The past year has been an excellent and productive one for our graduate students, postdoctoral scholars, faculty and staff. Our students and postdocs continue to be productive in their research, with several publishing in numerous high-quality, peer-reviewed journals, successfully competing for external awards and serving on various university, regional and national committees.

Whether it is through engaging in community outreach, participating in interdisciplinary settings, or working closely with alumni, our postdocs and students are making a difference.

Several new initiatives were introduced to continue to enhance the quality of the programs we offer and to ensure our graduates and postdoctoral fellows have the best possible training to compete for excellent jobs and positions after they leave us.

The increasing demand by employers in both academic and nonacademic settings for graduates with training in a variety of skill sets beyond success in the laboratory or research field has led to our introducing greater opportunities for these transferable skills to be taught to our students.

While the totality of the accomplishments cannot be fully compiled, this report represents a summary of our excellent programs and accomplishments of our staff, students and faculty during the 2015 – 2016 academic year.

I hope you enjoy reading about the exciting activities that have taken place in Graduate Studies and Postdoctoral Education.
TABLE OF CONTENTS

2  Leadership: Leaders, Councils, and Staff
4  Beyond the Lab: Skills for All Aspects of Life
6  New Graduate Program Breaks Barriers
8  Postdoc Continues History of Excellence
10  Boot Camp Helps Turn Procrastination into a PhD
12  Postdoc Grant Writing Seminar Reaps Attendee Acclaim
14  Graduate Student Association Highlights
15  Plans for the Future: Looking Ahead to 2016 – 2017
16  Honors: Graduate Studies & Postdoctoral Education Awards
18  Facts & Figures: The Year at a Glance
22  Individual Program Information

Reaching New Heights in Health Science Education

GRADUATE STUDIES
Advanced instruction leading to MS and PhD degrees in health sciences
The mission of the Graduate Studies programs is to provide, promote and enhance the highest quality graduate education in health sciences at the University of Nebraska Medical Center.

POSTDOCTORAL EDUCATION
A liaison between postdoctoral scholars and UNMC administration
The mission of the Postdoctoral Education program is to promote and facilitate outstanding training and education of our postdoctoral scholars and their timely transition toward independent careers.

This publication is produced by the University of Nebraska Medical Center Graduate Studies & Postdoctoral Education
Editor & Art Director: Megan Blusys
Contributing Writers: John Keenan and Kalani Simpson
Designer: Jackson Troe
LEADERSHIP

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

James B. Turpen, PhD
Associate Vice Chancellor, Academic Affairs
Executive Associate Dean, Graduate Studies

Jialin Zheng, MD
Associate Vice Chancellor, Academic Affairs
Associate Dean, International Programs,
Graduate Studies

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

Pamela K. Carmines, PhD
Assistant Dean,
Engagement & Assessment,
Graduate Studies

Terri A. Vadovski
Director,
Graduate Studies
Graduate Council Members

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

Chandran Achutan, PhD  
Environmental Health, Occupational Health & Toxicology

Keshore R. Bidasee, PhD  
Pharmacology and Experimental Neuroscience

Laura D. Bilek, PhD, PT  
Medical Sciences Interdepartmental Area

Pamela K. Carmines, PhD  
Cellular & Integrative Physiology  
Office of Graduate Studies

H. Dele Davies, MD, MS, MHCM  
Office of Graduate Studies

Jered Garrison, PhD  
Pharmaceutical Sciences

Karen A. Gould, PhD  
Genetics, Cell Biology & Anatomy  
Interdisciplinary Graduate Program in Biomedical Sciences

Kathleen Hanna, PhD  
Nursing

Gleb R. Haynatzki, PhD  
Biostatistics

Monirul Islam, PhD  
Epidemiology

James C. McClay, MD, MS, FACEP  
Biomedical Informatics

Sharon Medcalf, PhD  
Emergency Preparedness

Daniel T. Monaghan, PhD  
Interdisciplinary Graduate Program in Biomedical Sciences

Kendra Schmid, PhD  
Public Health

David H. Shaw, PhD  
Medical Sciences Interdepartmental Area

Rakesh K. Singh, PhD  
Pathology & Microbiology

Shelley D. Smith, PhD  
MD/PhD Scholars Program

Joyce Solheim, PhD  
Cancer Research

Ghada A. Soliman, MD, PhD  
Health Promotion & Disease Prevention Research

Paul L. Sorgen, PhD  
Biochemistry & Molecular Biology

James B. Turpen, PhD  
Office of Graduate Studies

Fernando A. Wilson, PhD  
Health Services Research, Administration, & Policy

Kristin Wipfler  
Graduate Student Association

Postdoctoral Education Advisory Council

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  
Ophthalmology & Visual Sciences

Terrence M. Donohue, Jr., PhD  
Internal Medicine

Bryan T. Hackfort, PhD  
Postdoc Research Associate, Cellular & Integrative Physiology

Keith R. Johnson, PhD  
Oral Biology

Luis A. Marky, PhD  
Pharmaceutical Sciences

Kaushik P. Patel, PhD  
Cellular & Integrative Physiology

Jialin Zheng, MD  
Pharmacology & Experimental Neuroscience

Matthew J. Van Hook, PhD  
Postdoc Fellow, Ophthalmology & Visual Sciences

Graduate Studies and Postdoctoral Education Staff

Giovanni Jones  
Associate, Postdoctoral Education

Cody Phillips  
Associate, Graduate Studies

Vanessa Wilcox  
Admissions Associate, Graduate Studies
Being able to work in a team, problem solve and communicate effectively is necessary both in and out of the lab. Yet honing these skills can get overlooked in the quest to perfect research skills. That’s why Graduate Studies focuses on helping students succeed in all aspects of life.

After months of careful planning, the Professional Development Workshop Series effectively kicked off in October 2015. Held on the third Thursday of every month during the fall and spring semesters, the series focuses on helping graduate students grow skill sets that transfer from job to job and are useful regardless of a chosen career track.

The series started with an evening workshop highlighting how to tackle a large writing project, like a dissertation or thesis. Keynote speaker Travis Adams, PhD, often drew laughs from his audience as he detailed the frustrations and challenges of writing a big project, frequently drawing from his own experience. But his knowledge and passion on the subject made the presentation compelling as well as informative.

“I think often people struggle in graduate school with big writing projects because they don’t have a clear plan,” Dr. Adams said.
Heather A. Talbott, a PhD candidate in Biochemistry & Molecular Biology, said she came to figure out how to write a dissertation. “The presentation was awesome,” she praised. It reminded her of the importance of planning. “You can’t just wait for it to happen,” she explained.

Pamela K. Carmines, PhD, Professor of Cellular & Integrative Physiology and Assistant Dean for Graduate Studies, concurred. “Dr. Adams gave an outstanding presentation,” she said. “I appreciate him sharing his expertise, and I think he provided great strategies — and encouragement — as our students prepare for writing their dissertations and theses.”

The next workshop tackled the theory and philosophy of critical thinking and why it is important to be able to think critically. This was the first in a series of three critical and creative thinking workshops.

“Critical and creative thinking skills are necessary for graduate students to thrive as professionals in our modern-day environment. To be successful, students must develop the skills needed to identify new problems, redefine old problems in new ways, and to generate novel and useful ideas to solve complex and ambiguous problems,” said Victoria Kennel, PhD, Assistant Professor in the College of Allied Health Professions and keynote speaker at two of the events.

There were two key goals the presenters hoped to accomplish, explained Dr. Kennel. First, to provide foundational knowledge of critical and creative thinking skills and processes, and second, to build upon this foundation by helping students apply these two skills in their own work.

“As a result of these workshops I think many of the students’ eyes were opened to the importance of honing critical and creative thinking skills as applied to their own work and life,” said Dr. Kennel.

Seven events are planned for the 2016 – 2017 academic year with topics including how to effectively communicate research ideas and results, ways to work with different personality types, negotiation essentials, and more.

These programs will not only tremendously increase the marketability of our students after their training, but will also directly impact the quality of their contributions to their advisors’ research programs while they are being trained at UNMC.

H. Dele Davies, MD, MS, MHCM
Vice Chancellor for Academic Affairs and Dean for Graduate Studies
NEW GRADUATE PROGRAM BREAKS BARRIERS

The first class in the Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS) begins their studies in fall 2016. This new program reorganizes and unites six basic science PhD-granting programs under one umbrella.

The IGPBS aims to break open department boundaries, freeing students to follow their diverse interests or collaborate with faculty from other areas. “Traditional barriers between departments are minimized to facilitate and encourage a high degree of inter-collaboration and also to enable new students to explore who they are and where their academic passions lie,” explained Christopher Thompson, a student new to the program. Other students agreed. “I chose the IGPBS due to the integrative nature. My experience so far has been great and I would recommend it to others,” said Eliezer Lichter.

Faculty are also experiencing the freedom of the new structure. While they used to be tethered to students and labs within their departments, faculty can now be affiliated with two or three different programs. They can contribute to committees, add expertise to didactic training, give students a more well-rounded research experience, and boost research across disciplines.

Better training under the IGPBS model will enable UNMC to be even more competitive in recruiting students, explained the IGPBS co-directors, Karen A. Gould, PhD, and Daniel T. Monaghan, PhD, as it will provide more research opportunities and a more robust interdisciplinary training for students.

Potential students are definitely taking notice. “The IGPBS makes UNMC stand out when I talk to recruits. They like the many choices within each of the programs, the additional training options to help them in their future careers, and the ways they can get connected on campus,” stated Kimberly Rothgeb, IGPBS Program Coordinator.

As with any new program, elements are being evaluated on an ongoing basis to determine if further improvements can be made, Dr. Monaghan said. To move to highly collaborative training that seamlessly crosses departments requires some change in culture, and that doesn’t happen quickly. But now there is a structure to support that change.
What do students think of the new program?

When I was reviewing other programs, I kept thinking how vital it was for new scientists to collaborate with researchers from different fields. To generate the kind of paradigm-shifting, life-altering, cutting-edge discoveries necessary to save patients and push humanity ahead of obstacles, we need input from an array of experts. The IGPBS was crafted to provide an answer to that issue.

I thought I wanted to work with cancer therapeutics. But in my first semester, I was able to rotate through a neuroscience lab and an immunology lab. Ultimately, I realized I was most interested in cancer immunology. Without the IGPBS, I might have missed this interest and not learned the skills required to pursue it.

Christopher M. Thompson, uncommitted student

I chose the IGPBS because I anticipated it would offer a liberal experience where traditional boundaries set by scientific fields would be both traversed and unified.

One aspect of the program I particularly like is that it has exposed me to new subject matter that I previously did not know kindled my scientific interests.

My experience in the IGPBS so far has been exceedingly enlightening and stimulating. The diverse didactic and research components of my training are exciting as I imagine what I might accomplish in science.

I would recommend the IGPBS as I believe the amalgamation of topics we learn will prepare us to succeed as critically thinking scientists.

Scott Mulder, committed student

I opted for the IGPBS because I wasn’t seeing this kind of flexibility in any other biomedical PhD program. Since students are not always sure which principle investigator or lab environment would be the best fit, the IGPBS lets its uncommitted students rotate among departments. This is especially beneficial for international students who are interviewed virtually and don’t get the opportunity to visit labs or talk to current students. The flexibility to choose among six doctoral programs and the choice of collaborations are the coolest parts of the IGPBS. If someone is not sure about the research field or PI, the IGPBS is the place for them.

Navneet Kaur, uncommitted student

During my graduate study application, it was tough to decide which program to choose because I am interested in many areas. The IGPBS offers me a great opportunity to explore six different doctoral programs, so I have time to figure out my future research topic. The professors involved in the IGPBS are passionate about research, which inspires me. In addition, I think the orientation is quite helpful because we can quickly get an overall idea of each field of study. I think the IGPBS provides a great start toward a scientific career.

Zhiqiu Xia, uncommitted student

I like the freedom to rotate in different research areas that I might not have experienced in a department-based degree program. I would and I do recommend the IGPBS to others. I have many friends still at UNO who inquire about the program, and there is certainly a path worth forging for novel dissertations here — and a ton of wonderful faculty willing to let us get creative.

Maggie Bartlett, committed student
In 2015, Matthew Van Hook, PhD, received the UNMC Postdoctoral Excellence in Research Award. Less than a year later, he accepted an assistant professorship at UNMC in the Department of Ophthalmology & Visual Sciences.

“Some of the goals of that award are to recognize postdocs who have conducted good research, but also research that is moving them on the path toward independence,” Dr. Van Hook said. “UNMC likes to see postdocs who are developing independence of thought, the ability to share and talk about their research, and the ability to push their research toward publication.”

These attributes were not lost on his departmental colleagues when a faculty position opened up. Of course, Dr. Van Hook, who arrived at UNMC in 2011 to work with his mentor, Wallace Thoreson, PhD, Vice Chair for Research and Professor in the Department of Ophthalmology and Visual Sciences, had plenty of time to impress his colleagues.
But the award provided another accomplishment.

“Receiving that award, in some respects, helped recognize some of those practical steps toward research independence that I had taken as a postdoc,” explained Dr. Van Hook. “Also, being able to point to that award helped support the case that I had been moving toward independence as a postdoc.”

“We are very delighted with Matt’s trajectory as a postdoc and becoming an independent investigator in a timely fashion,” said Iqbal Ahmad, PhD, Associate Dean and Director of Postdoctoral Education. “The award recognizes postdocs who have the whereabouts to blaze a new trail, distinct from their mentors.”

Dr. Van Hook continues to do just that as an independent researcher. While he won the award for his research on how rod and cone photoreceptors transmit information to other cells in the retina, now he is setting up his lab to explore glaucoma.

“One of the challenges of taking an independent position at the same institution where you were a postdoc is that you need to make clear that you are an independent researcher distinct from your postdoc mentor,” Dr. Van Hook said. “So I am moving into different questions that are a bit more disease-focused.”

He credits the UNMC Postdoctoral Education program with helping him determine his professional path.

“When I started the postdoc position here, I was trying to decide what I wanted to do with my life, whether I wanted to pursue a position at a teaching institution or try for a more research-intensive job,” he said. “Dr. Thoreson, as well as a couple of other faculty in the department, really encouraged me to apply for the position here.”

---

**What is the Postdoctoral Excellence in Research Award?**

The Postdoctoral Excellence in Research Award recognizes postdocs for their research accomplishments through the presentation of a certificate and a cash award. The recipients give an oral presentation attended by their peers and graduate faculty. The inaugural presentation of the award was in 2015.

“The postdoctoral education council, with input from our postdocs, came to a conclusion that the achievements and accomplishments of many were going unrecognized because of the time-bound criteria of the Pathway to Independence Award, which is only open to postdocs during their first three years at UNMC,” Dr. Ahmad said.

“This new award allows everyone to compete regardless of the length of his or her tenure at UNMC. We are very happy for the winners, and the council congratulates them for their remarkable accomplishments,” he concluded.
It is often easy to become unmotivated or distracted when presented with a daunting task like writing a dissertation. That is why UNMC held its inaugural dissertation boot camp in August.

Emerging trends in nationwide data indicate participants who complete a dissertation boot camp finish their dissertations and earn their degrees sooner than other students. So Graduate Studies set out to help PhD candidates at UNMC become focused, productive dissertation writers.

Nine individuals took part in the four-day camp. “They were at every stage of writing their dissertations,” said Pamela K. Carmines, PhD, Assistant Dean for Graduate Studies and leader of the event. “Some just needed to get started, and others planned to defend within the next three months.”

Travis Adams, PhD, director of the Writing Center at the University of Nebraska at Omaha, also was actively involved in several aspects of the boot camp.

The event was styled like a discussion group and workshop, together with four to six hours of dedicated
writing time each day. Topics included writing strategies and tips for being more productive.

“If you write early in the morning, for example, you don’t spend the rest of the day procrastinating or worrying about when you’re going to fit it into the rest of your day,” said Dr. Carmines. The discussion grew around the attendees’ needs and the specific obstacles they were facing, she added.

Dr. Adams said the students were productive and asked good questions about the writing process. “We talked a lot about staying motivated beyond the boot camp, which is often a challenge,” he said.

A “Grammar Hammer” presentation by Myron Toews, PhD, Professor of Pharmacology & Experimental Neuroscience, helped participants recognize and avoid common errors in scientific writing.

Heather Brown, MA, Associate Professor and Head of Collection Services in the Library of Medicine, walked participants through the procedure for electronically submitting a dissertation.

Other discussions centered on proper formatting and resources to access once boot camp was completed.

Based on the success of the first boot camp, Graduate Studies plans to hold similar events each year in August and early January. The next boot camp is scheduled for Jan. 3 – 6, 2017.
In May, Postdoctoral Education held a “Getting Started Writing Winning NIH Grant Proposals” seminar to teach attendees how to write a grant application, a skill that is seldom formally taught to senior graduate students and postdoctoral scholars.

This all-day presentation is the cornerstone of the Grant Writers’ Seminars and Workshops series put on by Postdoctoral Education. It comprehensively addresses both practical and conceptual aspects that are important to writing competitive grant proposals.

Each presentation was tailored to meet the needs of the audience, e.g., to focus on the funding agencies that are of greatest interest to the attendees. Emphasis was placed on doing the “extra” things that can make the difference between success and failure.

Participants are taught:

- How to write with a linear progression of logic, which leads reviewers through an application without them knowing that they are being led
How priority scores are calculated

Examples of facility and administrative (indirect) costs

How to analyze a critique in anticipation of resubmission

How proposal writing relates to building an academic career

Coping strategies to overcome the fact that applicants are writing for two different audiences (the assigned reviewers who read the application in its entirety, and non-assigned reviewers who may have read little, or nothing, of the proposal before the review panel meets)

The seminar’s content was intended for senior graduate students, postdoctoral research fellows, and faculty members who aspire to tenure and have never written a successful grant application. This year, over 50 attendees showed up to learn the tips and tricks of grant writing.

All participants received an extensive handout, as well as a field-relevant copy of The Grant Application Writer’s Workbook, which included recommendations regarding how biosketches can be used to help persuade reviewers that postdoc applications are one of the few worthy of funding.

This new approach to preparing the biographical sketch came about in an ongoing effort to give NIH reviewers sharper tools with which to “identify the strongest candidates for support.”
GRADUATE STUDENT ASSOCIATION HIGHLIGHTS

The Graduate Student Association (GSA) advocates for graduate student interests across campus. Throughout each semester, the GSA hosts social events, seminar speakers and workshops to aid students in their professional development.

GSA uses student “powers” to bring cheer to young patients

Members of the GSA swapped their street clothes for superhero gear, teaming with the Nebraska Medicine department of child life to throw a superhero party for pediatric patients.

“Staying in the hospital isn’t always fun. We wanted to bring a little bit of joy to these pediatric patients,” said UNMC graduate student Heather Talbott.

At the party, the kids were able to decorate capes and masks. Students also gave the patients their own superhero ID badges.

Graduate student forums give international students a voice

The GSA, in partnership with the Student Senate and the International Student Association, instituted a new series called “Breaking Barriers.” This monthly forum allows international students to share information about their homeland with their fellow UNMC students, including addressing misconceptions.

So far, there have been presentations on the United States, Turkey, China, and Saudi Arabia. Upcoming forums will focus on Mali, Iran, and India. The events routinely draw as many as 50 people per speaker.

“The goal is to embrace UNMC’s diversity and break down barriers between cultures, to develop a better understanding of the people with whom you’re studying and working, and to give a voice to all those different cultures,” said Tyler Scherr, 2015-2016 GSA President.
PLANS FOR THE FUTURE: LOOKING AHEAD TO 2016–2017

The 2016–2017 academic year is shaping up to be even more exciting than the previous one. Graduate Studies and Postdoctoral Education are working to launch new programs and services designed to help students and postdocs with their career goals.

Launch of a New Purdue Pharma Scholars Award Program
Our new Purdue Pharma Scholars Award Program fosters graduate training in pharmaceutical sciences and neurosciences, especially pain research, offering students funding and opportunities to interact with Purdue Pharma researchers. The opportunity will only be available to three graduate students every year, so it is expected competition will be fierce for these spots. Second and third year PhD students are eligible.

Kick Off of Postdoc Management & Writing Seminars
Postdocs will have the opportunity to learn and grow from the perspective and shared experiences on establishing and running a research program from different principle investigators during the Postdoctoral Lab Management Seminar series. Some of the topics include how to chair a basic science department, tips for embarking on a tenure track faculty position, and ways to effectively run a lab. Postdocs will also be able to attend another writing seminar, Effective Writing Strategies: 9 Parts of Speech in 6 Weeks.

Introduction of a Bio Nebraska Collaboration
We are beginning a new partnership with Bio Nebraska, an association of major life science biotechnology companies that advocates for its members to foster the growth of life sciences within Nebraska. As our relationship evolves, we will have speakers, facility tours, and other communication with member companies of Bio Nebraska, and hope that this will evolve to real opportunities for our students.

External Advisory Board
The Graduate Studies External Advisory Board is making plans to highlight and educate the public about the important role of graduate students in not only supporting current discovery within UNMC, but also the critical role their training plays in ensuring a strong pipeline of excellent future health science researchers.

The Board will ultimately serve as passionate advocates for graduate students and enthusiastically advance the UNMC Graduate Studies program, build and articulate the Graduate Studies program case for support, and open doors to potential donors, friends, and community partners for funding and other engagement opportunities, including internships, career placement opportunities, and more.
HONORS

Graduate Students of Distinction

Recognition as a Graduate Student of Distinction is reserved for students who received: a fellowship open to national/international candidates; an award based on presentation of research results at a national meeting; an appointment to a national scientific society or professional association standing committee; or a similar accomplishment.

Crystal M. Epstein
PhD Candidate
Nursing
Honor:
NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship (F31)

Michael E. Price
PhD Candidate
Cellular & Integrative Physiology
Honor:
NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral MD/PhD Fellowship (F31)

Valdeep Saini
PhD Candidate
Medical Sciences
Interdepartmental Area - Applied Behavioral Analysis
Honor:
Society for the Advancement of Behavior Analysis Innovative Student Research Dissertation Grant

Anand Suresh
PhD Candidate
Biochemistry & Molecular Biology
Honor:
American Heart Association Predoctoral Fellowship

Bangchen Wang
PhD Candidate
Cellular & Integrative Physiology
Honor:
NIH Ruth L. Kirschstein National Research Service Award Individual Predoctoral MD/PhD Fellowship (F31)
Graduate Studies Convocation Awards

Hollie M. Siebler, PhD  
Cancer Research

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

Paul Fey, PhD  
Professor and Vice Chair  
Pathology & Microbiology

Graduate Student Association’s Distinguished Graduate Mentor Award:  
given to a faculty member for exemplary support in developing graduate students

James B. Reinecke, PhD  
Biochemistry & Molecular Biology

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

Postdoctoral Education Awards

Matthew Van Hook, PhD  
Ophthalmology & Visual Sciences

Excellence in Research Award:  
recognizes postdocs for their research accomplishments through an oral presentation

Jing Li, PhD  
Pharmaceutical Science

Pathway to Independence Award  
recognizes postdocs for excellence in the process of transitioning to an independent career
Graduate Studies Enrollment

In 2015–2016, Graduate Studies had 125 students graduate.

UNMC Graduate Studies Fellowship Applications

UNMC offers several two-year fellowships to graduate students selected during an annual competition.

Total Dollar Value

The total value of UNMC Graduate Studies Fellowships awarded (including supplements) was $1,287,826.
The total number of individuals in the Postdoctoral Education program increased by 12% over the previous academic year.

Over 95 faculty members mentor postdoctoral scholars.

Postdoctoral Fellowship Awards
Two postdoctoral fellows were sponsored with $174,166 from NIH Ruth L. Kirschstein National Research Service Awards (NRSA) for Individual Postdoctoral Fellows (F32). Three fellows were sponsored with $197,876 awarded as American Heart Association (AHA) Postdoctoral Fellowships.
**Postdoctoral Scholars by Area**

- College of Medicine: 52%
- College of Dentistry: 2%
- College of Pharmacy: 17%
- College of Allied Health Professionals: 1%
- College of Nursing: 2%
- Research (UNeMed): 1%
- Eppley Institute: 9%
- Munroe-Meyer Institute: 14%

**Postdoctoral Scholars by Gender**

- Female: 39%
- Male: 61%

---

**Graduate Students by Residency**

- 60% of students are US citizens
- 38% of students are foreign students
- 2% of students are permanent residents
### Graduate Studies Degree-Granting Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>MS</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry &amp; Molecular Biology</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Biomedical Informatics</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Biostatistics</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Cancer Research</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Cellular &amp; Integrative Physiology</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Emergency Preparedness</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Environmental Health, Occupational Health &amp; Toxicology</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Epidemiology</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Genetics, Cell Biology &amp; Anatomy</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Health Promotion &amp; Disease Prevention Research</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Health Services Research, Administration &amp; Policy</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Medical Sciences Interdepartmental Area</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Pathology &amp; Microbiology</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Pharmaceutical Sciences</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Pharmacology &amp; Experimental Neuroscience</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
Biochemistry & Molecular Biology

The goal of the Biochemistry & Molecular Biology graduate program is to prepare our students for successful careers as future scientists and educators. The Department of Biochemistry & Molecular Biology offers programs of graduate study leading to MS and PhD degrees. The MS program is designed to provide a background in analytical and experimental biochemistry and includes with or without Master thesis. The MS program may increase the likelihood of acceptance into medical school or industry. The PhD program is designed to provide a more comprehensive knowledge of the biochemistry and molecular biology of living organisms and includes the research and training experience necessary for the development of independent investigators.

Currently 47 students are in the PhD program, which includes six new students this year. Our students have been highly successful in obtaining UNMC, regional, and national graduate fellowships.

The Biochemistry & Molecular Biology Department started an annual research symposium to highlight all of the outstanding research being performed in the graduate program. Knowing our students work incredibly hard, at the symposium, we recognize our student nominee for the Thomas Jefferson Ingenuity Award, our third-year student who had an Outstanding Performance in the Comprehensive Examination, our first-year student with the Highest Grade Point Average, and students receiving awards at the Midwest Student Biomedical Research Forum and at the Annual Research Symposium for Best Oral and Poster Presentations.

Biomedical Informatics

The University of Nebraska Joint Biomedical Informatics (BMI) graduate degree program's mission is to develop the next generation of biomedical informaticians who will advance research and practice in contemporary information and knowledge management using innovative evidence based approaches to improve human health.

The program was approved by the Board of Regents in 2013 as a shared degree program between UNMC and UNO. The BMI program consolidated a number of Informatics specialty tracks in other degree programs such as MSIA and the UNO CS departments into a university-wide program.

Since its inception, the BMI program has grown to include Masters and Doctoral students in health informatics, bioinformatics, imaging informatics and laboratory informatics. The BMI program affiliated faculty come from UNMC, UNO, and UNL colleges to provide a truly interdisciplinary education experience for BMI students. Students in the BMI program will get an opportunity to work on a wide-range of biomedical informatics projects outside of their research project by volunteering their services in the Bioinformatics and System Biology Core with Dr. Babu Guda. Students in the BMI program also gain experience supporting the Enterprise Clinical Research Data Warehouse with Dr. McClay and laboratory informatics with Dr. W. Scott Campbell.
Biostatistics

The PhD in Biostatistics is designed to provide students with the instruction and research experience necessary to become high-quality academic faculty members, researchers and leaders in biomedicine and public health throughout Nebraska, the country, and the world. They may also choose careers as scientists in government and private research agencies.

The curriculum design of this program is consistent with the core competencies of Biostatistics and strongly emphasizes the acquisition of applied skills as well as the theoretical mathematical foundations of Biostatistics.

The primary focus is in the following areas of Biostatistics: clinical trials; study design; survival analysis; generalized linear models; longitudinal analysis; survey methodology; and analysis of microarray gene-expression data and other high-dimensional data.

Since starting the PhD program in 2012, the program now has eight students. PhD students in Biostatistics hold graduate and teaching assistantships in the Department of Biostatistics, Department of Pediatrics and the Swanson Center for Nutrition.

Cancer Research

The Cancer Research PhD Program participates in a National Cancer Institute (NCI) T32 Grant-supported training program, along with some of the other UNMC PhD programs in which laboratories are involved in research related to cancer. The students supported by the NCI Training Grant take an additional Special Topics course in seminar presentation to further develop their presentation skills and obtain input from other students and faculty mentors on their data.

The new Cancer Research Program course on intensive training in translational cancer research was formally approved by the UNMC Graduate Council during this past year. Three students completed the Cancer Research Program Special Topics course focused on individualized training in predoctoral fellowship grant application preparation, which was offered for the first time in 2015-2016.

In 2015-2016, one MD/PhD student in the Cancer Research Program received an NIH F30 Award, and another Cancer Research Program student now holds a National Science Foundation Graduate Research Fellowship. A third Cancer Research Program student received notification from the NIH that he will receive an NCI F99/K00 Predoctoral to Postdoctoral Transition Award effective in the coming academic year (beginning in September). In addition to the PhD students who received the individual national fellowships in 2015-2016, nine Cancer Research Program students earned UNMC fellowships (although the funding from two of those fellowships had to be declined due to receiving NCI Training Grant support). Furthermore, several Cancer Research Program students received institutional predoctoral fellowships during the past year (from the NCI T32 Training Grant or from a U.S. Department of Education-sponsored graduate training program).
Cellular & Integrative Physiology

The Cellular & Integrative Physiology (CIP) graduate program provides students with diverse training in interdisciplinary approaches ranging from the molecular level to the whole organism. The MS program is designed to enhance the student’s preparation for medical or dental school, while the PhD program provides the research and training experiences required for development of independent investigators who have career goals in academia or industry.

During the 2015-2016 academic year, five students earned the PhD in Cellular and Integrative Physiology. The CIP graduate program continues to foster the development of “citizen scholars” – students who excel not only in research and scholarly activity, but also as contributors to the community. CIP students participate in science outreach through their efforts to introduce elementary, middle and high school students to the field of physiology through hands-on activities in the classrooms across the Omaha metropolitan area. This year, two CIP students were recognized by the American Physiological Society for taking the lead in planning these “PhUn Week” events for five or more years.

Students enrolled in CIP this academic year have held leadership positions in student government and have served on committees at the national level for their professional organizations. They continue to successfully compete for extramural fellowship support, with over 60% of the students enrolled in the PhD program during this academic year having held fellowships from NIH or the American Heart Association at some point during their graduate training. This success reflects well on the efforts of faculty mentors to develop individualized training plans that suit the unique needs of each student. In accord with the concept of physiology as “the science of medicine,” the program has continued to attract future physician-scientists, with MD/PhD Scholars representing approximately half of the PhD students enrolled in CIP. It is anticipated the interdisciplinary and translational approach to research that attracts these students to CIP will continue to flourish as the program reorganizes into the IGPBS doctoral program in Integrative Physiology & Molecular Medicine, with CIP faculty at the forefront of efforts to develop an innovative curriculum for this new endeavor.

Emergency Preparedness

The MS in Emergency Preparedness prepares professionals in a world where emergency preparedness and response skills are essential to the public health infrastructure, and ultimately build community resilience. Events explored include natural disasters, intentional acts of terrorism, and new infectious disease threats. The curriculum is designed to be reflective and inclusive of current and nationally endorsed competencies in emergency preparedness leadership, communication, information management, practice improvement and planning, and worker health and safety. A new course in high-level biocontainment is scheduled to be added in 2017. This program attracts students from across the nation and the globe, creating a future network of professionals to prepare for the next disaster. Students also belong to a UNMC Student Response Team and gain valuable experience in outbreak management, mass dispensing, and monitoring social media in a disaster. Research opportunities are abundant as partner organizations look to our students and faculty for expertise. Current studies are underway with partners such as the American Red Cross, the American Healthcare Association, the national Hospital Preparedness Program, and others.
Environmental Health, Occupational Health & Toxicology

The Environmental Health, Occupational Health & Toxicology graduate program provides students with the knowledge base, field and laboratory skills, and problem-solving abilities to become independent, innovative professionals using state-of-the-art approaches to address scientific problems in the fields of environmental health, ecological health, occupational health and safety, and toxicology.

Our PhD program offers three educational tracks to meet the research interests of our students. The tracks are: Environmental and Occupational Hygiene, Occupational Biomechanics, and Toxicology. Objectives are to provide students with: 1) a basic knowledge in ecological, environmental, agricultural and occupational health, as well as toxicology; 2) a broad understanding of relevant problems in the various areas of ecological health (effects of contaminants and practices on air, water, soil, and ecosystems), environmental health (effects of environmental contaminants and practices on human health), occupational health and safety, or toxicology, with particular emphasis on agriculture; and 3) the ability to apply this information to important scientific questions and solve problems in these areas.

Our faculty conducts research in areas of environmental, agricultural and occupational health. Often their research and service activities are accomplished through multi-disciplinary collaborations within and outside the College of Public Health, the UNMC campus, and the NU system. This broad approach enables them to tackle difficult issues in order to improve the health of our community, especially rural and agriculture-based communities both in Nebraska and around the world. Over 20 PhD students have graduated from this program.

Epidemiology

The Epidemiology graduate program prepares practitioners and researchers for positions in government agencies, the private sector, and academia. Students learn to design, conduct, and analyze epidemiologic research studies, interpret research findings, and apply findings to solve public health problems or discover causes of diseases.

The Epidemiology PhD program is one of the newest programs in the College of Public Health, but has been successful in recruiting a large number of promising students beginning in August 2012. During 2015 - 2016, we had a total of 22 students. Four students have since graduated with a PhD in epidemiology.

Faculty and students in the Department of Epidemiology conduct research on a broad range of epidemiologic topics. The areas the department emphasizes include cancer, infectious and emerging infectious diseases, viral pathogenesis, bio-preparedness, biocontainment, perinatal conditions, mental health, substance abuse, genetic and environmental factors, community-based participatory research and mixed methods, patient-centered clinical outcomes research, global health, and epidemiologic methods.
Genetics, Cell Biology & Anatomy

During the 2015-2016 academic year, nine Genetics, Cell Biology & Anatomy (GCBA) students completed the PhD degree. Students who completed their degrees have moved on to a variety of positions including postdoctoral positions at La Jolla Institute for Allergy and Immunology.

Fourteen students completed the one-year MS Medical Anatomy program and two students completed a two-year degree program in Medical Anatomy. Of the 16 students who matriculated in the inaugural year of the MS Medical Anatomy program (2014-2015), 12 (75%) are now enrolled in a professional (medical, physician assistant, or physical therapy) school program or PhD program. Seven of the 14 students who completed the one-year MS Medical Anatomy program in 2015-2016 are enrolled in or have gained admission to professional or graduate school. We are continuing to expand our Anatomy teaching track PhD program; there are currently four students enrolled in this specialized PhD track.

Students in the GCBA graduate program organized and participated in the second annual student research forum. At the forum, graduate students had the opportunity to share their research with faculty and other students via oral or poster presentations. The forum also included opportunities to socialize with others in the department and to discuss ways to enhance graduate education in our program.

Finally, the GCBA graduate program continued its effort to recognize the accomplishment of our students by making annual “outstanding” and “excellent” student awards; this year’s recipient of the outstanding student award was Ashima Shukla, and the excellent student award went to Shashank Srivastava.

Health Promotion & Disease Prevention

The Health Promotion & Disease Prevention (HPDP) PhD program is based in the Department of Health Promotion, Social, & Behavioral Health. The program emphasizes transdisciplinary and interprofessional training. As such, it strives to enable populations and communities to achieve optimal health — a balance of physical, mental and social health — through social and behavioral change and the creation of environments that are conducive to healthy lifestyles. Through an interdisciplinary approach, we integrate the expertise of faculty with diverse backgrounds in social and behavioral sciences.

HPDP continues to offer graduate students research and mentorship opportunities through the Gretchen Swanson Center for Nutrition and the Center for Reducing Health Disparities, both Centers have affiliate faculty with the Department. In addition, interested and eligible graduate students can seek funding from the Cancer Epidemiology Education in Special Populations (CEESP) Program to travel and conduct summer research in underserved sites or international settings. The Department also continues to offer travel awards for conference attendance on a competitive basis.
**Health Services Research, Administration & Policy**

The PhD in Health Services Research, Administration & Policy is offered through the Department of Health Services Research and Administration, UNMC College of Public Health. The program educates students to be scholars and health services researchers for careers in academia as well as large corporations, insurance companies, government agencies, health care organizations, and consulting firms.

Seventeen students were enrolled in the program from July 2015 to August 2016, which was a very good year in terms of research, awards and job placement. In this period, our students led or collaborated on 20 peer-reviewed publications, five policy reports, and a book chapter. One student graduated and was placed as an assistant professor at the University of Wisconsin-Milwaukee. Three exceptional students matriculated into the program in 2015.

We expect continued success in the productivity and placement of our PhD students in the future.

**Medical Sciences Interdepartmental Areas**

The Medical Sciences Interdepartmental Areas (MSIA) is an interdepartmental program intended for those who wish to pursue individually designed programs of an interdisciplinary nature within the medical sciences. Individual programs of study may be developed in a variety of research areas, including: immunology, drug metabolism, human genetics, neurological sciences, oral biology, quality improvement health services research, medical nutrition, clinical and translational research, and others.

The MSIA graduate program had 17 MS students and 10 PhD students graduate in the 2015-2016 academic year. The interdisciplinary programs of MSIA prepare our alumni for a variety of careers and unique positions. Our numbers continue to grow with 30 new admits starting in the fall 2016.

Saini Valdeep in the MSIA ABA program was honored with the Heartland ABA Award for Conference Poster of Excellence.

The Clinical and Translational Research Mentored Scholars Program (CTR MSP) has its largest cohort yet with eight new scholars starting in the fall 2016. Sasha Shillcutt, MD, an associate professor of anesthesiology and a recent CTR MSP graduate, was recognized by the American Medical Association Women’s Physicians Section as one of 2016’s Inspirational Physicians. She was also recognized as UNMC Distinguished Scientist/New Investigator for 2015.
Nursing

The Nursing PhD graduate program prepares nurse scientists to be transformational leaders in the discovery of knowledge to improve health of individuals, families, and communities, and to advance the profession of nursing. The program is proud of its research strengths in the broad areas of health promotion, chronic illness management, health systems and quality, nursing education, health policy, health disparities, and rural populations. The College of Nursing faculty guides students’ dissertation committees that focus in these areas. Our curriculum is consistent with recommendations for nursing PhD program by the American Association of College of Nursing. We offer full-time and part-time options, with about 50% of students are full-time. Students can enter after the MSN or BSN degree. The MSN entry to PhD is designed for both FT and PT students but our BSN-PhD program is currently designed for FT students only. The CON has 5 campuses across the state of Nebraska – Omaha, Lincoln, Norfolk, Kearney and Scottsbluff. Classes are held via video technology such as Adobe and use Blackboard or Canvas as a format for asynchronous discussions. About 75% of them are synchronous and 25% asynchronous.

During 2015-2016 academic year, there were 32 PhD students in the program and 8 graduates. Although the majority of students are from Nebraska, current students are from several states such as California, North Dakota, South Dakota, Iowa, and Michigan. Two students were awarded prestigious NRSA awards.

Pathology & Microbiology

The Pathology & Microbiology graduate program stresses molecular biological, immunological and genetic mechanisms of disease, while intimately combining clinical and applied research with basic research interests and providing the most rigorous and inspiring training for graduate students in the areas of microbiology, pathology, immunology, host-pathogen interaction and related fields. This diversity of research interests offers a variety of distinctive and highly individualized opportunities for graduate training. The flexibility of this graduate program accommodates a wide-range of student interests and backgrounds. The learning experience is enhanced by an outstanding seminar series and journal clubs in which the most current immunology, pathology and infectious disease research is discussed.

The graduate program involves nearly 40 primary faculty members within the department and 48 courtesy faculty members across campus, providing a high faculty/student ratio, while promoting an excellent environment for collegial interactions and stimulating exchanges of ideas. We also have strong relationships with other University of Nebraska’s campuses such as UNO and UNL, which provides our students with even greater opportunities for collaborative research efforts.

The graduate program supports PhD, MD/PhD and MS level degree training programs. Students in the pathology and microbiology graduate program participate in coursework and laboratory research that will prepare them for competitively securing rewarding research and teaching careers in academic institutions, biotechnology industries, biomedical laboratories, and government agencies.
Pharmaceutical Sciences

The Pharmaceutical Sciences Graduate Program (PSGP) provides expertise in all areas of pharmaceutical sciences, including drug discovery, drug delivery, nanomedicine, biophysics, and pharmacokinetics and drug metabolism. The mission of PSGP is to provide an integrated, multidisciplinary graduate education in pharmaceutical sciences and to prepare PSGP students for future careers in basic pharmaceutical research and education, translational research, academic and industrial research and development, and government and regulatory agencies. PSGP is one of the largest PhD programs at UNMC and the only graduate program within the UNMC College of Pharmacy, ranking sixth in the NIH funding per faculty among all Colleges of Pharmacy in the US. Current research in the PSGP is focused on discovery and development of new drugs and drug delivery methods for the treatment of cancer, infectious diseases, and inflammatory disorders.

The program has undergone significant improvements in 2015. The curriculum was updated and unified with the goal of providing all students in the program common foundation in pharmaceutical sciences. There are now three new required courses for all PSGP students consisting of Physical Pharmacy, Pharmaceutical Chemistry, and Pharmaceutical Analysis.

Pharmacology & Experimental Neuroscience

The PhD Program in Pharmacology & Experimental Neuroscience (PEN) is one of several PhD granting programs at UNMC. Research in the department is geared primarily toward understanding the molecular and cellular mechanisms responsible for the neurodegenerative and cognitive decline in susceptible individuals, and to develop therapeutic strategies to alleviate them. The diseases include Autism, Schizophrenia, Parkinson’s disease, Alzheimer’s disease, dementia from infections (e.g., HIV), metabolic diseases (e.g., diabetes), trauma (e.g., traumatic brain injury), and drugs of abuse. New chemical entities as well as novel therapeutic formulations are under development. Research is also done in the area of pulmonary diseases. Studies are conducted using pre-clinical models and clinical trials.

PEN continues to receive the bulk of its funding from the NIH, ranking in the top 10 nationwide. New educational initiatives including the development of new courses in system and basic neuroscience, humanized mouse models and scientific writing were developed to increase interactions and instruction for students. Prospective students applying to PEN continue to have a thorough review of their applications and face-to-face interview to gauge interest.

The department provides financial support that includes a stipend, tuition waiver and health insurance. The curriculum consists of two years of course work (a minimum of seven credited courses) and three years of research. This structure ensures intensive training in conducting and disseminating research. Students are also provided the help needed to write and submit grant applications to internal, local and external funding agencies for predoctoral fellowships.

Starting in fall 2016, graduate training will be overseen by the IGPBS Neuroscience Graduate Training Program (NGTP) housed in PEN. The new NGTP will comprise of faculty from across the UNMC campus with research interests in all aspects of neuroscience. This provides more research options for students in basic and clinical labs. The curriculum will also be tailored to help students with their research.