

**Graduate Studies
Postdoctoral Education**

Annual Report 2021 – 2022

NEW HORIZONS

ENDLESS POSSIBILITIES



1942-2022

UNMCGRADUATESTUDIES



A MESSAGE FROM THE DEAN

It is my pleasure to share the 2021-2022 annual report, featuring the many accomplishments made by our graduate students, postdocs and faculty members.

This academic year was truly unique. The pandemic continued to disrupt our ability to interact in ways we took for granted previously, yet we discovered new ways to come together and continue the high-quality work for which UNMC is known. As we learned to adapt and forge a new future, our trainees and mentors continually made an impact inside and outside the classroom and laboratories. Additionally, they excelled in scholarly activities, including awards, fellowships and publications.

Our graduate programs continue to grow, offering new fields of study, and our postdocs remain a key part of our mission to transform lives through biomedical research.

Finally, we marked a key milestone in the history of Graduate Studies, as we celebrated our 80th anniversary and advanced several key initiatives to provide trainees with world-class education and meaningful experiential learning opportunities.

Join us in celebrating the journey of some of our extraordinary faculty and trainees over the past year as we look ahead to a future of endless possibilities.

H. Dele Davies, MD, MS, MHCM
Senior Vice Chancellor for Academic Affairs
Dean of Graduate Studies



Annual Report 2021-2022

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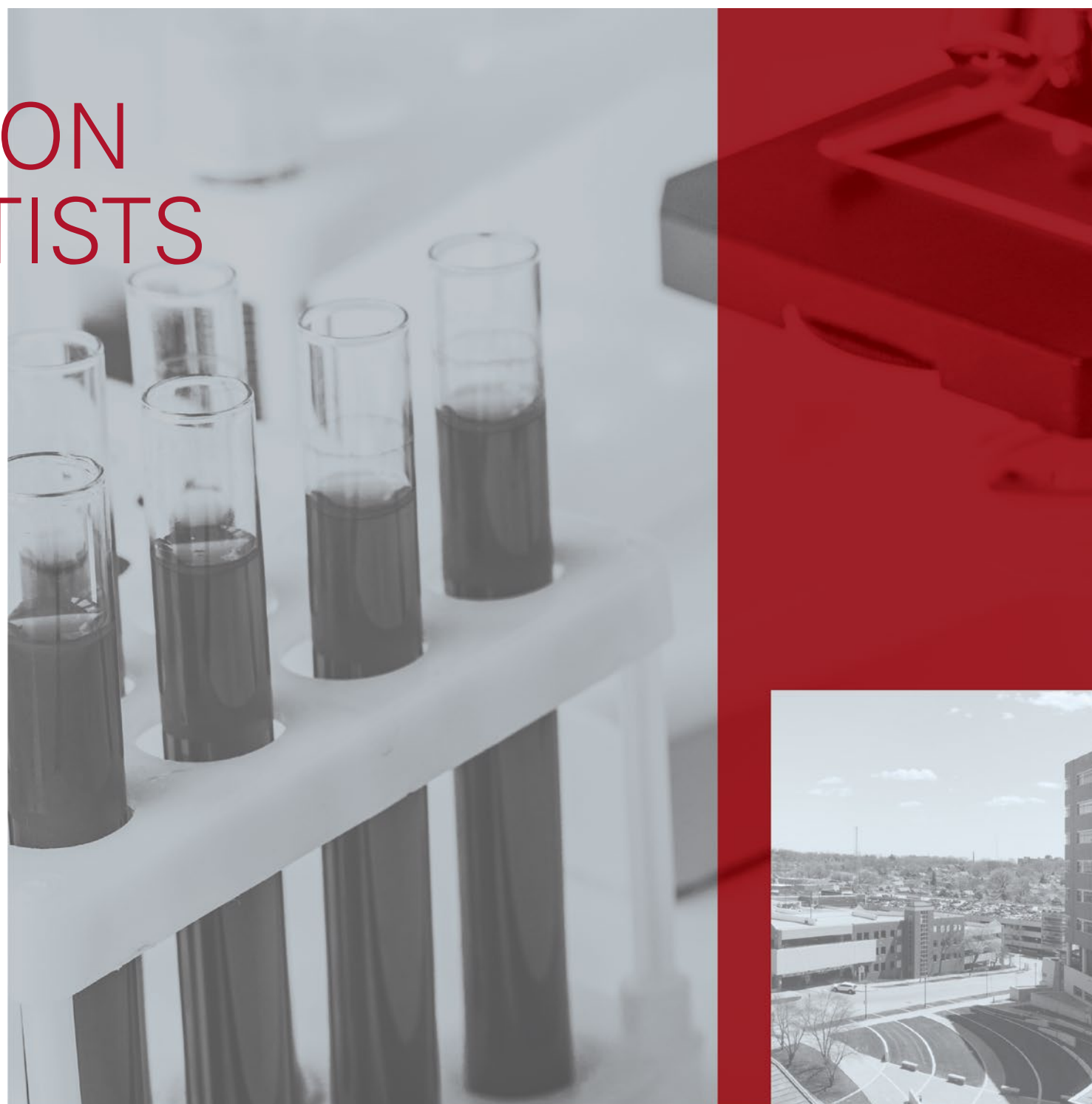
TRAINING THE NEXT GENERATION OF SCIENTISTS

10 doctoral degree programs

12 master's degree programs

14 specializations in 2 interdisciplinary umbrella programs

4 certificate programs



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.



LEADERSHIP



H. Dele Davies, MD, MS, MHCM

Senior Vice Chancellor for Academic Affairs
Dean of Graduate Studies



Kendra K. Schmid, PhD, MA

Assistant Vice Chancellor for Academic Affairs
Executive Associate Dean of Graduate Studies



Iqbal Ahmad, PhD

Associate Dean of Postdoctoral
Education & Research



Karen A. Gould, PhD, MEd

Assistant Dean of Graduate Student Success



Terri A. Vadovski

Director of Graduate Studies

GRADUATE COUNCIL MEMBERS & STAFF

The Graduate Council is responsible for Graduate College activities at UNMC.

H. Dele Davies, MD
Dean

Kendra K. Schmid, PhD
CHAIR Executive Associate Dean

Iqbal Ahmad, PhD
Associate Dean

Karen A. Gould, PhD
Assistant Dean

Katie Muilenburg
Graduate Student Association
President

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

Moorthy Ponnusamy, 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

Edward S. Peters, ScD
Epidemiology

Tammy L. Webster, PhD
Health Professions Teaching
& Technology (MS)
Healthcare Delivery Science (MS)
Applied Health Informatics (Certificate)
Quality Improvement (Certificate)

Melissa K. Tibbits, 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)

R. Katherine Hyde, PhD
IGPBS - Biochemistry
& Molecular Biology

Michael J. Rowley, PhD
IGPBS - Bioinformatics
& Systems Biology

Joyce C. Solheim, PhD
IGPBS - Cancer Research

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

Andrew T. Dudley, PhD
IGPBS - Molecular Genetics
& Cell Biology

Keshore R. Bidasee, PhD
IGPBS - Neuroscience

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

Samantha M. Simet, PhD
Medical Anatomy (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

Lani (ChiChi) M. Zimmerman, 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

James K. Wahl, PhD
MSIA - Oral Biology

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

Christine M. Eisenhauer, PhD
Nursing

Paul C. Trippier, PhD
Pharmaceutical Sciences

Staff

Terri A. Vadovski
Director

Emily E. Brandt, MA
Admissions & Assessment Specialist

POSTDOCTORAL EDUCATION ADVISORY COUNCIL & STAFF

The Postdoctoral Education Advisory Council (PEAC) examines issues related to postdoctoral education at UNMC and provides guidance in matters related to training and recruitment.

Iqbal Ahmad, PhD
CHAIR Associate Dean

Kaustubh Datta, PhD
Biochemistry & Molecular Biology

Kasum Kharbanda, PhD
Internal Medicine

Keith Johnson, PhD
Oral Biology

Luis A. Marky, PhD
Pharmaceutical Sciences

Kaushik P. Patel, PhD
Cellular & Integrative Physiology

Rakesh K. Singh, PhD
Pathology & Microbiology

Huangui Xiong, MD, PhD
Pharmacology & Experimental Neuroscience

Postdoc

Neha Dhuani, PhD
Cellular & Integrative Physiology

Staff

Charles Klinetobe, PhD
Coordinator

LEAVING A LEGACY OF EXCELLENCE:

DR. PAMELA K. CARMINES RETIRED AFTER 29 YEARS OF DEDICATED SERVICE

Pamela K. Carmines, PhD, professor of cellular and integrative physiology, and executive associate dean of graduate studies, retired almost three decades after joining UNMC.

A graduate of Longwood College, Dr. Carmines earned her PhD from Indiana University and completed postdoctoral training at the University of Alabama at Birmingham. Before joining the faculty at UNMC in 1993, she was assistant professor of physiology at the Tulane University School of Medicine.

“When I told my department chair in New Orleans I was taking a job here, he very clearly stated, ‘You do realize if you go there, you will have to compete with me.’ Of course, that made me even more determined,” she explained.

That determination paid off, and Dr. Carmines prospered at UNMC. She became a mentor and leader, helping to shape the educational journey of countless students. “There is nothing like popping champagne after a successful dissertation defense or when a student’s research unveils something no one else in the world knows yet,” Dr. Carmines said.

Under her leadership, multiple innovative and student-focused programs were developed including the Seguidor™ Graduate Student Management Portal, Dissertation Boot Camp, the Writing Center @ UNMC, and the Professional Skills Lunch and Learn Program. She was also the driving force behind the Graduate Studies initiative to provide the COVID-19 vaccine to graduate students when it first became available.

Additionally, Dr. Carmines served as vice chair for graduate education in the UNMC Department of Cellular and Integrative Physiology and vice chair of the promotions and tenure committee for the UNMC College of Medicine.

“Dr. Carmines has been a devoted researcher, award-winning teacher and mentor to generations of students and faculty at UNMC. During the past nine years especially, she has served with distinction as the assistant dean and then executive associate dean for graduate studies as we worked together to grow the graduate college,” praised Dele Davies, MD, senior vice chancellor for academic affairs and dean of graduate studies.

During her tenure at UNMC, Dr. Carmines won numerous awards and honors, including the UNMC Outstanding Teacher Award, the UNMC Visionary Leadership in Education Award and the Golden Apple Award from the American Medical Student Association. An established investigator of the American Heart Association and recipient of the American Society of Hypertension Young Scholars Award, Dr. Carmines held several leadership positions in the American Physiological Society.

Additionally, she completed the prestigious Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women, a year-long fellowship where she honed her leadership skills in the context of the needs of an academic medical center.



To honor Dr. Carmines’ extensive achievements, the UNMC Department of Cellular and Integrative Physiology, UNMC College of Medicine Dean’s Office and UNMC Graduate Studies supported the Dr. Pamela Carmines Symposium on Renal Physiology in June 2022.

In addition to her numerous academic achievements, Dr. Carmines still found time to excel in her other passion — golf. She has a record of three holes in one and has played on prestigious golf courses across the nation.

Yet even while sinking putts, Dr. Carmines had her eye on academia. She once played in a foursome with a Nobel laureate, resulting in a collaboration and his co-authorship on one of her papers.

“Playing golf also led to UNMC having a writing center,” she said. She played against, and then had lunch with, the writing director at the University of Nebraska Omaha’s English department. That lunch led to further conversation, which led to a UNO satellite writing center on UNMC’s campus.

While Dr. Carmines derived a lot of satisfaction throughout her career, she looked forward to retirement and the freedom from a busy calendar, particularly being able to visit family and friends — and play golf — whenever she wants. “I’ve made a lot of good friends at the university and around the world,” she said.

Dr. Kendra Schmid Named New Executive Associate Dean

Following the retirement of Dr. Pamela K. Carmines, **Kendra Schmid, PhD**, assumed the role of executive associate dean of graduate studies in May 2022.

"Dr. Carmines leaves big shoes to fill, and I have been fortunate to work alongside her over the last four years as assistant dean," said Dr. Schmid. "I'm excited about supporting our graduate students in a new way in this role."

Dr. Schmid joined UNMC in 2007 after completing her PhD in statistics at the University of Nebraska-Lincoln and currently is a professor in the UNMC Department of Biostatistics. In addition to her faculty position, Dr. Schmid has served in university-level administrative roles as the assistant vice chancellor for academic affairs, a role that includes overseeing the Office of Institutional Research, directing the Office of Accreditation and Assessment, and serving as UNMC's academic liaison to the Higher Learning Commission. She retains that role as she moves into her new position.

"As Dr. Schmid assumes the role of executive associate dean, with a strong team in place behind her, Graduate Studies is positioned to continue to build on our mission of being the best place in the nation for the training of graduate students through exceptional education and research programs, faculty

mentoring and professional skills development," said Dele Davies, MD, dean of graduate studies and senior vice chancellor for academic affairs. "It has also enabled us to align members of our team with the skill sets that maximally benefit our students and faculty."

"I look forward to collaborating with Drs. Gould, Zimmerman and Monaghan as they take on new responsibilities, and we work together to enhance the learning experience for our graduate students," said Dr. Schmid.



New Leadership Provides Fresh Ideas for Growth



Karen Gould, PhD, appointed assistant dean for graduate student success and campus-wide director of assessment

In her new role, she plans to work on initiatives to support graduate student wellness, professional development and career counseling, as well as enhance the Graduate Studies pipeline and pathway programs. She also will oversee assessment programs on campus and support the research integrity office as the deputy officer.

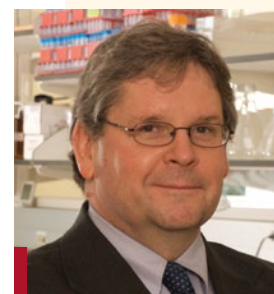
"Working with graduate students and helping them succeed and navigate challenges is the most rewarding part of my work as a faculty member," Dr. Gould said. "That really is what sparks my passion for graduate education and led to my decision to take on more leadership roles in graduate education at UNMC."



Matt Zimmerman, PhD, appointed director of the Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS) program

Dr. Zimmerman has served since 2015 as director of the Integrative Physiology and Molecular Medicine Doctoral Program, one of the seven sub-programs in the IGPBS.

"I am excited about this opportunity," Dr. Zimmerman said. "I look forward to working with IGPBS sub-program directors, staff and faculty mentors to ensure we continue to provide the best education and research environments for our students so they can achieve their individual goals and successes."



Dan Monaghan, PhD, appointed associate IGPBS program director and director of IGPBS strategic initiatives

Dr. Monaghan established UNMC's common-entry PhD program, the Biomedical Research Training Program, in 2000. The program's creation led to a significant increase in domestic PhD students and minority student recruitment.

"I am looking forward to being able to focus on new initiatives important for the growth of graduate training at UNMC," Dr. Monaghan said. "There has been significant growth in our training programs and a focus on improving their quality. Yet further improvements are possible, and I find that exciting."



Students:

Bright futures, new beginnings

631 STUDENTS ENROLLED IN FALL 2022

This is the largest number of students in the history of Graduate Studies and an increase of 12.28% over 2021.

48 DIFFERENT COUNTRIES REPRESENTED

Students come from all over the world, with 3 of 10 students being international.

160 STUDENTS GRADUATED

In 2021 – 2022, 93 students earned a doctoral degree, 42 earned a master's, and 25 earned certificates.

Student Accomplishments at a Glance

SUCCESSSES THROUGHOUT THE YEAR

\$ 1,213,446

in intramural UNMC fellowship funding, including supplements

503

peer-reviewed publications, book chapters or government reports
— 32% of publications listed students as first author

\$1,522,750+

in external fellowship funding

407

conference presentations
— 19% increase over last year

\$54,387

in travel awards

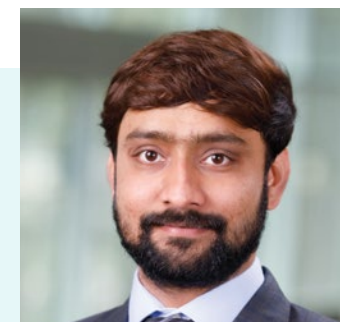
102

national, regional and local honors
— 16% increase over last year

1,019

hours of service-learning activities
— 175% increase over last year

UNeMed Innovators



Milankumar Patel

MSIA – Patient-Oriented Research



Mahmudul Hasan

Pharmaceutical Sciences

Contributed to the creation of a new invention and licensed technology:

Long-Acting Therapeutics & Gene Editing Technology for HIV

Honors & Recognition

New Graduate Students of Distinction

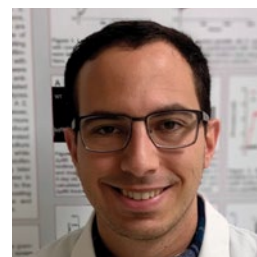
Students who received national or international recognition

A total of 62 students have been named Graduate Students of Distinction since the program was instituted in 2014.



Nozima Aripova

MSIA – Clinically Relevant Basic Research
**Rheumatology Research Foundation
Future Physician Scientist Award**



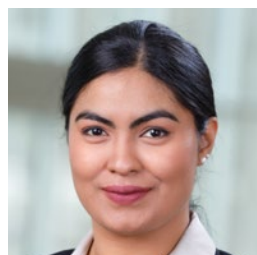
Blake P. Bertrand

IGPBS – Immunology, Pathology
& Infectious Disease
**American Heart Association
Predoctoral Fellowship**



Nathan D. Hatch

IGPBS – Immunology, Pathology
& Infectious Disease
**NIAID Ruth L. Kirschstein National
Research Service Award Individual
Predoctoral Fellowship**



Kajal Kamra

IGPBS – Integrative Physiology
& Molecular Medicine
**American Heart Association
Predoctoral Fellowship**



Suhita Ray

IGPBS – Molecular Genetics
& Cell Biology
**American Heart Association
Predoctoral Fellowship**



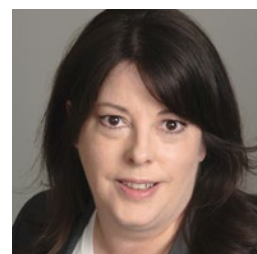
Molly N. Schieber

IGPBS – Integrative Physiology
& Molecular Medicine
**American Heart Association
Predoctoral Fellowship**



Rebecca A. Slotkowski

MSIA – Patient-Oriented Research
**NIMHD Ruth L. Kirschstein National
Research Service Award Individual
Predoctoral Fellowship**



Susan Solmos

Nursing
**American Association of Critical Care
Nurses Impact Research Grant
Sigma Foundation for Nursing
Small Grant**

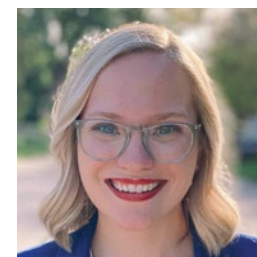


Nicholas A. Wood

IGPBS – Immunology, Pathology
& Infectious Disease
**NIAID Ruth L. Kirschstein National
Research Service Award Individual
Predoctoral Fellowship**

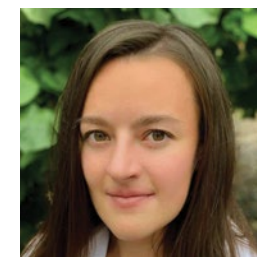
Nebraska University Presidential Graduate Fellows

Awarded for 2022-2023 based on high academic performance
and personal accomplishment



Abbey Klein

Nursing

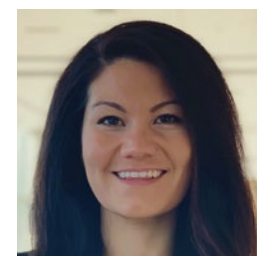


Melissa Rosenthal

Immunology, Pathology &
Infectious Disease

Praesto Award

Given to the most outstanding or exceptional graduate for
the academic year

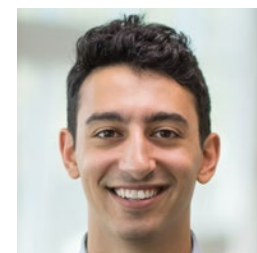


Laura Flores, PhD

MSIA – Patient-Oriented Research

Thomas Jefferson Ingenuity Award

Given for unmatched creativity and ingenuity in
doctoral research



Safwan Elkhatib, PhD

IGPBS – Integrative Physiology
& Molecular Medicine

Honors from the UNMC Alumni Association

DISTINGUISHED ALUMNUS

**KYLE P. MEYER, PhD,
PT '79, MS '85, FSAHP**
*Dean, College of Allied Health
Professions*

EARLY CAREER ACHIEVEMENT

**MICHAEL DIXON, PhD
'03 graduate**
President & CEO, UNeMed

HONORARY ALUMNUS

TAMMY KIELIAN, PhD
*Professor, Dept. of Pathology
& Microbiology*

Not many students get the opportunity to see the original anatomy labs at the oldest university in Europe. But then again, not many students are like **Laura Flores, PhD**.

A student in the MD-PhD program at UNMC, Dr. Flores earned her PhD in the Medical Sciences Interdepartmental Area, specializing in Patient-Oriented Research. Early in her PhD journey, she was awarded a scholarship from the American Society of Bone and Mineral Research (ASBMR) to the European Calcified Tissue Society training course in Bologna, Italy. It was there that she first experienced what it meant to be a physician-scientist.

"I was able to see how these incredible European labs literally take a project from 'bench to bedside,'" Dr. Flores explained. "I was in awe of how the physician-scientists took their experiments in cell and mouse

models all the way to their own patients in endocrinology clinics over the course of years. The dedication to their patients and to their craft was unmatched."

Dr. Flores focused her doctoral work on the intricacies of clinical trial research and how to best design and implement ethically sound trials. As she moved through her PhD program, completing a clinical trial investigating treatments for bone loss following weight loss surgery, Dr. Flores became highly aware of the inequalities faced by clinical trial participants in terms of access, accommodation and bias. Because of this, Dr. Flores sought to explore solutions to these problems. She dedicated much of her free time to publishing on and advocating for clinical trial equity with a national collaborative team. Her work in equity has been recognized by top tier journals and featured nationally on networks including Forbes,



MedScape, Healio and CNN. While Dr. Flores' publication record is remarkable, she is an even more talented leader and has been selected for many local and national leadership opportunities. Nationally, Dr. Flores has been an invited speaker at the Harvard Medical School's Career Advancement and Leadership Skills for Women in Healthcare conference, presenting on the importance of scientific communication and data visualization. Additionally, she helped teach a course at UNO titled Writing About Sickness and Health. This course, which focused on the medical humanities, helped shape Dr. Flores' personal and professional goals as a physician and scientist.

In addition to leadership, Dr. Flores is deeply committed to professional and community service. She earned the platinum badge service award, completing over 200 hours of service and professional development, some of which include engaging in diversity, equity and inclusion initiatives.

"The UNMC community has been gracious and generous since I stepped foot on campus over seven years ago," Dr. Flores said. "They have continued to open every door possible, allowing me to collaborate across campuses, attend unique courses, experience lifesaving care, and learn from experts across the globe. I hope I can give back in the same way countless faculty have given to me, through mentorship and collaboration, and I hope to expand my research outside of academia and into the community."

In recognition of her accomplishments spanning research, leadership, service and outreach, Dr. Flores received the coveted Praesto Award from UNMC Graduate Studies.

"The Praesto Award serves as a reminder to aim for a well-rounded career that includes not only research and medical practice but also community service, hobbies and nurturing personal relationships. I felt honored to win the Praesto Award because it meant that UNMC recognized my contributions to the community, in addition to my hard work as a graduate student."

Some of Dr. Flores' proudest accomplishments stem from her relationship with her mentor, **Laura Bilek, PhD**, associate dean for research at the College of Allied Health Professions. "I am so proud to have been a member of her lab and to have passed on some of my experience to our newest students," Dr. Flores said.

Dr. Bilek felt similarly about her time with Dr. Flores. "It was a pleasure working with Laura. I feel that I learned more from her than she did from me," she said. "Laura has limitless curiosity and creativity and the ability to translate information from multiple disciplines into innovative research questions. In addition to contributing to science, she also provides significant service to the community. With her ingenuity and desire to serve her community, I have no doubt that Laura will do great things in her career."

What is next on the horizon for Dr. Flores? "My goal is to complete my MD and go on to become a physician scientist, contributing to clinical trial research and relying heavily on my scientific, ethics and humanities training," she explained. "Outside of work, I plan to have a family with my wonderful husband, Jeremy, continue to write poetry, get back to my home state of New Mexico and travel the world."

ACCOMPLISHMENTS

42 publications, 12 as first author

15 poster or podium presentations

15 honors and awards

3 fellowships

- + UNMC Fellowship
- + Yale Ciencia Academy Fellowship
- + Future Leaders Advancing Research in Endocrinology (FLARE)

NOTABLE HONORS & AWARDS

Praesto Award, UNMC Graduate Studies

Platinum Service Award, UNMC Graduate Studies

UNMC Program of Excellence Assistantship (awarded to the top 10% of applicants)

UNMC Graduate Student of Distinction

UNMC Student Senate Impact Award

ASBMR Young Investigator Fund for Education and Research Diversity Award

ASBMR Young Investigator Award for the European Calcified Tissue Society PhD Training Course

Dr. Laura Flores: A Rising Star on the Horizon



WATCH A VIDEO OF
DR. FLORES SHARING
HER EXPERIENCES:
go.unmc.edu/flores



Postdocs:

Continuing the journey to success

159
POSTDOCS TRAINED

During 2021 - 2022, postdocs contributed to the research in 35 different disciplines.

2.4
YEARS IN TRAINING

The average time our postdocs spend training at UNMC is between two – three years.

67 FACULTY
MENTOR POSTDOCS

Faculty across colleges and institutes provide training to postdocs.

Postdoc Accomplishments at a Glance

SUCCESSES THROUGHOUT THE YEAR

\$173,928

in new individual postdoc fellowship (F32) funding and NRSA individual fellowship (F30) funding

80

peer-reviewed publications, book chapters or government reports written — 65% of which had postdocs listed as first author

46

conference presentations given

10

national, regional or local honors

Postdoc Honored for Excellence in Research

■ Dr. Jyoti Bala Kaushal wins coveted award

Though **Jyoti Bala Kaushal, PhD**, grew up in an area where no one knew about a PhD or research, she is working to make an impact in research on a disease nearly everyone knows about — cancer ... and her research is gaining recognition.

Dr. Kaushal received the Excellence in Research Award at the Postdoctoral Education annual event in October 2021. The award recognizes UNMC postdoctoral scholars who have made outstanding contributions to their scientific field through first author publications, fellowships and grants, and external activities (such as volunteer work) that demonstrate commitment to science, scholarship or service.

Dr. Kaushal credits her success to her parents' encouragement and support, as well as being inspired by the former president of India, A.P.J. Abdul Kalam, PhD.

"Dr. Kalam's life story and thoughts are an inspiration," Dr. Kaushal said. "He achieved the top position in country. Two of his quotes always motivate me: 'If you want to shine like a sun, first burn like a sun,' and, 'You have to dream before your dreams can come true.'"



"Although science has made significant progress in cancer research, there are many unanswered questions and unsolved problems that need to be addressed," she explained.

Dr. Kaushal's research interests involve deciphering the potential molecular signaling mechanism associated with cancer progression and development, which can aid in the expansion of therapeutics for cancer patients. As a postdoctoral research associate, she is exploring different altered molecular mechanisms that initiate and establish pancreatic and prostate cancer.

Dr. Kaushal expressed gratitude to her mentoring team in the Department of Biochemistry and Molecular Biology: **Surinder Batra, PhD**, department chair, and **Satyanarayana Rachagani, PhD**, assistant professor.

"I believe that my previous experience and recently acquired skills in molecular and cancer cell biology and immense support from my mentoring team will be an essential stepping-stone to establishing myself as an independent cancer researcher," Dr. Kaushal said.

HIGH HONORS FOR FORMER POSTDOC

| Dr. Susmita Sil recognized
for promising research



Susmita Sil, PhD, former postdoc and current assistant professor of pharmacology and experimental neuroscience, was named the 2022 Vada Kinman Oldfield Scholar. The award recognizes promising new ideas in Alzheimer's research.

Dr. Sil's studies aim to find a treatment for memory loss and neurodegeneration in a transgenic model of Alzheimer's disease. She will be using a novel drug, which is currently in a Phase 2 clinical trial for treating cardiovascular diseases, to assess its potential therapeutic effects on cognitive deficits in Alzheimer's. She will also be exploring biomarkers of the disease.

"Available therapeutics in Alzheimer's can slow the progression of memory loss, but a complete eradication is the glaring factor that still needs attention," Dr. Sil said. "Knowing of the Kinman-Oldfield Family Foundation's vision of a cure for and the eradication of Alzheimer's disease, I feel encouraged and motivated. We are re-purposing promising drugs that we believe have potential to improve cognitive abilities. This study is a key first step in supporting our long-term goal of helping patients who started to experience memory loss."

Howard Gendelman, MD, chair of the department, called Dr. Sil one of UNMC's best and brightest young scientists. "Dr. Sil's research trajectory and

scientific development blazes a path toward not simply understanding the brain's reaction to injuries but a means to correct it — and fundamentally, at the intersection between viral brain and Alzheimer's diseases," Dr. Gendelman said.

Shilpa Buch, PhD, professor of pharmacology who mentored Dr. Sil during her postdoc training, said, "Having mentored Susmita over the years and seeing her blossom, I couldn't feel more proud of her achievements! Her unmatched tenacity, fierce grit and tireless perseverance are the key ingredients of her success — and, as the saying goes, the best is yet to come."

ABOUT DR. SUSMITA SIL

Dr. Sil engages in evidence-based studies involving Alzheimer's disease, as well as HIV-1 and substance use disorder mediated Alzheimer's-like pathology. She has received multiple academic and professional honors, including receiving the UNMC New Investigator Award in 2021. Other awards include:

- + R25 pilot grant from John Hopkins funded by National Institute of Mental Health
- + Pilot grant from Nebraska Center of Substance Abuse Research
- + Chronic HIV and Aging in NeuroAIDS (CHAIN) pilot grant from National Institute of Mental Health
- + R21 grant from National Institutes of Health on which she is the principal investigator

Postdoctoral Scholar **Arpan Acharya, PhD**, and his mentor **Siddappa Byrareddy, PhD**, were part of a UNMC team that identified two potential candidates for an antiviral treatment to fight COVID-19. Their findings were published recently in the Journal of Virology.

In collaboration with Missouri scientists, the UNMC team used a computer program to model millions of compounds for their potential as antiviral treatments for the coronavirus. Five emerged as top candidates, two of which were effective in cell culture experiments against both the original SARS-CoV-2 virus and two of its variants.

Antivirals, which inhibit virus replication, are needed as a critical weapon in the fight against COVID-19, said Dr. Byrareddy. Unfortunately, while simple antiviral drugs can help, potent ones are not available.

So, UNMC partnered with a team from the University of Missouri, led by Kamal Singh, PhD. The Mizzou team used computer-aided drug design (CADD) technology to sort, suggest and test millions of antiviral candidates to find ones best suited to inhibit SARS-CoV-2 virus replication and thus stop COVID-19. The UNMC team handled the biology and drug-development aspects of the project.

The CADD modeling identified five potential compounds that could inhibit the hookup of spike protein and receptor. Two, MU-UNMC-1 and MU-UNMC-2, named because they were made in collaborative efforts between the institutions, could prevent the virus from entering host cells during cell culture experiments.

Two hours post-infection, the compounds reduced infectivity by up to 80%. They reduced infectivity by 40% when added at the time of infection. But four hours post-infection, there was no effect. MU-UNMC-2 showed a further synergistic effect when combined with remdesivir. It also has many other qualities that make it a promising drug candidate.

"MU-UNMC-2 alone or in combination with remdesivir will be a good candidate for development as a prophylactic or therapeutic agent against COVID-19," said Dr. Acharya, the paper's first author.

The UNMC-Missouri team will work with private companies to speed the research forward and bring new anti-COVID-19 drugs to the public.

Team Helped ID Antivirals to Use Against COVID-19



Arpan Acharya, PhD

Siddappa Byrareddy, PhD

580
faculty teach graduate students

Faculty from all 6 colleges and 2 institutes teach and mentor graduate students.

61
UNMC faculty newly appointed to the NU Graduate Faculty in 2021-2022

38% of graduate faculty at UNMC have worked here for 10 years or more.

7 OF 10
are senior-ranking faculty

45% of UNMC graduate faculty hold the rank of professor, while 27% are associate professors.



Faculty:

Optimizing the learning experience for all

Faculty Accomplishments at a Glance

1,306
peer-reviewed publications

1,061
boards or committees on which faculty serve

701
conference or invited speaker presentations

562
students taught in the previous academic year

140
international, national, regional or local honors
- 8 faculty won awards for new inventions

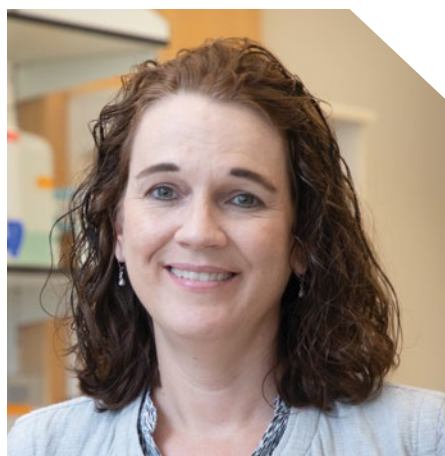
121
postdocs mentored in the previous academic year

73
book chapters or government reports

Honors & Recognition

OUTSTANDING MENTOR OF GRADUATE STUDENTS

Presented by the Faculty Senate: Recognizes faculty who exemplify excellence in the mentoring of graduate students



Tammy Kielian, PhD

Professor and Choudari Kommineni, DVM, PhD,
Endowed Professor of Pathology



Ka-Chun (Joseph) Siu, PhD

Associate Professor of Physical Therapy
Education and Director of Global Health
Opportunities Program

DISTINGUISHED GRADUATE STUDENT MENTOR

Presented by the Graduate Student Association:
Recognizes faculty for their efforts in training, mentoring
and helping students excel in their studies and research

Jered Garrison, PhD

Professor of Pharmaceutical Sciences



VARNER EDUCATOR LAUREATE AWARD

(highest education-related award at UNMC)

Presented by Academic Affairs:

Recognizes an individual with sustained achievement
in education who has significantly improved the UNMC
learning environment through the provision of outstanding
educational experiences

Justin Mott, PhD, MD

Associate Professor of Biochemistry & Molecular Biology and
Director of the MD-PhD Scholars Program



STARTUP OF THE YEAR AWARD

Presented by UNeMed

Ensign Pharmaceutical founded by Dong Wang, PhD

Professor of Pharmaceutical Sciences

Received for the creation of a thermosensitive hydrogel
formulation called ProGel, a novel platform technology that can
deliver a variety of therapeutics



INNOVATOR OF THE YEAR

Presented by UNeMed

Hanjun Wang, MD

Associate Professor of Anesthesiology

Received in recognition of his achievements and innovative
work developing novel treatment strategies for a variety of
diseases, including heart failure, acute respiratory distress
syndrome and peripheral artery disease



NEW MEDICAL PHYSIOLOGY PROGRAM APPROVED



A new online MS in Medical Physiology Program was approved and welcomed its first cohort of students in fall 2022.

The 30 credit-hour, non-thesis, distance-learning program is designed to meet the needs of prospective students who are seeking to:

- + Obtain undergraduate adjunct teaching positions or community college teaching positions in physiology
- + Improve their competitiveness for admission into related PhD programs
- + Enhance their knowledge in physiology for professional advancement, for example, those who work in research laboratories
- + Broaden their physiology knowledge base to improve their competitiveness for admission into medical or other health professions educational programs

The master's program is housed within Graduate Studies and offered by the UNMC Department of Cellular & Integrative Physiology.

"This completely online program provides great flexibility for students as it can be completed in two consecutive academic semesters by full-time students, or over five years by part-time students," said program director **Matthew Zimmerman, PhD**. "We believe the program's unique and robust curriculum will prepare students for the next step in their individual career path."

Graduate Program Added Five Federally Supported Fellowships

The U.S. Department of Education has identified technical skills in biology, biochemistry, computer science and biophysics as an area of national need. UNMC Graduate Studies is answering the nation's call by adding five fellowships to its structural biology and molecular biophysics (SBMB) training program.

These skills can lead to big discoveries. "Study in SBMB provides an atomic view of biological macromolecules and describes the forces involved in the intermolecular interactions that constitute life," said **Gloria Borgstahl, PhD**, professor in the Eppley Institute for Research in Cancer and Allied Diseases.

The additional fellowships are a win-win. They will be funded by a grant from the U.S. Department of Education's Graduate Assistance in Areas of National Need (GAANN) program. The SBMB program has a history of GAANN support, but this is the first time UNMC has been awarded a GAANN grant request at 100%.

UNMC's application, under Dr. Borgstahl's leadership, received a perfect score from reviewers.

Dele Davies, MD, senior vice chancellor for academic affairs and dean of graduate studies, has made pursuit of such institutional training grants a priority. This is now UNMC's third such grant.

"This training grant builds on the success our graduate students have had in getting multiple individual federally- and foundation-funded training awards over the past nine years," Dr. Davies said. "The GAANN program provides a unique opportunity for UNMC graduate students to work with an interdisciplinary team. These skills will be useful for multiple research pathways and will also provide



trainees with the skill sets for various academic faculty positions."

The program's graduates are expected to make an impact, both in research and as educators themselves.

"Our goal is to produce a diverse group of outstanding researcher-teachers with excellent communication skills and technical expertise that will become the next generation of faculty in SBMB," Dr. Borgstahl said.



New T32 Training Grant to Support up to Six Students

Paul Trippier, PhD, associate professor in the UNMC College of Pharmacy, and **Howard Fox, MD, PhD**, professor in the UNMC College of Medicine, collaborated on a \$1.2 million grant from the National Institute on Aging to establish a training program focused on Alzheimer’s Disease and Related Dementias Drug Discovery (ADRD3).

This prestigious T32 training grant provides funds for up to six PhD-level graduate students per year for the next five years. Students will have the opportunity to conduct interdisciplinary research to identify new targets, new models and new drugs for the potential treatment of Alzheimer’s disease and related dementias. The students will interact with clinicians who care for individuals with Alzheimer’s disease, so they can see potential areas where their research can improve human health.

“UNMC has world-renowned experts in drug discovery, Alzheimer’s disease pathophysiology, disease models and clinical care,” Dr. Fox said. “This training grant brings these faculty together to provide a unique environment for graduate students to be fully immersed in basic, translational and clinical research.”

The training program will include specialized didactic courses in drug discovery and the molecular basis of neurodegenerative diseases, as well as a new journal club and Alzheimer’s disease drug discovery conference.

“Drug discovery is an interdisciplinary undertaking that involves scientists from many different areas,” Dr. Trippier said. “This training program will guide students in their training to work with multiple scientific areas to best serve Alzheimer’s disease patients.”

\$1,200,000 grant awarded to UNMC faculty from the National Institute on Aging to establish a training program focused on Alzheimer’s Disease and Related Dementias Drug Discovery



UNMC currently has 5 NIH-funded Institutional Training Grants to support students

- 1 Cancer Biology Training Program (T32)
- 2 Neuroimmunology of Disease Training Program (T32)
- 3 UNMC Training Center for Alzheimer’s Disease and Related Dementias Drug Discovery (T32)
- 4 Summer Undergraduate Alcohol Research Program (R25)
- 5 Ignite-Engage-Sustain for Native American Students in Cancer Training (R25)



NEW WELLNESS ADVOCATE TO COUNSEL GRADUATE STUDENTS AND POSTDOCS

UNMC’s graduate students and postdoctoral scholars have mentors who offer guidance in their professional and scientific careers. Now they’ll also have an experienced confidante in their corner to provide counsel on wellness, resiliency, stress management and more.

Terrence M. Donohue, Jr, PhD, emeritus professor of internal medicine and a UNMC Graduate Studies alumnus, serves in the newly-created role of wellness advocate for UNMC Graduate Studies and Postdoctoral Education.



“I believe that, as a neutral third party I can help students and postdocs deal with some of the personal and professional roadblocks they may encounter during their training,” explained Dr. Donohue. “Throughout my time at UNMC, I gained considerable institutional knowledge of UNMC, and I have that experience I can draw from to help counsel students and postdocs.”

Dele Davies, MD, dean of graduate studies and senior vice chancellor for academic affairs, noted Dr. Donohue has more than 40 years of successful research and mentoring experience and has been a strong advocate for graduate students as a member of the UNMC Graduate Council and the Graduate Studies Alumni Council.

“I want to thank Dr. Donohue for giving back and helping to launch this important program,” Dr. Davies said. “His experience and insights will be a tremendous benefit to students and postdocs.”

Caitlin Molczyk, an MD-PhD scholar, cheered the move, noting graduate students face unique challenges. “The PhD training is more siloed than medical school training because you work in your respective labs and spend a smaller portion of time in class, which lends it to be a more isolating experience and amplifies the stress and anxiety of graduate school,” she said. “We are excited to have Dr. Donohue support our graduate school community by being there for students in times of need and in times of joy, advocating for them if needed.”

Students recognized during city-wide appreciation week

Mayor Jean Stothert proclaimed April 4-8 Graduate & Professional Students Appreciation Week in Omaha to recognize the contributions and accomplishments of the students and the impact they have on their communities.

Graduate Studies hosted several activities, including:

- + Writing notes of gratitude for students
- + Donuts with the dean
- + Therapy with dogs from Paws for Friendship
- + Scavenger hunts
- + Eggstravaganza
- + Karaoke night



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The Graduate Studies Office moved to a new home in the **Joseph D. & Millie E. Williams Science Hall.**

The newly renovated space is in a centralized location on campus with easy access to the library and other student services.



Forward Motion on Strategic Planning Initiatives

In 2021, Graduate Studies launched a series of taskforces to improve the learning experience of students and ensure graduate faculty have ongoing support.

DEI TASKFORCE

The taskforce created three new types of scholarships focused on recruiting and supporting a diverse and altruistic student body.

The Ray H. Frohn Incoming Graduate Student Scholarships

will help recruit and retain new graduate students dedicated to serving the underserved. The inaugural cohort of 10 Frohn scholars is expected to matriculate in fall 2022.

The UNMC Dean of Graduate Studies Conference Attendance Scholarships for Minority-Focused Scientific and/or Professional Conferences

are intended to support costs of up to \$500 for any UNMC graduate student to attend a minority-focused scientific and/or professional conference.

The UNMC Dean of Graduate Studies Conference Attendance Scholarships for General Scientific and/or Professional Conferences

are intended to support costs of up to \$500 for any domestic scientific or professional conference (\$750 for abroad) for students who contribute diverse cultural experiences or talents that lead to a richer and more diverse UNMC environment.

MENTORING TASKFORCE

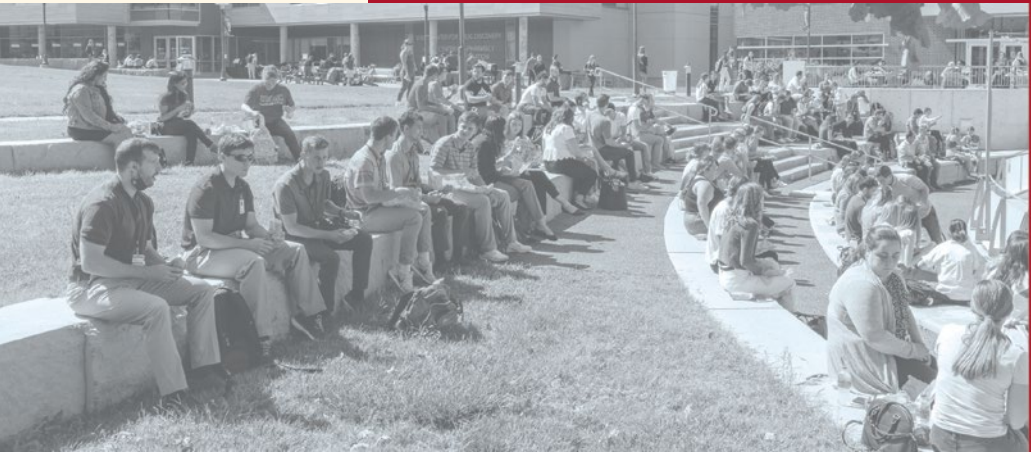
The taskforce conducted focus groups and summarized their findings and recommendations in a report that was submitted to the dean and graduate council. This led to the creation of a compact between graduate students and their research advisors, which will be available in fall 2022. Guidelines and procedures for addressing inappropriate mentoring behaviors are currently being drafted.

TRAINING EDUCATORS

The group created an online repository of resources geared to grow teaching skills. Additionally, two live training sessions focused on teaching careers and how to prepare for them, one of which was the second highest attended events of the year with nearly 150 attendees.

WELLNESS TASKFORCE

This group was the driving force behind the creation of a Wellness Advocate role. Additionally, surveys were disseminated and focus groups were held to fully understand the needs of faculty, staff, students and postdocs. A report of the taskforce's findings and recommendations has been submitted to the dean and graduate council.



PLANS FOR THE FUTURE

Increased focus on mentoring for graduate students and postdocs, which includes six faculty training at CIMER (Center for the Improvement of Mentoring Experiences in Research) that they will then use to train fellow faculty members.

Expanded opportunities for graduate students to learn effective teaching strategies from leading experts at UNMC and apply the skills by teaching in the High School Alliance.

Facilitated discussions as part of the NIH sponsored “Becoming a Resilient Scientist” series.

New Thesis Boot Camps for master’s students modeled on the successful Dissertation Boot Camps for doctoral students.



Graduate Studies turns 80

To commemorate the past 80 years of growth and achievement, UNMC Graduate Studies and the McGoogan Health Sciences Library partnered to produce a new exhibit within the Wigton Heritage Center titled "UNMC Graduate Studies: Helping Students Succeed for 80 Years, 1942-2022."

Additionally, Graduate Studies created an 80th year anniversary logo that is being used throughout communications and on commemorative medallions given to students who graduated in 2022. Finally, the Graduate Student Association is planning many opportunities for students to get involved.

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Managing Editor & Art Director

Megan Blusys

Designer

Brandie Morales

Contributing Writers

*Megan Blusys, John Keenan,
Jeffrey Robb, Kalani Simpson*

Graduate Studies

987815 Nebraska Medical Center
Omaha, NE 68198-7815
unmc.edu/gradstudies

Postdoctoral Education

987810 Nebraska Medical Center
Omaha, NE 68198-7810
unmc.edu/postdoced