"What started as an ask for lab coats from Mr. Rodney to help bring more creativity to our STEM programming has now turned into a full-on relationship between Morton Club and UNMC's Graduate Student Association, and we couldn't be more ecstatic!" reported the Panther Pack Torch Club's student newspaper Morton Monthly.

Both sides are continuing the partnership with many collaborative STEM activities in the months to come.



Success throughout the year

Postdoc Accomplishments at a Glance

$245,000
in new or continued grant funding

116
first-author publications in peer-reviewed journals

548
first-author publications in peer-reviewed journals by postdocs in the past five years (2021-2026)

60
conference presentations given

18
national, regional or local honors

Postdoc-specific training seminars
Most popular events included *"Academia and Industry: Knowing Why, When, and How to Make the Move"*

Inventors

Postdocs who have applied for or been awarded patents for their innovations

Wen Shi, PhD
Internal Medicine
Patent: **Bioprintable Hydrogel and Bioink**
Patent: **Dual-Network Tissue Adhesive for Biomedical Applications**

Johnson Vitharikunnil John, PhD
Surgery - Transplant
Patent: **Porous Nanofiber Microspheres and Methods of Use Thereof**

Bhopal Mohapatra, PhD
Genetics, Cell Biology and Anatomy
Patent: **Compositions and Methods for Testing Cancer**

Wangbin Wu, PhD
Pharmaceutical Sciences
Patent: **Compounds, Compositions and Methods for the Treatment of Diseases**
Patent: **Compositions and Methods for the Treatment of Diseases**

Sunil Kumar Boda, PhD
Biochemistry and Molecular Biology
Patent: **Nanofiber Microspheres and Methods of Use Thereof**

Abhijit Aithal, PhD | Ashu Shah, PhD
Biochemistry and Molecular Biology
Patent: **Anti-MUC4 Antibodies and Methods of Use Thereof**
Patent: **Anti-MUC16 Antibodies and Methods of Use Thereof**

Shixuan Chen, PhD
Surgery
Patent: **Nanofiber Structures and Methods of Manufacture and Use Thereof**

Dr. Angara receives postdoctoral **Excellence in Research Award**

Rajendra Kumar Angara, PhD, a postdoctoral research associate in the UNMC Department of Pathology, Microbiology and Immunology, was awarded the 2024 Excellence in Research Award at the UNMC Office of Postdoctoral Education Annual Event.

Dr. Angara was recognized for his research and presentation of "A novel bacterial effector protein mediated ER-LD membrane contacts to regulate host lipid droplets." His mentor, Stacey Gilk, PhD, in nominating him for the honor, wrote that he had produced, "the highest quality manuscript to come out of my research program thus far, in terms of the mechanistic nature, scientific rigor, novelty and impact."

Dr. Angara's work, she continued, "opens a whole new avenue of research in host-pathogen interactions and significantly impacts our understanding of the structure and function of inter-organelle contact sites and lipid droplet metabolism in cell biology."

Dr. Angara accepted the award from Iqbal Ahmad, PhD, director of postdoctoral education, and chair of the UNMC Scientific Research Oversight Committee.

Nicole Zabik, PhD, a postdoc with the Blackford NeuroScience Team at the Munroe-Meyer Institute, was recognized as a finalist for the award.

The event also featured remarks from Dr. Ahmad and Jane Meza, PhD, interim vice chancellor for academic affairs. Bennett Goldberg, PhD, professor of physics and astronomy at Northwestern University, and Sarah Hokanson, PhD, vice provost at Olin College of Engineering, delivered a co-keynote, "Creating Your Own Path."

The event also featured small group sessions for networking and scientific discussion.

Promising target for **Lung Cancer Treatment**

Postdoctoral research associate Muthamil Iniyan Appadurai, PhD, and assistant professor Imayavaramban Lakshmanan, PhD

A UNMC research team, including postdoctoral research associate Muthamil Iniyan Appadurai, PhD, and assistant professor Imayavaramban Lakshmanan, PhD, has identified a novel mechanism that may help explain not only how lung cancer evades the immune system but also uncovered a potential new therapeutic target.

Their findings, recently published in the *Journal of Clinical Investigation*, focus on an enzyme called ST6GalNAc-I, a sialyltransferase that conjugates sialic acid to proteins.

"This enzyme was highly overexpressed in both mouse lung tumor models and in human lung cancer samples, but it showed minimal expression in normal lung tissue," said Dr. Lakshmanan, assistant professor in the UNMC Department of Biochemistry and Molecular Biology and a member of the Fred & Pamela Buffett Cancer Center. "That contrast made it a strong candidate for further investigation."

Drawing on gene expression datasets and in preclinical models, the team identified two primary mechanisms by which ST6GalNAc-I promotes lung cancer progression: by facilitating tumor cells escape from the immune system, and by fueling the formation of new blood vessels, a process known as angiogenesis.

By adding a terminal sugar molecule, sialic acid, to glycoproteins such as mucin 5AC and Nectin2, it creates "a kind of camouflage," Dr. Lakshmanan said. "These sugar-coated proteins interfere with immune surveillance, allowing tumors to grow unchecked."

The research was a multidisciplinary effort involving key collaborators, including Surinder Batra, PhD, Hartmann Chair in the UNMC Department of Biochemistry and Molecular Biology and director of translational research at the Fred & Pamela Buffett Cancer Center, and Apar Kishor Ganti, MD, associate director for clinical research at the Fred & Pamela Buffett Cancer Center. "Being able to work so closely with both clinicians and basic scientists has been invaluable," Dr. Lakshmanan said.

The project began with RNA sequencing studies that highlighted ST6GalNAc-I as one of the most highly expressed genes in lung cancer tissue. Building on that discovery, Dr. Lakshmanan received a National Institutes of Health R21 grant. The team is now working to develop neutralizing antibodies that target ST6GalNAc-I modified glycoproteins.

If preclinical models continue to show promise, the therapy could move into clinical trials with support from Dr. Ganti's clinical oncology team.

For Dr. Appadurai, UNMC's collaborative environment has helped him grow as a researcher. "We're given access to cutting-edge tools and mentorship," he said. "It's a great place to grow and contribute to patient-centered science."

He expressed deep gratitude for his mentors and the collaborative environment at UNMC, noting the strong integration between basic science and clinical teams. Looking ahead, Dr. Appadurai said he plans to become an independent researcher, where he can continue contributing to cancer research and the development of new treatments.

Dr. Lakshmanan refers to this interaction as a "glyco-immune checkpoint," a novel concept inspired by existing immune checkpoint therapies.

In addition to immune evasion, the enzyme was found to play a role in nourishing tumor growth.

"We observed a significant reduction in tumor progression and cell migration when we knocked down this enzyme in our lung cancer models," Dr. Lakshmanan said. *"That was a major finding."*

The group is now partnering with a biotech company in the Netherlands to test a drug that inhibits the sialic acid glycosylation driven by ST6GalNAc-I. "We're exploring combination strategies using this drug alongside immunotherapy," Dr. Lakshmanan said. "Our goal is to enhance the efficacy of existing treatments."

FACULTY

626

faculty teach graduate students

Faculty from all **6** colleges, **2** institutes and the University of Nebraska-Omaha teach and mentor graduate students.

65

UNMC faculty newly appointed to the NU Graduate Faculty in 2024-2025

45% of graduate faculty at UNMC have worked here for **10 years** or more.

OPTIMIZING THE LEARNING EXPERIENCE FOR ALL

70%

are senior-ranking faculty

47% of UNMC graduate faculty hold the rank of professor, while **29%** are associate professors.

Success throughout the year

Faculty Accomplishments at a Glance

All data presented are self-reported.
A total of 363 responses were received.

1,621
peer-reviewed publications

1,216
boards or committees on which faculty serve

1,109
conference or invited speaker presentations

183
international, national, regional or local honors

116
book chapters or government reports

40
patents applied for or awarded

From the Graduate Student Association

Distinguished Graduate Student Mentor

Presented by the GSA to recognize faculty for their efforts in training, mentoring and helping students excel in their studies and research

Moorthy Ponnusamy, PhD
Professor and Co-Director, Graduate Program,
Biochemistry and Molecular Biology,
College of Medicine

President's Excellence Award

Faculty IP Innovation and Commercialization Award (FIPICA)

FIPICA recognizes faculty members who have developed and nurtured significant new intellectual property from concept to licensing/startup business.

Thanh Nguyen, PhD, MSN, FNP-C,
College of Medicine

Outstanding Teaching and Instructional Creativity Award (OTICA)

OTICA recognizes individual faculty members who have demonstrated meritorious and sustained records of excellence and creativity in teaching.

Betsy J. Becker, PT, DPT, PhD,
Department of Health and Rehabilitation Sciences,
College of Allied Health Professions

Innovation, Development and Engagement Award (IDEA)

IDEA recognizes faculty members who have extended their academic expertise beyond the boundaries of the university in ways that have enriched the broader community.

Károly Mirnics, MD, PhD
Munroe-Meyer Institute

Impact in Education Awards 2024–25

Innovative Practices in Education

Analisa McMillan, PhD, MSEd
College of Public Health

Inspirational Mentor of Educators

Ka-Chun (Joseph) Siu, PhD
College of Allied Health Professions

Visionary Leadership in Education

Kelly Gonzales, PhD, APRN-NP, FNP-C
College of Nursing

Dr. Laura Bilek:

A Career Defined by Discovery, Leadership and Lifelong Commitment

For more than three decades, Laura Bilek, PhD, helped shape the research and graduate education landscape at the University of Nebraska Medical Center.

Her 33-year career—spanning roles from faculty member to Medical Sciences Interdepartmental Area (MSIA) chair to associate dean for research in the College of Allied Health Professions—left a lasting impact rooted in innovation, mentorship and collaboration. "I literally worked here 33 years to the day as a faculty member," she said. "I can't think of anything I would have changed."

Her leadership in graduate education is equally influential. As MSIA chair, she worked to bring greater consistency and quality to a highly flexible program. With more than twenty subplans operating independently, student experiences varied widely. Dr. Bilek led efforts to consolidate subplans, clarify expectations and introduce foundational courses required all MSIA PhD students—changes that significantly strengthened training across disciplines.

"You invest time and energy in a young person, and pretty soon they're investing energy back in you."

Dr. Bilek's connection to UNMC began when she was still a graduate student working part time in the physical therapy department. That opportunity soon grew into a full-time faculty role. Over the years, she embraced new challenges: expanding her research, leading the MSIA program and ultimately guiding research strategy across the College of Allied Health Professions. Each transition strengthened both her expertise and the programs she supported.

A hallmark of her scientific work was her research on bone health in postmenopausal women—research she describes as deeply meaningful. "The thing I'm most proud of is that some of my research may help postmenopausal women improve bone health in the long run," she said. Her studies revealed an important insight: even when bone density does not increase with exercise, bone strength often does. "Women would ask, 'Why doesn't my DEXA scan change?' But we found that exercise strengthens the bone structurally, even if density stays the same," she explained.

Her collaboration with industry partners also contributed to the approval of a medical device to treat osteopenia in postmenopausal women—an achievement she calls one of her most meaningful contributions to patient health.

A hallmark of her career was mentorship. "I had the best mentors," she reflected. She carried that forward, investing deeply in students and colleagues. "You invest time and energy in a young person, and pretty soon they're investing energy back in you."

She also credits Graduate Studies leadership for creating a collaborative, high-functioning environment. As MSIA transitions to new leadership, she is confident in its future, particularly under Dr. Joshua Santarpia. "Josh is very well suited for this role," she said. She noted his success in building the Health Security subplan into a nationally recognized program and his experience balancing on campus and remote learning to attract top students.

Although retired, Dr. Bilek remains closely involved—serving on committees, staying active with colleagues and exploring new work in industry on bone growth surgical devices. Looking back, she calls her UNMC career "a privilege," one whose impact continues through the people and programs she helped shape.

NEWS&UPDATES

Advancing High Quality Faculty Mentorship through CIMER

The Center for the Improvement of Mentored Experiences in Research (CIMER) Entering Mentoring program is recognized nationally as the premier mentor training model and is recommended by the NIH for institutions fulfilling required T32 mentor training.

Across UNMC, engagement with CIMER continues to grow. Ten faculty members have completed facilitator training, expanding our capacity to deliver high-quality mentoring education. In addition, 354 faculty members have participated in mentor training, reflecting strong commitment to cultivating effective mentoring practices.

In the next phase of UNMC's commitment to CIMER, the university will launch three annual training sessions for new graduate faculty, ensuring mentorship excellence becomes an integral component of early faculty development.

Graduate Student **Wellness Hub**

The Wellness Hub is a space exclusively for graduate students where they can relax, take a break, connect with friends or seek guidance from one of the graduate studies specialists. Located in the Durham Research Center I, the hub includes:

- Delivery site for the Maverick Food Pantry
- Graduate Studies staff available two days per week
- Flat screen TV
- Foosball table
- Kitchen area
- Study spaces
- Art installation of student and faculty photography
- Nonperishable grocery and personal hygiene products

Connect with Graduate Studies on Social Media

Graduate Studies has expanded its social media presence, adding both Instagram and LinkedIn to better connect with students, alumni and partners and to share the impact of our community.

@UNMCGradStudies
for student highlights, events and snapshots of graduate life

UNMC Graduate Studies
for news, updates and professional engagement opportunities.

Join us online to stay connected and be part of the Graduate Studies community.

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