

## Introducing the 2012 McNair Cohort



2012 McNair Cohort

After being welcomed into the program, the recently accepted 2012 McNair Scholars have hit the ground running. They've selected their faculty research mentors and are beginning to identify their research projects for the 2013 McNair Summer Research Experience.

Members of the new cohort and their mentors include:

**Janeigh Castillo Barraza** is a psychology major from Lincoln, Nebraska. Janeigh's faculty mentor is Dr. Susan Sheridan from the Department of Educational Psychology.

**Kendra Haag** is a biological sciences and sociology major from St. Joseph, Missouri. Kendra will work with Dr. Les Whitbeck from the Department of Sociology.

**Jackie Hernandez** is a biological systems engineering major from Grand Island, Nebraska. Her faculty mentor is Dr. Carl Nelson, Department of Mechanical & Materials Engineering.

**Erandi Herndon** is a psychology major from LaVista, Nebraska. She will be working with Dr. Cynthia Willis-Esqueda, Department of Psychology.

**Dina Morales** is a psychology major from Harvard, Nebraska. Dina will conduct research with Dr. Jeffrey Stevens, Department of Psychology.

**Ivan Moreno** is a chemistry and physics major from South Sioux City, Nebraska. Ivan will be working with Dr. Martin Centurion, Department of Physics and Astronomy.

**David Pacheco** is a mechanical engineering major from South Sioux City, Nebraska. David will be conducting research with Dr. Carl Nelson, Department of Mechanical & Materials Engineering.

**Olivia Reinert-Gehman** is a psychology major from Omaha, Nebraska. Olivia will be working with Dr. Scott Stoltenberg, Department of Psychology.

**Eric Reiss** is a geology major from Omaha, Nebraska. His faculty mentor is Dr. Christopher Fielding, Earth and Atmospheric Sciences.

**Elia Soto** is a biochemistry and psychology major from Norfolk, Nebraska. She'll be working with Dr. Jennifer Mize Nelson from the Department of Psychology and the Office of Research.

**Jason Thomas** is a biological systems engineering major from Papillion, Nebraska. Jason's faculty mentor is Dr. Xu Li, Department of Civil Engineering.

**Alyssa Yeates** is a biological sciences major from Lincoln, Nebraska. She will be conducting research with Dr. Melanie Simpson, Department of Biochemistry.

## Scholars Share Research at National Conference

In August, UNL McNair Scholars traveled to the California McNair Symposium held at the University of California, Berkeley. Like so many UNL cohorts before them, they were unsure of what to expect at this conference, but were left with a feeling of confidence in their research and presentation skills.

As Moses Pacheco noted, "Presenting my research at the Berkeley conference made me realize my hard work was worth every hour I put into completing my research project."

Maggie Gossard Schauer emphasized, "As I was presenting my research at Berkeley, I felt empowered knowing that I was contributing to a bigger academic discussion about a topic that I'm passionate about."

Kenneth Herron commented, "Having the chance to see my peers share their research only encouraged me more to fulfill my dreams of someday becoming a faculty member. Also, given the chance to network with other faculty and students fed my drive to reach my goals as a future researcher."

Daniel Sotelo Leon summed things up, "Thanks to the McNair Summer Research Experience, I had become a scholar without even realizing it was happening. It was as I was presenting my research at the Berkeley conference that I finally realized it."



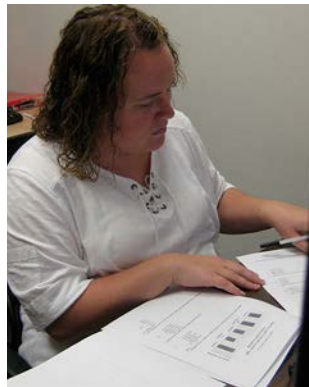
UNL Scholars shared the results of their research through oral presentations at the 2012 California McNair Scholars Symposium held at UC Berkeley.

# Scholars Gain Skills to Succeed at the Graduate Level

One of the main objectives of the McNair Scholars Program is to provide students opportunities to engage in research and develop skills critical for academic success. The McNair Summer Research Experience (MSRE) is often a transformative period for Scholars because they can see the result of their hard work. At the end of MSRE, they shared the knowledge they gained over the summer at the California McNair Scholars Symposium at UC Berkeley. Presenting at a national research conference contributed to their personal and professional growth. The impact of MSRE may be best described in the words of our Scholars:



*"I've had the opportunity to work under a great faculty member at UNL. I've been given the opportunity to work and fellowship with like-minded scholars, and I've been given all the tools necessary to succeed at the graduate level. I also gained a sense of confidence that I've never had before. I felt I was ready for any challenge."*  
 – Bridget Agnew



*"The feeling of accomplishment and telling people about what you and your mentor discovered is worth the stress of research. I'm so excited to continue my research in the fall and spring of my senior year."*  
 – Emmilie Baker



*"McNair Summer Research and the culminating experience of Berkeley have made me very excited for things to come. I know now for certain that research is what I want to devote my career to. I'm more confident than ever that I really can do this. I feel as though there is nothing stopping me from moving forward."*  
 – Maggie Gossard Schauer



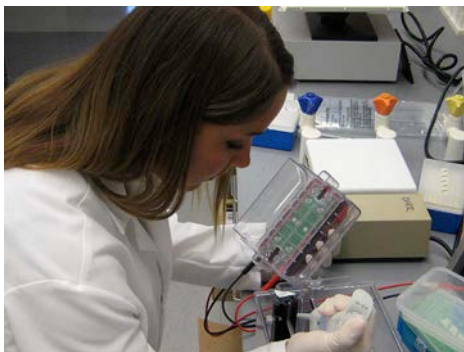
*"It's important to hear what people from other disciplines have to say. Examining different types of research, like the topics at the conference, gives you the ability to view commonplace activities in a new light."*  
 – Ross Benes



*"At the Berkeley conference, I spoke to many people with similar research interests. We discussed our research after our presentations and it was interesting to learn more about their research and how they got to that point."*  
 – Eric Harmes



*"Before this program and the Berkeley conference, I always doubted myself. I once told myself that I was not 'scholarly' enough to conduct research, let alone present my research findings in front of my peers, other faculty and McNair staff. However because of all the reassurance, it has given me a new perspective on research and has motivated me to tackle research with a new excitement and interest."*  
 – Kenneth Herron



*"I'm so thankful for the opportunity to be a part of this program. It may have been a bit overwhelming at times, but having deadlines for certain portions of our projects allowed us to be more prepared."*  
 – Brooke Micek



*"The McNair Summer Research Experience was a big step for me toward reaching graduate school. I gained confidence in my ability to successfully conduct research and*

*use my knowledge to complete each step of the research process. I look forward to passing through the doors McNair has opened for me."* – Moses Pacheco



*"Attending this conference in Berkeley solidified my decision to attain a Ph.D. in Counseling Psychology. I was surrounded by scholars who were passionate about their work, and I realized that I am just as passionate. Graduate school became much more of a reality to me, and I am looking forward to making a difference in my field of work, as well as in my own community."* – Nina Quiñones



*"I learned that as long as I have determination and put in the time, I can accomplish amazing feats in academia."* – Joseph Tran



*"Whereas before, I doubted whether I had what it took to become a scholar, I now have the confidence to tackle discovering new knowledge and presenting it in a scholarly fashion. The MSRE has given me a new understanding of what it takes to be a researcher."* – Daniel Sotelo Leon



# Mentor Spotlight: Dr. Melanie Simpson

Undergraduate research under the guidance of faculty mentors is an essential component of the McNair Scholars Program. Faculty mentors not only assist the Scholars in developing their research and professional skills, they also serve as role models. One of our many dedicated McNair mentors is Dr. Melanie Simpson, Associate Professor and Graduate Chair of the Department of Biochemistry. Recently, we asked Dr. Simpson for her perspective on the mentoring experience, which we'll share in this article.

"Being a McNair mentor is a particular honor for me because I am a first generation Ph.D., and the only scientist in my family," Dr. Simpson said. She identifies with the struggles, uncertainty, and self-doubt that McNair Scholars may feel, but she added, "I was able to attain a Ph.D. because of a few important people who served as mentors and took me under their wings at critical moments in my career path."

As an undergraduate, her mentoring experience was less than ideal. Simpson explained, "I was paired with a very abrupt and impatient graduate student mentor, who told me where to look up methods and gave me recipes to make solutions, but made me feel like an imposition on her time." It was then that she decided she would never be an impatient mentor.

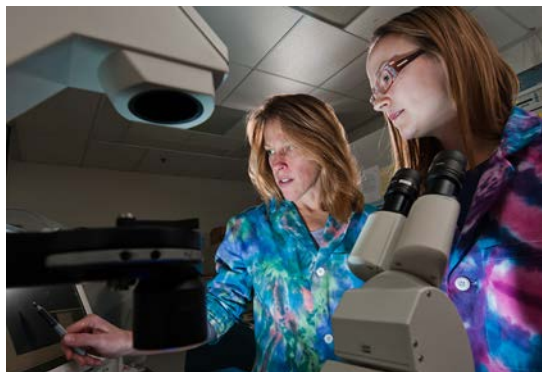
Her experience with mentors in graduate school was dramatically different. A dedicated graduate student mentor taught her many of the techniques she uses today in her lab, and the graduate mentor even included her on a publication. She observed, "I learned that detailed explanations and a strong role model, as well as engaged discussions between two or more people on the same project can really move a project forward."

Dr. Simpson has two main goals for her mentoring: (1) to teach the academic and professional skills that mentees need, and (2) to guide them through discovering their strengths and setting goals. She also helps her mentees position themselves for the future by connecting them with the right people and programs.

Noting that college courses focus on theoretical concepts, she feels students need opportunities to practice applying those theories to real-world tasks through hands-on experiences. "Doing research also enables you to gain a sense of how discoveries were made in your field. It teaches you how to apply scientific or systematic methods to problem solving," and she adds, "It's fun to do research!"

When you work with faculty mentors, you benefit from the breadth of their knowledge and their perspective of the field. "They can tell you what types of approaches are used to study a particular question, and what research areas are gaining a lot of attention for future funding opportunities." She continued, "Faculty can also help you put together a strong graduate school application because they know firsthand what admission committees are looking for in the graduate students they select."

Also recognizing the importance of good graduate student mentors, Simpson states, "They can give you perspective about the day-to-day activities of a student working toward a research-based career, and can work with you side by side and share tips and strategies about research techniques." She commented, "They can also advise you on balancing the different activities of a graduate student, such as coursework, teaching assistantships, and research."



Dr. Melanie Simpson (left) and graduate assistant Caitlin McAtee.

For Simpson, the mentoring relationship varies with the student and the project. She believes, "First and foremost, it's important for students and faculty to have a good rapport so there is mutual trust and respect. Students need a lot of guidance, and yet they need to have the freedom to make mistakes and learn from them."

She advised, "Faculty can mentor more effectively by anticipating students' strengths and limitations, gauging their need for input, supporting their efforts, and trying to set them up for success as individuals."

In Simpson's opinion, a good mentee is someone "who is curious, dedicated, reliable, careful, and never gives up!" She values integrity, perseverance, and creativity, explaining, "Integrity is imperative because research outcomes often have many interpretations, and it is the responsibility of the researcher to try to identify and test all of them, even if they don't agree with the hypothesis. Perseverance is essential because research has a lot of ups and downs, and it sometimes takes many attempts to get things working. Creativity is important because you often have to think of new ways to adapt old methods to answer questions. Sometimes you can only move your projects forward by innovatively putting new ideas together from very different types of research fields in a way no one has done before."

Dr. Simpson sets high expectations for her mentees. She expects them to ask questions, take careful notes, plan their research well before they step into the lab, communicate freely on how things are going, and learn from their mistakes and their successes. She emphasized, "To be successful in biochemical research, it's important to commit a meaningful amount of time for the project." Eventually, when they've become familiar with all the methods, she expects them to be able to work independently and sometimes even to help train new students.

Her mentoring reaches across several years of the UNL McNair Scholars Program and has directly affected four McNair mentees. Previously, Dr. Simpson worked with UNL McNair alumni Katie Haferbier, who is pursuing a Ph.D. in cancer research at UNMC, and Willie Novotny, who is working towards his M.D. at the University of Southern California Keck School of Medicine. Most recently, she worked with Brooke Micek and Daniel Sotelo Leon during the 2012 McNair Summer Research Experience.

Brooke Micek expressed, "Dr. Simpson has definitely inspired me to become more passionate about research and put all my effort into what I do and learn. What impresses me most is her ability to show enthusiasm and meaning in each task presented, even though she may have done it hundreds of times."

For Dr. Simpson, the most rewarding part of being a mentor for undergraduates is "watching the transformation from a curious but uncertain student to a passionate and confident researcher, and it's a huge motivation for me in my own career as a researcher."

**Special Thanks** to the faculty, postdoctoral and graduate student mentors who contributed their time and expertise to work with McNair Scholars during the 2012 McNair Summer Research Experience and who continue to support their research and graduate application efforts.

# Postdoctoral and Graduate Student Mentors

## Welcome to the 2012-13 McNair postdoctoral and graduate student mentors!

They include: Dr. Shanell Sanchez, sociology; Hazel Delgado, psychology; Mateusz Mittek, electrical engineering; Jill Allen, psychology; Dr. Maria Iturbide, psychology; Greg Golden, student affairs; Christine Booth, biochemistry; and Belinda Hinojos, counseling psychology. They join continuing graduate mentors: Grant Boardman, paleontology; Mamur Hossain, mechanical engineering; and Brett Sallach, civil engineering.

## UNL McNair Program Received Renewal Funding

In September, the U.S. Department of Education awarded the University of Nebraska–Lincoln McNair Scholars Program a \$1.1 million grant. UNL was one of only 127 programs that received grant funding through 2017. The renewal is a testimony to the successes of our UNL McNair Program alumni who continue to have an impact in their roles as professors, researchers and community leaders.

## Scholars Receive Undergraduate Research Funding

Through the Undergraduate Creative Activities and Research Experiences Program (UCARE), McNair Scholars receive support that allows them to remain engaged in a research project with their faculty mentors. UCARE is funded by the Pepsi Endowment and Program of Excellence funds. The following McNair Scholars received UCARE awards for 2012-13:

Scholar	Research Project and Faculty Sponsor
Bridget Agnew	First Year Award, <i>Racial Identity and Educational Outcomes</i> Faculty Sponsor: Dr. Helen Moore, Sociology
Reinaldo Alcalde	Second Year Award, <i>Approach Velocity and Discharge Measurements in a Combined Weir and Sluice Gate Structure</i> ; Faculty Sponsor: Dr. David Admiraal, Civil Engineering
Emmilie Baker	First Year Award, <i>A Social and Neuroscience Approach to Self-Objectification</i> Faculty Sponsor: Dr. Sarah Gervais, Psychology
Ross Benes	Second Year Award, <i>Alcohol Skills Training Program</i> Faculty Sponsor: Dr. Dennis McChargue, Psychology
Maggie Gossard Schauer	Second Year Award, <i>The Obesity Stigma: Exploring One of the Last Acceptable Forms of Prejudice in the Workplace</i> ; Faculty Sponsor: Dr. Sarah Gervais, Psychology
Eric Harmes	First Year Award, <i>Sexual Revictimization: A Comparison of Outcomes Between Childhood/Adolescent, Adult and Non-Victims, Based Upon Age of Initial Victimization</i> ; Faculty Sponsor: Dr. David DiLillo, Psychology
Kenneth Herron	First Year Award, <i>A Literary Analysis of Masculinity, Fatherhood, and Marital Morality through the Life of Sydney Poitier</i> ; Faculty Sponsor: Dr. Kwakiutl Dreher, English & Ethnic Studies
Nathan Lilienthal	Second Year Award, <i>Body Size Trends in Ice Age (Pleistocene) Horses and Camels from the Great Plains</i> Faculty Sponsor: Dr. Ross Secord, Earth & Atmospheric Sciences
Brooke Micek	First Year Award, <i>Characterization of Glutathione Metabolizing Enzymes in Prostate Cancer Cells</i> Faculty Sponsor: Dr. Melanie Simpson, Biochemistry
Ivan Moreno	First Year Award, <i>Determining the Products of Mechanochemical Reactions</i> Faculty Sponsor: Dr. Barry Cheung, Chemistry
Moses Pacheco	First Year Award, <i>Development of Improved Guardrail Post and Culvert Deck Attachment System</i> Faculty Sponsor: Dr. Dean Sicking, Civil Engineering
Christian Padilla	Second Year Award, <i>Motion Generation Using Peaucellier Straight-line Mechanisms</i> Faculty Sponsor: Dr. Carl Nelson, Mechanical & Materials Engineering
Nina Quiñones	First Year Award, <i>The Perceived Effects of Language and Culture upon the Academic Achievement of Latino High School Students</i> ; Faculty Sponsor: Dr. Michael Scheel, Educational Psychology
Eric Reiss	First Year Award, <i>Subsurface Geology of the Upper Cretaceous Succession in the Henry Mountains Syncline, Southern Utah</i> ; Faculty Sponsor: Dr. Christopher Fielding, Earth & Atmospheric Sciences
Jason Thomas	First Year Award, <i>The Accumulation of Pathogens in Lettuce Irrigated Using Treated Wastewater</i> Faculty Sponsor: Dr. Xu Li, Civil Engineering
Joseph Tran	First Year Award, <i>Performance of Robotic Functions through Arduino via Parallel Computation</i> Faculty Sponsor: Dr. Carl Nelson, Mechanical & Materials Engineering

# Improving Your Research Writing Skills

Undergraduate students are accustomed to writing essays for their courses, yet students may find it difficult to apply the skills they've acquired in writing essays to the task of writing a research paper. Strong research writing skills are essential for success in graduate programs. From preparing posters, papers, and grants, developing these skills now as an undergraduate will make the transition from undergraduate to graduate school a smooth and successful one.

**Know your discipline's writing style.** Read journal articles in your discipline. The more familiar you become with the style of writing that is customary for your discipline, the better you will become at crafting a research paper that conforms to the standards in your field. Pay close attention to the format, style, and organization of the journal articles you read, as well as the vocabulary used. If you find yourself coming across words you're unsure of, look up definitions and write them down in a notebook for later reference.

**Keep your creative juices flowing.** Write something every day in order to practice the art of expressing ideas through writing. Start a personal journal or blog, or volunteer to write for your campus newspaper or department newsletter. Write letters to family members or compose narratives of class lectures each day. With practice, expressing your ideas through writing will become second nature.

**Choose a topic of interest to you.** If you're interested in the topic you are writing about, preparing the research paper will seem less arduous and more enjoyable.

**Develop a schedule.** After choosing your research topic, create a schedule that consists of a series of milestones that will help you finish your paper by a specific date. Completing a research paper takes a lot of time – you must conduct a review of the literature, find relevant research, create an annotated bibliography, and edit multiple drafts. By creating a schedule, you'll know exactly what you need to do each day in order to finish on time.

**Know what you're looking for.** It's essential that you have a "working thesis" while conducting your literature review. You may come across vast amounts of literature that appear relevant, but if the material doesn't inform your research question, it's not useful. Each time you come across new material, ask yourself "Will this help both my readers and me understand why I am conducting this research?"

**Look at the bibliographies.** If you find solid research articles relevant to your research, scour their bibliographies for additional sources. Research article titles are rarely creative. This is beneficial while conducting your literature review because straight-forward titles make it easy to spot the topic of each paper. Take note of

authors' names that reappear in your searches and then conduct a follow-up search on their research. Soon, you'll have plenty of sources for writing an empirically-based research paper.

**Keep your research up-to-date.** A good rule of thumb is to use references from the last 10 years. If for some reason you can't find any new research on your particular topic, it's possible that the particular field of research has "dried up" or the major researcher in that field quit and/or passed away. If you find yourself struggling with this, Google the main researchers you've come across in your literature review and locate their homepages. Typically, they will have an electronic version of their curriculum vitae or another document that lists their most recent publications and/or research activities.

**Stay organized.** Create an outline by writing down main ideas, listing subordinate ideas below main ideas, and avoiding repetition of ideas. Remember: Clear writing is clear thinking.

Memorize rules of grammar. Not only should you learn basic rules of writing, but be sure to use them! Rules you should always follow include (a) write with the active voice rather than the passive voice when possible, (b) use concise, yet thorough, sentences, (c) use punctuation, (d) make sure that subjects and verbs agree, and (e) refrain from the use of jargon. To brush up on the basics, make use of a writing guide such as *Strunk and White's Elements of Style* (1999) or Michael Alley's *The Craft of Scientific Writing* (1996).

**Take baby steps.** Don't attempt to sit down and write an entire draft of your research paper in one sitting. Working in sections (e.g., the introduction and methods first, then the results and discussion) will not only be more manageable, but will also help you understand and deal with each section more thoroughly.

**Take advantage of the resources available to you.** There is an abundance of resources designed to help you improve your writing skills – find out what they are! Take a tour of the library and talk to a research librarian in your field. Learn how to navigate your university library's website so you can access academic databases such as EBSCO or J-STOR from home. Locate your university's writing center and ask fellow students and/or faculty to review your work. Or simply browse the web for reputable websites designed to improve your writing skills (e.g., owl.english.purdue.edu).

Adapted from <http://www.lifehack.org/articles/communication/advice-for-students-10-steps-toward-better-research.html>

<http://www.infoplease.com>

## McNair Recommendations

Do you know an undergraduate who might be a good candidate for the McNair Scholars Program?

We welcome and appreciate recommendations from faculty and advisers.

To recommend a student, contact Carol Boehler, [cboehler2@unl.edu](mailto:cboehler2@unl.edu), 402-472-5062.

*Funded by the Department of Education and housed in the Office of Graduate Studies, the UNL McNair Program prepares undergraduate students for doctoral studies through involvement in research and other scholarly activities. Participants demonstrate strong academic potential and are first generation college students who meet maximum financial guidelines or are members of groups underrepresented in graduate education.*

# Alumni News: Advanced Degrees

Congratulations to these alumni who earned advanced degrees during 2011-12:

## Doctoral and Professional degrees

**Heather Flores** earned her Ph.D. in genetics and development from Cornell University in May 2012. She is currently a postdoctoral fellow working with Dr. Scott O'Neill at Monash University in Melbourne, Australia.

**Erica (Ginn) Holley** earned her Ph.D. in management from the University of Washington in 2012. She is an assistant professor in the Department of Management at Central Washington University.

**Dzuan Nguyen** earned his Doctor of Pharmacy from the University of Nebraska Medical Center in May 2012. He's a postdoc in pharmacy practice/informatics at the University of Tennessee-Memphis Hospital Corporation of America Management Services.

**Sandra Potter** earned her Ph.D. in human sciences from the University of Nebraska-Lincoln in August 2012. She is an assistant professor in early childhood education at Mount Olive College in North Carolina.

**Melissa Tehee** earned her Juris Doctorate from the University of Arizona School of Law in May 2012. She is in the process of completing her Ph.D. in clinical psychology, policy and law at the University of Arizona.

## Master's degrees earned

**Lindsey (Richters) Chizinski** earned her master's degree in natural resource sciences in May 2012 at the University of Nebraska-Lincoln.

**Tara Cossel** earned her master's degree in clinical child psychology from the University of Memphis. Tara is working on a second master's degree in teaching from the University of Memphis, and is working full-time as a Spanish and French teacher at Manassas High School in Memphis.

**Martin Diaz** earned his master's in electrical engineering from the University of Delaware in December 2011, and is pursuing his Ph.D. in the area of high performance solar cells at the University of New South Wales in Sydney, Australia.

**Erica Rogers** earned her master's degree in English from the University of Nebraska-Lincoln in August 2012. She is currently enrolled in the English doctoral program at UNL.

**Adrian Soltero** earned his master's degree in electrical engineering from Texas A&M University in December 2011. Adrian is currently employed as an analog applications engineer for Texas Instruments in Dallas.

# McNair by the Numbers

Since the McNair Scholars Program began at UNL in 1995, it has served **227** students. Of the **212** eligible to graduate, **206** – or **97.2 percent** – have earned bachelor's degrees. **Twenty** UNL McNair Program alumni have achieved their Ph.D., **97** have earned a master's degree, and **13** have earned a professional degree. Currently, **28** UNL McNair alumni are enrolled in Ph.D. programs, **15** are pursuing master's degrees, and **6** are pursuing professional degrees.

## McNair Alumni

Thanks to all the McNair Alumni who have completed the annual McNair Survey!

You may update your information at anytime: <http://www.unl.edu/mcnair/scholarupdate.shtml>



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