A Message from the Dean

It is my pleasure to share the 2019-2020 annual report, featuring the many accomplishments made by our graduate students, postdoctoral fellows and faculty members.

During the past year, our trainees and mentors continually made an impact inside and outside the classroom and laboratories. Additionally, they excelled in scholarship, including awards, fellowships and publications — many of which as first author. The past year also saw our graduate students and postdoctoral fellows support the work of our faculty investigators, who continue to have an extraordinary impact in transforming lives through biomedical research.

In this report, we celebrate the successes of our trainees and faculty, even in the midst of uncertainty that surrounded the COVID-19 pandemic during the spring semester. Throughout changes to the traditional learning and research environments, our faculty, staff and students continued to stay focused on innovative research and breakthrough education in pursuit of creating a healthier future.

Join us in looking back and celebrating some major accomplishments on our shared journey in positively impacting the nation’s supply of research scientists, educators and leaders.

Table of Contents

2 Overview
   Leadership
   Council Members

6 About Us
   Accomplishments
   Honors & Recognition
   National Award Winners
   Dr. Saswati Karmakar: Turning Dreams into Reality

14 Students
   Accomplishments
   Training Satisfaction Survey

18 Postdocs
   Accomplishments
   Honors & Recognition
   Dr. Adam Case: Distinguished Graduate

24 Faculty
   Accomplishments
   Honors & Recognition
   Dr. Rebekah Gundry: Unlocking COVID-19’s Secrets

26 Alumni
   Faculty & Staff Rise to the Challenge
   Remote Learning Survey
   Students Aim to Help Neighbors

H. Dele Davies, MD, MS, MHCM
Senior Vice Chancellor for Academic Affairs
Dean of Graduate Studies
Training the Next Generation of Scientists

10 Doctoral degree programs
14 Specializations in 2 interdisciplinary umbrella programs
10 Master’s degree programs
1 Certificate program in business for bioscientists

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
The mission of the Postdoctoral Education program 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, Academic Affairs
Dean, Graduate Studies

Pamela K. Carmines, PhD
Executive Associate Dean, Graduate Studies

Iqbal Ahmad, PhD
Associate Dean, Postdoctoral Education & Research, Graduate Studies

Kendra K. Schmid, PhD
Assistant Dean, Graduate Studies

Terri A. Vadovski
Director, Graduate Studies

GRADUATE COUNCIL MEMBERS & STAFF

The Graduate Council is composed of graduate program directors, members of the Graduate Studies staff, and the Graduate Student Association president. The Council, in conjunction with the Dean, is responsible for Graduate College activities at UNMC.

H. Dele Davies, MD
Dean

Pamela K. Carmines, PhD
CHAIR Executive Associate Dean

Iqbal Ahmad, PhD
Associate Dean

Kendra K. Schmid, PhD
Assistant Dean

Pranita Atri
GSA President

Mark D. Shriver, PhD
Applied Behavior Analysis

Laurey A. Steinke, PhD
Biochemistry & Molecular Biology

James C. McClay, MD
Biomedical Informatics

Christopher S. Wichman, PhD
Biostatistics

Chandran Achutan, PhD
Environmental Health, Occupational Health & Toxicology

Paraskevi Farazi, PhD
Epidemiology

Melissa K. Tibbits, PhD
Health Promotion & Disease Prevention Research

Hongmei Wang, PhD
Health Services Research, Administration & Policy

Karen A. Gould, PhD
Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS); Medical Anatomy

R. Katherine Hyde, PhD
IGPES Biochemistry & Molecular Biology

Chittibabu Guda, PhD
IGPES Bioinformatics & Systems Biology

Joyce C. Solheim, PhD
IGPES Cancer Research

Rakesh K. Singh, PhD
IGPES Immunology, Pathology & Infectious Disease

Matthew C. Zimmerman, PhD
IGPES Integrative Physiology & Molecular Medicine

Andrew T. Dudley, PhD
IGPES Molecular Genetics & Cell Biology

Keshore R. Bidasee, PhD
IGPES Neuroscience

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

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

Nora E. Sarvetnick, PhD
MSIA Regenerative Medicine & Biomaterials Design

Karen A. Gould, PhD
Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS); Medical Anatomy

R. Katherine Hyde, PhD
IGPES Biochemistry & Molecular Biology

Chittibabu Guda, PhD
IGPES Bioinformatics & Systems Biology

Joyce C. Solheim, PhD
IGPES Cancer Research

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

Nora E. Sarvetnick, PhD
MSIA Regenerative Medicine & Biomaterials Design

STAFF

Terri A. Vadovski
Director

Emily E. Brandt, MA
Admissions & Assessment Specialist

Cody R. Phillips
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

Terrence Donehue, 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

Joshua L. Santarupa, PhD
MSIA Biological Defense & Health Security

Lani M. Zimmerman, PhD
MSIA Clinical & Translational Research Mentored Scholars

Carol A. Casey, PhD
MSIA Clinically Relevant Basic Research

Sharon J. Medcalf, PhD
MSIA Health Practice & Medical Education Research; Emergency Preparedness

James K. Wahl, PhD
MSIA Oral Biology

Kai-Chung Siu, PhD
MSIA Patient Oriented Research

Nora E. Sarvetnick, PhD
MSIA Regenerative Medicine & Biomaterials Design

Kathleen M. Hanna, PhD
Nursing

Paul C. Trippier, PhD
Pharmaceutical Sciences

POSTDOCS

Katie Bailey, PhD
Surgery

Rohit Gaurav, MSc, PhD, FAAAAI
Internal Medicine

The Graduate Council is composed of graduate program directors, members of the Graduate Studies staff, and the Graduate Student Association president. The Council, in conjunction with the Dean, is responsible for Graduate College activities at UNMC.
Student Accomplishments

Student Accomplishments at a Glance

494 students enrolled in fall 2020
This is a decrease from the previous year, largely reflecting reduced international student enrollment because of COVID-19 hurdles and travel restrictions.

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

106 graduates earned degrees
In 2019 – 2020, 42 students earned MS degrees and 64 earned PhD degrees.

$1,018,034 in UNMC fellowship funding, including supplements
$642,165 in external fellowship funding
$500,176 in extramural contracts
$40,955 in travel awards

1,293 hours of service-learning activities, and 1 platinum badge awarded

494 peer-reviewed publications, book chapters or government reports — 143 of which had students listed as first author
First-author publications almost doubled since last year

274 conference presentations

85 national, regional and local honors
Honors & Recognition

Saswati Karmakar
Biochemistry & Molecular Biology

Praesto Award: Given to the most outstanding or exceptional graduate for the academic year

Postgraduate Appointment: Postdoctoral Fellow, Stanford University, Stanford, CA

“I am incredibly honored for this award in recognition of my research, service and leadership accomplishments, and appreciative of the world-class training, education and opportunities provided by UNMC.”

Andrew Cannon
MD/PhD Scholar in Biochemistry & Molecular Biology

Honor: NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral MD/PhD Fellowship

Safwan K. Elkhatib
MD/PhD Scholar in IGPBS – Integrative Physiology & Molecular Medicine

Honor: American Heart Association Predoctoral Fellowship NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral MD/PhD Fellowship

Madeleine D. Keevy
MSIA – Applied Behavior Analysis

Honor: Society for the Advancement of Behavior Analysis Innovative Student Research Dissertation Grant

Graduates of Distinction
Students who received national or international recognition

Andrew Cannon
MD/PhD Scholar in Biochemistry & Molecular Biology

Honor: NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral MD/PhD Fellowship

Safwan K. Elkhatib
MD/PhD Scholar in IGPBS – Integrative Physiology & Molecular Medicine

Honor: American Heart Association Predoctoral Fellowship NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral MD/PhD Fellowship

Madeleine D. Keevy
MSIA – Applied Behavior Analysis

Honor: Society for the Advancement of Behavior Analysis Innovative Student Research Dissertation Grant

There have been 46 Graduate Students of Distinction named since 2014

Convoocation Award Recipients

Alexander I. Wiesman
Interdisciplinary Graduate Program in Biomedical Sciences – Neuroscience

Thomas Jefferson Ingenuity Award: Given to a graduate student for unmatched creativity and ingenuity in doctoral research

Postgraduate Appointment: Postdoctoral Fellow, Montreal Neurological Institute, McGill University, Montreal, Canada

“This award is equally deserved by the countless staff and students at UNMC who facilitated my ability to do good research here. I can’t overstate how great of a research atmosphere UNMC has been for me as a PhD student.”

Saswati Karmakar
Biochemistry & Molecular Biology

Praesto Award: Given to the most outstanding or exceptional graduate for the academic year

Postgraduate Appointment: Postdoctoral Fellow, Stanford University, Stanford, CA

“I am incredibly honored for this award in recognition of my research, service and leadership accomplishments, and appreciative of the world-class training, education and opportunities provided by UNMC.”
Student wins global communication award

Safwan Elkhatib, a scholar in the MD/PhD program, won one of the coveted awards in the Lasker Foundation’s annual Essay Contest. The contest, which recognizes the next generation of science communicators, invites young scientists from around the world to discuss big questions in biomedical research and policy. This year, participants were asked to describe how a notable scientist has inspired them. Among the hundreds of worldwide essays submitted, only 11 were selected as winners.

Elkhatib wrote about how he was inspired that the polio vaccine was never monetized. The paper, *Salk, Sabin, and the Crown of Health*, focused on Jonas Salk, MD, and Albert Sabin, MD. Dr. Salk invented the original polio vaccine and Dr. Sabin later introduced the oral version. The topic was particularly relevant due to recent discussions regarding the coronavirus vaccine.

“I am incredibly honored my essay was selected,” Elkhatib said. “I feel strongly that in monetizing every aspect of health care, we have all but guaranteed the COVID-19 pandemic would most dramatically affect those already marginalized by the medical and scientific community. I hope my words can remind us that scientific research is merely a collaborative practice with the society that supports us — thus the fruits of our labor (i.e., a vaccine) belong to us all.”

Students win national video contest

Two graduate students, Sumit Kar and Tyler Kambis, produced the first-place winning video in The Science Coalition’s national Fund It Forward Student Video Challenge. Participants were asked to create a video to tell the story of why science matters and remind members of Congress that now is the time to invest in research for the future of our nation.

“Both Sumit and I were able to find something passionate about to hone in on while we pieced together our script,” said Kambis, a graduate student in IGPBS Molecular Genetics & Cell Biology, who starred in the video. “He focused on the importance of federal funding for science, while I focused on my family connection with diabetes.”

“We thought a good way to portray our work would be to have a personal story connected to why we are doing this,” said Kar, a graduate student in IGPBS Integrative Physiology & Molecular Medicine, who shot and edited the footage.

The video, created over the course of four weeks, tells viewers about novel UNMC research that has shown the increase of a small genetic molecule can protect the heart from diabetic damage and even reverse heart disease. The hope is to eventually take this discovery to clinical trials. Continued government support of biomedical research is crucial to pursuing these goals, the students explained.

The video has proven to be a successful networking tool, connecting the students to other individuals in the scientific community.

Watch the video at ScienceCoalition.org
Dr. Saswati Karmakar: Turning dreams into reality

For Saswati Karmakar, PhD, starting a new life was exhilarating. She came to the United States from New Delhi, India, with many dreams, including to pursue higher education from a renowned university, to perform groundbreaking biological research that would help save lives, and to mentor young, motivated minds. Despite grappling with the stress of exams, lab work, and everyday life in a foreign country, Dr. Karmakar soon flourished, both inside and outside the classroom.

“Together with world-class training and education, I was provided with an opportunity to embrace and inculcate my experiences in teaching, leadership and outreach,” said Dr. Karmakar. “I am particularly thankful for Dr. Surinder Batra’s support of my research efforts within his lab and of my involvement with various organizations in the community at UNMC and beyond.”

Dr. Karmakar successfully attracted prestigious fellowship funding from the NIH. She authored over a dozen publications, many in high impact journals of her field, and received numerous honors from national scientific societies.

UNMC faculty members Surinder Batra, PhD, and Moorthy Ponnusamy, PhD, both praised Dr. Karmakar for her dedication and excellence. “Saswati was a driven student who never gave up and was focused on achieving her goals. She surprised us by excelling in multiple directions, from GPA (all A+), research accomplishments (NIH F99 grant), awards and community service at UNMC and on the national level. Her inherent enthusiasm for learning more led her to be a successful graduate student at UNMC.”

Beyond her productive efforts in the research laboratory, the scope of Dr. Karmakar’s impact was wide-reaching. She served as teacher, tutor, and mentor for many throughout the UNMC community and has proven to be a natural leader among her peers, easily identifying and proposing solutions to challenges or roadblocks. She also coordinated outreach and social events relevant to the international student communities.

“I am particularly proud of my involvement with the Breaking Barriers program at UNMC,” Dr. Karmakar said. “It is an immensely successful initiative by the International Student Association to promote diversity and cultural harmony on campus by dispelling harmful cultural misconceptions and stereotypes, while focusing on the myriad of shared values and experiences between cultures.”

In recognition of her academic, research, leadership and outreach successes, Dr. Karmakar received the Praesto Award from UNMC Graduate Studies.

“I am incredibly honored for the recognition of my accomplishments. These awards have served as a source of great motivation, enabling me to constantly challenge my abilities and be a better thinker, collaborator and researcher. The awards brought recognition and helped foster a professional network of mentors and collaborators to support my future career path,” she explained. “I hope through our efforts we are able to foster a multidisciplinary graduate environment where service, leadership and outreach are considered as valuable as lab skills.”

Following graduation, Dr. Karmakar will serve as a postdoctoral fellow at Stanford University. “My long-term career goals are to pursue biological research that translates to the clinic and inspire young minds to nurture their curiosity, leading them down a career path that helps better lives.”

In the meantime, Dr. Karmakar will do what she has always done — push through adversity, overcome obstacles, and embrace what truly matters. During convocation, she told fellow graduates, “While following our passions and embarking upon the journey towards success, we must remain fearless, we must be willing to take the path less traveled, and remain committed, focused and positive. Failures are bound to come, but bouncing back from them is what makes the journey worthwhile.”

“Together with world-class training and education, I was provided with an opportunity to embrace and inculcate my experiences in teaching, leadership and outreach,” said Dr. Karmakar. “I am particularly thankful for Dr. Surinder Batra’s support of my research efforts within his lab and of my involvement with various organizations in the community at UNMC and beyond.”
Postdocs

At the start of the academic year, over 150 postdoctoral scholars trained at UNMC. For 68%, UNMC is their first postdoctoral position.

The median time our postdocs spend training at UNMC is under 2 years.

This shows the important role the UNMC international office plays in supporting scholars during the hiring process and in overcoming any visa- and acclimation-related issues they encounter.

Faculty across colleges and institutes provide training to postdocs.

RECORD-BREAKING NUMBERS

Postdoc Accomplishments at a Glance

- **155 postdocs trained**
  At the start of the academic year, over 150 postdoctoral scholars trained at UNMC. For 68%, UNMC is their first postdoctoral position.

- **1.5 years in training**
  The median time our postdocs spend training at UNMC is under 2 years.

- **83% are international**
  This shows the important role the UNMC international office plays in supporting scholars during the hiring process and in overcoming any visa- and acclimation-related issues they encounter.

- **85 faculty mentor postdocs**
  Faculty across colleges and institutes provide training to postdocs.

EXCELLENCE IN RESEARCH AWARD

**Christopher Aretz**, PhD
Postdoctoral Research Associate in Pharmaceutical Sciences
**Discovery and Development of Inhibitors of Aedes Aegypti Kir Channel**
Mentor: Corey Hopkins, PhD

**Jayaram Lakshmaiah Narayana**, PhD
Postdoctoral Fellow in Pathology & Microbiology
**Novel Peptides with Systemic in Vivo Efficacy against Drug-resistant Pathogens**
Mentor: Guangshun Wang, PhD

RECORD-BREAKING NUMBERS

Postdoc Accomplishments at a Glance

- **$48,996** in fellowship and grant support received from the National Cancer Institute and the American Society for Mass Spectrometry

- **2 of 3** have written publications, book chapters, or government reports — 18% of which have each written 5 or more publications

- **51%** of published postdocs have a first author publication and the majority of them wrote 75% or more of the manuscript/abstract

- **86%** have presented their research in local, regional, national and international meetings

1st Place

Runner Up
Postdoc survey revealed training satisfaction

The Office of Postdoctoral Education recently conducted an extensive survey of current postdocs. The survey, which addressed key points in the postdoctoral training and well-being, revealed how well the scholars are doing and the challenges they face. This is important because the data can be used to help mentors make adjustments to better meet the needs of their postdocs.

“Our goal is to help our scholars move toward an independent career of their choice in a timely fashion,” said Iqbal Ahmad, PhD, Associate Dean of Postdoctoral Education & Research. “Overall, the survey results were enlightening, showing mentors and leaders the strengths in UNMC postdoctoral training and the areas that still need improvement.”

Work-Life Balance & Well-Being

Hours spent in the lab each week

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</thead>
<tbody>
<tr>
<td></td>
<td>Less than 30: 1%</td>
<td>30-39: 2%</td>
<td>40-49: 45%</td>
<td>50 or more: 52%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not stressful: 36%</td>
<td>Somewhat stressful: 50%</td>
<td>Very stressful: 9%</td>
<td>Extremely stressful: 5%</td>
<td></td>
</tr>
</tbody>
</table>

Postdocs had more stress regarding scholarly productivity than research projects. They were almost never stressed about their working relationship with their mentor or colleagues.

How stressful is your job?

How much have stress and mental health challenges negatively impacted your productivity?

<table>
<thead>
<tr>
<th></th>
<th>Very high impact: 10%</th>
<th>High impact: 15%</th>
<th>Some impact: 27%</th>
<th>Low impact: 33%</th>
<th>No impact: 15%</th>
</tr>
</thead>
</table>

Over half of postdocs have had stress and mental health challenges impact their productivity.

How reasonable is your workload?

<table>
<thead>
<tr>
<th></th>
<th>Too light: 2%</th>
<th>Just right: 82%</th>
<th>Too heavy: 11%</th>
<th>Much too heavy: 5%</th>
</tr>
</thead>
</table>

84% believe the workload is reasonable.

Top 3 resources and coping mechanisms postdocs have used

1. Family and friends
2. Physical activity / sports
3. Practicing self-care (engaging in hobbies)

Mentoring also was noted as one of the most important factors in increasing productivity and decreasing conflicts. Only 5% of postdocs sought professional assistance for mental health concerns.

Career

Top 3 reasons postdocs chose UNMC

1. Opportunity to work with specific UNMC faculty member
2. Opportunity to work on specific research projects at UNMC
3. UNMC’s reputation for excellence

70% agree or somewhat agree that UNMC has adequately prepared them for their career goals.

How satisfied are you with your postdoctoral training at UNMC?

<table>
<thead>
<tr>
<th></th>
<th>Very satisfied: 18%</th>
<th>Satisfied: 49%</th>
<th>Neutral: 27%</th>
<th>Dissatisfied: 3%</th>
<th>Very dissatisfied: 3%</th>
</tr>
</thead>
</table>

3 of 4 would recommend or strongly recommend UNMC for postdoc training.

Understanding responsible conduct in research was the skill postdocs enhanced the most while at UNMC, followed closely by expertise in their field and writing for publication. This validates the importance of training in responsible conduct and professional development skills.

Mentoring

How satisfied are you with the quality of the mentoring?

<table>
<thead>
<tr>
<th></th>
<th>Very satisfied: 43%</th>
<th>Satisfied: 41%</th>
<th>Neutral: 11%</th>
<th>Dissatisfied: 5%</th>
</tr>
</thead>
</table>

3 of 4 agree mentors are supportive or very supportive of their career goal.

84% are satisfied or very satisfied with the quality of mentoring they’ve received.

Survey was conducted between March 23, 2020 and May 26, 2020 and had a 69% response rate.
Faculty Accomplishments at a Glance

- 1,424 peer-reviewed publications, book chapters and government reports
- 807 boards or committees on which faculty serve
- 604 conference or invited speaker presentations
- 494 students taught in the previous academic year
- 354 courses or lectures changed format due to COVID-19
  - 232 moved to 100% remote learning
  - 122 moved to hybrid format
- 141 postdocs mentored in the previous academic year
- 136 international, national, regional and local honors

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

50 UNMC faculty newly appointed to the NU Graduate Faculty in 2019–2020
40% 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 28% are associate professors.
**HONORS & RECOGNITION**

**B. Timothy Baxter, MD, FACS**  
Professor, Surgery  
**Honor:** Inductee of the Gold Humanism Honor Society

**Elizabeth Beam, PhD, RN**  
Assistant Professor, College of Nursing  
**Honor:** William Rutala Scholarship Award presented by the Society for Healthcare Epidemiology of America

**Martin Conda Sheridan, PhD**  
Assistant Professor, Pharmaceutical Sciences  
**Honor:** Faculty Early Career Development Program (CAREER) Award from the National Science Foundation

**Dele Davies, MD, MS, MHCM**  
Senior Vice Chancellor, Academic Affairs Dean, Graduate Studies  
**Honor:** Council of Graduate Schools Board of Directors

**Kristin Dickinson, PhD, RN, OCN**  
Assistant Professor, College of Nursing  
**Honor:** New Investigator Award presented by MNRS Symptom Science Research Interest Group

**Corey Hopkins, PhD**  
Associate Professor, Pharmaceutical Sciences  
**Honor:** UNMC Excellence in Mentoring Award presented by UNMC Postdoctoral Education  
**Honor:** UNMC Most Promising Invention presented by UneMed

**Maneesh Jain, PhD**  
Associate Professor, Biochemistry & Molecular Biology  
**Honor:** Outstanding Mentor of Junior Faculty Award presented by the Faculty Senate

**Lynn Mack, MD**  
Associate Professor, Internal Medicine  
**Honor:** Top Teacher Award presented by UNMC Internal Medicine

**Sharon Medcalf, PhD**  
Director, Center for Biosecurity, Biopreparedness & Emerging Infectious Diseases Assistant Professor, Epidemiology  
**Honor:** Fred & Eve Simon Public Health “Impact” Prize presented by the UNMC College of Public Health

**Ted R. Mikulski, MD, MSPH**  
Umbach Professor of Rheumatology and Vice-Chair for Research, Internal Medicine  
**Honor:** Top Teacher Award presented by UNMC Internal Medicine  
**Honor:** Research Mentoring Award presented by UNMC Internal Medicine

**Aaron Mohs, PhD**  
Associate Professor, Pharmaceutical Sciences  
**Honor:** Distinguished Scientist Award presented by UNMC Office of the Vice Chancellor for Research

**Rebecca Oberley-Deegan, PhD**  
Associate Professor, Biochemistry & Molecular Biology  
**Honor:** Distinguished Scientist Award presented by UNMC Office of the Vice Chancellor for Research

**Missy Ofe Fleck, PhD, RN**  
Assistant Professor, College of Nursing  
**Honor:** Positive Image of Nursing Award presented by the Nebraska Nurses Association

**Jill Poole, MD**  
Professor and Division Chief, Internal Medicine  
**Honor:** Top Teacher Award presented by UNMC Internal Medicine

**Satyanarayana Rachagani, PhD**  
Assistant Professor, Biochemistry & Molecular Biology  
**Honor:** New Investigator Award presented by UNMC Office of the Vice Chancellor for Research

**St. Patrick Reid, PhD**  
Assistant Professor, Pathology & Microbiology  
**Honor:** Innovator of the Year Award presented by UneMed

**Matthew Rizzo, MD**  
Frances & Edgar Reynolds Chair, Neurological Sciences  
**Honor:** Board of Directors Chair of the American Brain Coalition

**Nicole Rodriguez, PhD**  
Associate Professor, Integrated Center for Autism Spectrum Disorders  
**Honor:** Outstanding Teacher Award presented by the UNMC Faculty Senate  
**Honor:** Researcher Standout presented by the Munroe-Meyer Institute

**Kelly Stauch, PhD**  
Assistant Professor, Neurological Sciences  
**Honor:** New Investigator Award presented by UNMC Office of the Vice Chancellor for Research

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**VISIONARY LEADERSHIP IN EDUCATION AWARD**  
Presented by UNMC Academic Affairs  
Recognizes an individual who has demonstrated the ability to skillfully establish or administer an educational initiative or role at UNMC or a national organization

**Pamela K. Carmines, PhD**  
Executive Associate Dean, Graduate Studies Professor, Cellular & Integrative Physiology  
“I was honored to receive the Visionary Leadership in Education Award. Like many UNMC faculty, I chose a career in academia so that I could contribute to biomedical science not only through my research but also by training future scientists and health professionals. My brightest moments are seeing the successes of students and junior faculty who I have mentored along the way. Their paths to excellence are so much more than training in the classroom, and I am blessed to have been able to influence hundreds of students to push the boundaries of their skills and flourish in their future careers.”
Dr. Case named distinguished graduate student mentor

Adam Case, PhD, has been honored with the Graduate Student Association’s 2020 Distinguished Graduate Student Mentor Award.

Dr. Case, assistant professor of cellular & integrative physiology and director of the Physiological Environment Research Facility at UNMC, was presented the honor at the Graduate Studies virtual convocation and commencement ceremonies in May 2020.

“Being a junior faculty member, I never expected to be awarded such a prestigious honor,” he said. “It is really humbling to know that the hard work and effort I have put into teaching, working with and counseling students has actually made a difference in their lives.”

The award criteria focus on mentorship in the areas of research and critical thinking, communication skills and career preparation.

One of the student nominators described Dr. Case as “a rising tide that raises all boats through formal student mentorship that emphasizes scientific, professional and personal improvement.”

Another said, “His palpable dedication to science, academia and students pushes me to hold a higher standard for myself. He makes every effort to push his trainees toward their personalized success.”

Dr. Case is known for his tireless pursuit of a personal mission to improve the presentation skills of graduate students at UNMC. He annually offers a graduate course with the objective of developing the art and science of presentation skills across a variety of scenarios ranging from a poster presentation at a conference to a lay-public talk at the Omaha Public Library.

Scott Mulder, president of the GSA, said, “Dr. Adam Case was selected as this year’s recipient of the GSA’s Distinguished Graduate Student Mentor Award in recognition of not only his mentoring skills but also his dedication and enthusiasm for graduate student training across the spectrum.”

“I believe mentoring is the most important component of being faculty in academia,” Dr. Case said, “and it is also the most rewarding.”

New program offers training on protecting civilian and military populations

UNMC recently launched a new program dedicated to training students in basic science research and the scientific principles of protecting civilian and military populations. Approved in spring 2020, the new Biological Defense and Health Security (BDHS) training program is a subplan of the Medical Sciences Interdepartmental Area graduate program.

“Many basic scientists do not receive formal training in methods for understanding global public health or national security applications of their work, and struggle finding success in these areas after graduation,” said Joshua L. Santarpia, PhD, the new program director. “Our program is designed to help provide training grounded in the principles to conduct research aimed at protecting civilian and military populations, while also demanding rigorous and deep training in the technical disciplines required to support these areas.”

Students enrolled in the new program will engage in and learn processes and methodologies affiliated with the fundamental elements and scientific principles needed to thrive in the emerging global security areas related to defense against infectious disease.

TWO TRACKS ARE AVAILABLE TO STUDENTS:

- Biosurveillance and biodefense science related to national security
- Basic and clinical science related to global health

Either track will consist of a mix of technical courses designed to develop a specialized understanding of the focus area, and practical courses designed to guide the student to successful application.

John-Martin Lowe, PhD, Assistant Vice Chancellor for Interprofessional Health Security Training Education and Executive Director of Education for the Global Center for Health Security, will oversee the subplan alongside Dr. Santarpia.
DR. MEREISH HONORED BY HOMELAND SECURITY

In July 2019, the Department of Homeland Security (DHS) awarded Kay Mereish, PhD, with its highest civilian honor, the Distinguished Service Medal. It is for exceptional, distinguished and transformational public service – service that a DHS official described as “just groundbreaking.”

Dr. Mereish’s professional career spans decades and often put her in proximity to danger, whether in war zones or laboratories with potentially fatal chemicals. She spent years in the U.S. Army, retiring at the rank of colonel, worked for the United Nations as a weapons inspector before and after the Iraq War, and then served in DHS Intelligence and Analysis.

While at the DHS, Dr. Mereish was credited with being a driving force in helping confront emerging infectious diseases, notably be creating a Homeland Health Intelligence unit within the National Center for Medical Intelligence, which enables the U.S. to blend all-source intelligence and analysis on infectious disease threats.

It all began at UNMC. Upon earning her PhD in 1986, she thought she was going to work on finding another drug. But, in medical intelligence, the science is the same. “Every class you take and every experiment you do will have value in your future career,” Dr. Mereish said.

DR. CHATTERJEE BREAKS BARRIERS AT CHICAGO MEDICAL SCHOOL

UNMC Graduate Studies alumna Archana Chatterjee, MD, PhD, has been named Dean of the Chicago Medical School (CMS) and Vice President for Medical Affairs at Rosalind Franklin University of Medicine and Science.

Dr. Chatterjee is the first woman to serve as dean at CMS and is believed to be the first female of Indian descent named dean of a U.S. medical school, according to the Association of American Medical Colleges.

Dr. Chatterjee earned her PhD degree from UNMC in 1993 and also served as a postdoctoral researcher at UNMC.

“UNMC gave me the opportunity of a lifetime to come to this country and earn my PhD,” Dr. Chatterjee explained. “During my graduate training, I was encouraged to participate in many volunteer activities that enriched my experience as a student. The independence I was granted to pursue my research interests laid a sound foundation for my future clinical training in pediatrics and pediatric infectious diseases, and a career in academic medicine that has culminated in my current appointment. I am profoundly grateful for all the support and encouragement I received as a student at UNMC.”
COVID-19 Response

When COVID-19 forced UNMC to suspend almost all research activities and training conducted in our labs and facilities, graduate studies faculty, staff and students did not sit idle.

Faculty found ways to continue their work remotely, conduct scholarly research at home, and remain connected to students. Staff worked tirelessly to ensure graduate students were supported and recognized for their accomplishments and during the stressful times. And, students lent their energy and talents to help protect each other and the community.

Facility increased remote learning experiences

Due to COVID-19, faculty adapted hundreds of courses or lectures for the spring 2020 and fall 2020 semesters:

- 232 courses or lectures were moved to 100% remote learning
- 122 courses or lectures were moved to hybrid format

Students promote staying safe and wearing a mask

Graduate students were a driving force in getting the word out about the need to wear a mask. The Graduate Student Association (GSA) executive leadership team participated in a #MaskOn initiative, which encourage people to wear a mask in public and for students to wear a mask while on campus.

Virtual convocation and commencement a success

The spring 2020 Graduate Studies honors convocation and subsequent UNMC commencement were unlike any other. Normally held over two days and attracting large crowds, the 2020 ceremonies were held on a single day and in a single, online virtual session, due to health and safety measures during the ongoing COVID-19 pandemic.

According to Dr. Dele Davies, Senior Vice Chancellor for Academic Affairs and Dean of Graduate Studies:

"Virtual convocation was an opportunity for us to congratulate graduates and recognize each one for their extraordinary accomplishments and the resiliency in completing their rigorous training at UNMC.

The fact that we were not together, face-to-face due to COVID-19, does not diminish the effort they put into their academic journey."

Among those recognized at the ceremonies were 58 graduates, 33 who received their MS degree and 25 who received their PhD.

While they could not be hooded by mentors, many graduates chose to be hooded by loved ones, as they watched online at various locations.
As educators, we understand that knowledge is power. Being able to receive feedback on our educational efforts so quickly enables us to be versatile and adaptable in these times of unprecedented educational transformation. This information will allow us to improve the quality of our programs and support our faculty in continuing to provide a world-class educational experience for our students.”

Dr. Dele Davies, Senior Vice Chancellor for Academic Affairs and Dean of Graduate Studies
GRADUATE STUDIES HELPS STUDENTS ADAPT TO REMOTE LEARNING

ONLINE RESOURCES

In addition to the Keep Learning website created by UNMC Information Technologies, which assisted students’ transition to online learning, Graduate Studies launched a website to provide information solely for graduate students to address their unique needs and training questions. A version of the website was also created for graduate faculty to give further direction as it related to their students.

VIRTUAL TOWN HALL MEETINGS

Dr. Dele Davies and other Graduate Studies leadership held multiple virtual town hall meetings to touch base with students, answer their questions and give important updates.

FREE WEBINARS

To promote wellness and professional development during the COVID pandemic, graduate students were provided the opportunity to participate in more than two dozen webinars presented by the NIH Office of Intramural Training & Education during the spring and summer, as well as a series of four seminars presented by the UNMC Campus Wellness Team in March and April to build skills in stress management, meditation and relaxation, and strategies to promote healthy coping in times of uncertainty.

STAFF WORK TO HELP NEW INTERNATIONAL STUDENTS

When COVID-19 shut down many embassies across the globe, many new international students had difficulties obtaining visas. This led to only 35 new international students being able to enroll in fall 2020 — almost a 70% decrease from the previous year. In response, Graduate Studies staff worked with 30 students to defer enrollment until spring 2021.

STUDENTS AIM TO HELP “NEIGHBORS”

When COVID-19 made it difficult for elderly members of the Nebraska community to shop in-store for groceries, UNMC students set out to help. Founded by Sunny Massa and UNMC medical student Ryan Jespersen, Support Your NEighbor COVID19 is a nonprofit foundation that helps the elderly obtain groceries and essential non-food items, with a companionship component that provides weekly well-being checks.

After reaching out to the Eastern Nebraska Office on Aging and other similar programs, the two soon learned that many elderly either did not have the technology to order groceries online, they could not afford the delivery fee or they simply did not have the money to buy any. That led to a partnership with the Society of St. Vincent de Paul food pantry program.

Support Your NEighbor COVID19 volunteers bag the grocery items and personally deliver them to residents. They also provide instruction on how the items are to be disinfected before the resident takes them into their home.

Several graduate students got involved with Support Your NEighbor COVID19 after hearing about it in the UNMC newsletter.

“I came across an article in UNMC news in May 2020 describing a non-profit organization helping senior citizens during the hard time of COVID-19,” said Upasana Niyogi, PhD student in IGPBS Molecular Genetics & Cell Biology. “I have grown up with grandparents, so it was hard to imagine older people struggling to get food. The foundation was looking for volunteers to help the noble cause, and I immediately knew I wanted to help.”

Niyogi started assisting the foundation and soon became a core team member as a Packing Coordinator. “We have a group of energetic and enthusiastic volunteers from UNMC and UNO who help us with the bagging of food items,” she explained.

But the outreach goes beyond just providing the elderly with a means to acquire groceries. The companionship component of the program helps stem the isolation and loneliness some elderly are currently encountering. Community members are matched with a volunteer, and together they set up a weekly phone call so the elderly have someone to talk to and stay engaged.

“COVID-19 has been stressful and heartbreaking to almost everyone, and though I can’t do much to eradicate this stress, I feel elated to be a part of an organization working hard to help the elderly,” Niyogi said.

Learn more at supportyourNEighborCOVID19.org
Faculty use research skills to unlock secrets of COVID-19’s impact on heart health

Rebekah Gundry, PhD, is one of only 12 investigators nationwide to receive a “COVID-19 and Its Cardiovascular Impact Rapid Response Grant” from the American Heart Association.

Dr. Gundry is professor and vice chair of the UNMC Department of Cellular & Integrative Physiology, assistant chief of basic and translational research in the Division of Cardiovascular Medicine, and director of the CardiOmics Program in the Center for Heart and Vascular Research.

The one-year, $100,000 grant will allow Dr. Gundry to explore the role of glycans (carbohydrates attached to proteins and lipids) in cardiovascular injuries in COVID-19 patients.

“The COVID infection predominantly targets the respiratory system, but there have been numerous reports of cardiovascular problems in these patients,” Dr. Gundry said. “The cause of the heart injury and how it relates to the COVID infection is unknown at this point.”

Glycans play critical roles in post-viral immune reactions, including those that involve the heart.

“Recent data show that individuals with blood group A have a significantly higher risk for acquiring COVID compared to non-A blood groups, where blood group O has a lower risk,” Dr. Gundry said. “That actually has been shown in other types of viral infections, as well. We know that there are these motifs, patterns of sugars, that define your ABO blood group, and these are somehow linked to your susceptibility to infection, but we don’t know the specific structures that are conveying resistance.

“Glycans are critical to the pathogenesis of disease, and they also could potentially be informative as biomarkers in predicting which patients are going to have different types of outcomes after infection.”

The Gundry lab has recently developed a new analytical platform, called GlyThyra, which is designed specifically to bring mass spectrometry-based glycomic analyses to precision medicine. Combining this powerful technology with the clinical and biobanking resources available at UNMC was a key advantage when it came to competing for the AHA grant.

“We’re going to use this analytical platform to study glycans in the blood, and we’re going to define the ABO antigens, those ABO structures that are able to differentiate patient responses to COVID infection. Of those, which are indicative of patients who are going to be resistant to myocardial injury?”

“In addition, we’re going to be looking at those glycans that are present on a type of white blood cell, a CD4-positive T cell, that we know has a role in effects that lead to heart damage when the immune response happens. We’re going to define the changes that might be driving how these cells are involved in the start of myocardial injury.

“At the end, we should know the structures that not only are biomarkers that differentiate whether patients are resistant or susceptible to COVID infection, but those who are going to be more susceptible to the myocardial injury aspect.”

Long-term, the study could provide the foundation for future personalized medicine approaches that will be possible after defining which sets of glycan structures are predictive biomarkers for patient response, potentially allowing a prognosis at an earlier stage of infection.

Dr. Gundry’s proposal was part of an overwhelming response to the AHA, with more than 750 proposals submitted, marking it as one of the association’s largest submissions to a single topic request for applications.

“We were just blown away and so impressed to see this level of interest and commitment from the teams submitting such thorough proposals so quickly — our submission deadline was less than two weeks,” said American Heart Association president Robert Harrington, MD, Arthur L. Bloomfield Professor of Medicine and chair of the department of medicine at Stanford University.

“There’s so much we don’t know about this unique coronavirus and we continue to see emerging complications affecting both heart and brain health for which we desperately need answers and we need them quickly,” Dr. Harrington said.
Graduate Studies
University of Nebraska Medical Center
987815 Nebraska Medical Center
Omaha, NE 68198-7815
unmc.edu/gradstudies

Postdoctoral Education
University of Nebraska Medical Center
987810 Nebraska Medical Center
Omaha, NE 68198-7810
unmc.edu/postdoced