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McNair Scholars Program

Fall 2010

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Meet the 2010 McNair Cohort



2010 McNair Cohort

Members of the new McNair Cohort were welcomed into the community of Scholars at the annual fall orientation. Dr. Paul Black, Professor and Chair of the Department of Biochemistry at UNL, spoke about his road to becoming an academic and his progression from a Ph.D. student in cell biology to the postdoc, assistant, associate and professor positions he held before he joined the University of Nebraska–Lincoln.

It was noted that individual paths to career goals may vary greatly. Scholars were encouraged to envision their future and explore what skills they need to develop along the way to accomplishing their academic goals. One of the first steps to achieving these goals involves academic research.

The new Scholars have chosen their faculty research mentors who will guide their research beginning next spring and through the McNair Summer Research Experience.

Members of the 2010 Cohort include:

Reinaldo Alcalde from Lincoln, Nebraska, is a junior majoring in civil engineering. Reinaldo's faculty mentor is Dr. David Admiraal, Associate Professor of Civil Engineering.

Misam Ali is a junior from Lincoln, Nebraska, majoring in finance. Misam will work with Dr. Carleen Sanchez, Assistant Professor of Anthropology.

Mollie Dittmer of Lincoln, Nebraska, is a junior majoring in psychology. Her faculty mentor is Dr. David Hansen, Professor and Chair of the Psychology Department.

Brittany Jones of Olathe, Kansas, is a junior majoring in history and psychology. She will be working with Dr. Kenneth Winkle, Professor of History.

Nathan Lilienthal of Callaway, Nebraska, is a sophomore majoring in geology. He will be conducting research with Dr. Ross Secord, Assistant Professor of Earth and Atmospheric Sciences.

Alyssa Lundahl is a junior from Laurel, Nebraska, majoring in psychology. Alyssa will be conducting research with Dr. David Hansen, Professor and Chair of the Psychology Department.

Christian Padilla is a sophomore mechanical engineering major from Santa Monica, California. Christian's faculty mentor is Dr. Carl Nelson, Associate Professor of Mechanical Engineering.

Karina Pedroza of South Sioux City, Nebraska, is a junior majoring in psychology. She will be conducting research with Dr. Cynthia Willis-Esqueda, Associate Professor of Psychology.

Scholars Present at National McNair Conference

In August, UNL McNair Scholars returned from another successful trip to the California McNair Symposium held on the campus of UC Berkeley. Sharing their research with fellow scholars from around the country left a lasting impression and gave them insight into the academic conference process. As Alex Goldstein said, "I now understand that academic research is a collaborative effort with people from different parts of the nation, or world, working together to collectively solve a problem or answer a question."

Realizing the broader scope and wider reach of their research efforts was a common theme shared by many Scholars. This "big picture" of research was something that Kaitlin Leslie reflected upon when she said, "A lot of people have a tendency to look at research as being somewhat one-dimensional...the McNair conference taught me that this is anything but true. Research is dynamic."

The feeling of successfully completing a mini-research project under the direction of a UNL faculty member and sharing that work with others across the country provides students with confidence in their abilities like little else can. As Melissa Garfield put it, "The conference was the defining moment in which I was able to see myself succeeding at the graduate level."



Present Research - Scholars from the 2009 Cohort gave oral presentations at the 2010 California McNair Scholars Symposium held at UC-Berkeley. They readily admit that the conference was the culmination of a summer of hard work that allowed them to envision their academic futures.

Making the Transition from Student to Scholar

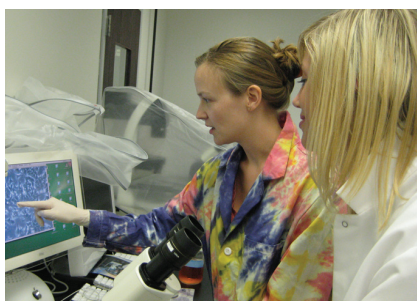


2009 McNair Cohort

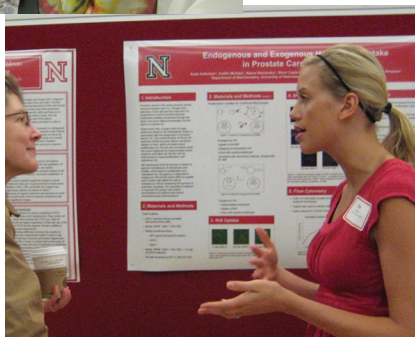
One of the most rewarding and challenging aspects of being a McNair Scholar is participating in the McNair Summer Research Experience (MSRE). During MSRE, Scholars develop critical research skills under the guidance of a faculty mentor, as well as the ability to communicate their research results in written and oral forms.

One might wonder how Scholars could complete a research project in nine short weeks, but actually Scholars begin preparations as soon as they enter the McNair Program. Prior to the start of MSRE, Scholars learn how to write a proposal, design their research project, and conduct a literature review. During MSRE, they gather and analyze data, draw conclusions based on empirical evidence, and report results in a paper, poster and oral presentation. This experience is similar to a mini graduate school boot camp because, just like graduate students, Scholars are expected to be reliable, accurate, self-sufficient, and independent thinkers.

It may be an oversimplification to say that participants make the transition from student to scholar during the MSRE, but quotes from the 2009 Scholars might best explain the impact of successfully completing their summer research project and presenting at the California McNair Scholars Symposium at UC-Berkeley.



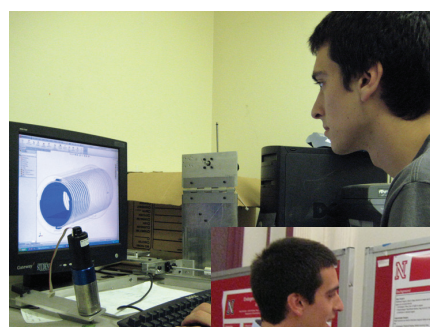
"Everything has come full circle for me, from actually conducting research to presenting the results at an academic conference. I now know that being a researcher is what I want to do for a career." – Katie Haferbier



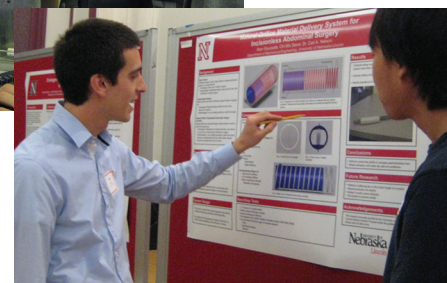
"The summer research experience and the Berkeley conference have instilled a greater sense of pride in my own work, allowing me to realize that as a scientist my work is important and my academic potential is unlimited, and simply requires lots of hard work, dedication and passion." – Zach Garfield



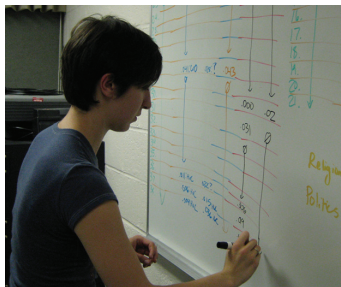
"With MSRE behind me, I can pursue my goals with confidence knowing that McNair has not only helped me to develop necessary skills, but has ignited a spark for research that will not easily be put out by any challenging days that may lay ahead." – Michelle Haikalis



"The preparation I received during my MSRE was very helpful and the UNL Colloquium created an equivalent environment to the Berkeley Conference. As a result, I was more comfortable presenting. I also got a feel for what a graduate school conference would be like." – Alan Goyzueta



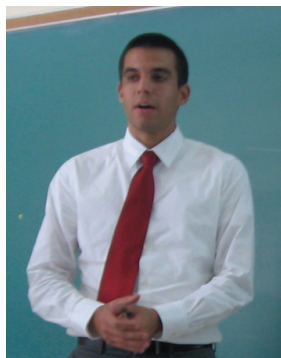
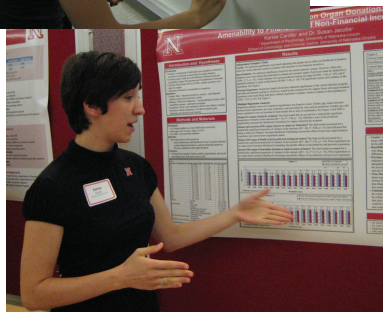
Making the Transition from Student to Scholar



"Being able to see the fruits of the summer research project culminate in a presentation was immensely satisfying." – Karise Carrillo



"Through the McNair Summer Research Experience and the conference, I came to understand directly that true science rests on the foundation of interdisciplinary support and interaction." – Melissa Garfield



"The lessons that I gained from presenting at Berkeley will help me throughout the rest of my academic career and beyond." – Jeff Lopez



"The conference helped me to grow as a researcher and made me feel much more confident about the work I have been doing." – Alex Goldstein



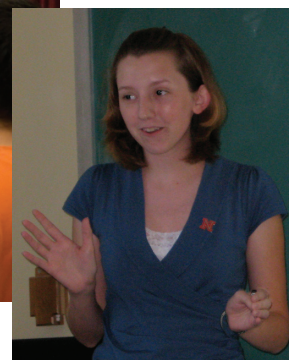
"I thought about all the McNair scholars I had heard and met at Berkeley, and I realized that some of them would be the peers I collaborate with down the road in my career." – Justin Escamilla



"After listening to numerous presentations and speaking with scholars from other schools, I'm confident that the research experience I'm receiving at UNL is second to none." – Tyler Scherr



"Each exercise or MSRE assignment was strategically implemented to prepare us to present and be professional. Without it, I would not have been prepared to present and feel as confident as I did at the Berkeley Conference." – Arianne Holland



"The coolest thing about MSRE was that when I was heading home it didn't feel over. I knew the McNair summer sessions and Berkeley were over, but the research experience did not feel over. This just reiterated that the research process never really ends. I feel like I'm staring at an endless puzzle but I'm not intimidated by it. Research is an exciting adventure I am looking forward to continuing." – Kaitlin Leslie

Mentor Spotlight - Dr. Carl Nelson

A central focus of the McNair Scholars Program is developing and refining research skills under the guidance of a faculty mentor. One of the many valued mentors that have worked with McNair Scholars is Dr. Carl Nelson, an associate professor in the UNL Department of Mechanical Engineering. Dr. Nelson, whose research interests lie in the areas of robotics and mechanical systems design, is currently mentoring two McNair Scholars, Khoa Chu and Alan Goyzueta, and has agreed to work with a Scholar from the 2010 Cohort, Christian Padilla.

Mentoring plays a very important role in the research setting where undergraduates work side-by-side with graduate students, postdocs and faculty mentors. Dr. Nelson explains why: "It's the power of example, positive peer pressure. It also helps students develop the 'intangible' qualities, like interpersonal skills, that they will need after leaving the academic environment."

As an undergraduate at the University of Oklahoma, he had a research advisor who treated him like the other researchers in his lab, which ultimately helped him prepare for graduate school. Nelson went on to earn his master's and Ph.D. at Purdue University.

He describes a good mentor as one who "tries to see the research in the context of the student's goals." Nelson added, "A mentor also has to create, define, and communicate expectations, so that the student has short-term targets to meet in support of the long-term objectives."

Dr. Nelson has high, yet attainable, expectations of his mentees. He expects students to put in an honest day's work, take pride and invest themselves in the quality of their research outcomes, and have an "always-learning" mindset. He also hopes that they ask a lot of questions.



Dr. Carl Nelson, UNL Department of Mechanical Engineering
Photo by Karen Coen-Brown

Among characteristics he looks for in mentees, he values dependability, integrity, and the ability to work effectively with others. He further explained, "I want to be able to rely on someone to carry out an assignment and to maximize the product of their interactions with others. These qualities are developed over time, and the process starts long before arriving in the research lab."

For Dr. Nelson, the most rewarding part of being a mentor is seeing students satisfied that they're achieving their goals and reaching their potential. He noted, "It's gratifying to see students who've grown in skills and confidence and who have opened up opportunities for themselves through their focused efforts."

Dr. Nelson believes that one of the great things about being a faculty mentor is that you get to show students that people who have achieved a Ph.D. or

other substantial accomplishment are just people—they're not superhuman. He added, "Overcoming the misconception that 'I could never do that' is one of the neat outcomes of faculty mentoring in the McNair program."

Chu Earns NASA Research Internship



It has always been Khoa Chu's dream to work for NASA, and this fall that dream moved one step closer to reality when he landed an internship with NASA's Undergraduate Student Research Program. He's currently working with his mentor Paul Stek on the Scanning Microwave Limb Sounder (SMLS) project at the NASA Jet Propulsion Laboratory (JPL) in Pasadena, CA.

Some of Khoa's research tasks include designing brackets to hold the optics and receiver inside the SMLS cryostat, thermal analysis of the designed brackets, and thermal testing the cryostat once everything is assembled.

"All of the tasks that I'm responsible for have been quite a challenge, but because of my previous research experience in the McNair Program and with my mentor Dr. Carl Nelson, I'm more confident and prepared for this internship. This experience is another stepping stone that will help me get to my future career goal at NASA."

At the culmination of the internship, Khoa will be required to write a research paper to be submitted to NASA and give a PowerPoint presentation to his colleagues at JPL. He notes with confidence, "Thanks to McNair, these two tasks will not be difficult to accomplish."

Special Thanks to the faculty, postdoctoral and graduate student mentors who contributed their time and expertise to work with McNair Scholars during the 2010 McNair Summer Research Experience, and who continue to support their research and graduate application efforts.

Scholar Completes Summer Research at Ohio State

Senior McNair Scholar Brittany Sznajder-Murray was one of fifty-one student researchers selected to participate in the 2010 Ohio State Summer Research Opportunities Program (SROP), a summer research program hosted through Big 10 universities.

Just as a potential graduate student would do, Brittany searched for programs and mentors whose research interests aligned with hers. When she applied for the SROP, she requested to work with Dr. Natasha Slesnick and was selected from over 700 applicants. Before leaving for Ohio State, she reviewed the Dr. Slesnick's current research projects and grants, reviewed the literature, and wrote an annotated bibliography, which helped with her final research paper.

Brittany said that the UNL McNair Scholars program played a significant role in her success at Ohio State. As Brittany noted, "I was fortunate to have gone through McNair, so I already knew the



2010 Ohio State SROP participants

components of a research paper, how to create a poster, and how to give an oral presentation...had I not already the learned basic research skills from McNair, my summer wouldn't have been as productive."

Because of Brittany's previous research experience, she was able to work independently and, as a result, was able to get a lot accomplished during the nine-week program. The culmination of Brittany's hard work was a research paper entitled, "Don't Leave Me Hanging: Homeless Mothers' Perceptions of Service Providers." Brittany and Dr. Slesnick have submitted the paper for publication.

Not only did Brittany complete a publishable research paper, she encountered experiences that have allowed her to refine her graduate school goals. "Working with my professor in Ohio, I saw that research can include clinical work, such as developing treatments, and I think that's something I'd really enjoy doing," Brittany noted. She's now even more determined to earn a Ph.D. degree.

Brittany emphasized that "if you're able to do a summer research program, you should definitely take that opportunity. It was great to be able to work in different environment and I think it really helped prepare me for graduate school." Brittany continued, "The director of SROP said it was the best graduate school interview you'll ever have because they get to see how well you work and you can see what it's like to work there."



SROP mentor – Brittany Sznajder-Murray, a Child, Youth and Family Studies major, conducted research on homeless mothers with Dr. Natasha Slesnick, Professor of Human Development and Family Science.

Alumni News: Advanced Degrees

Congratulations to these alumni who earned advanced degrees during 2009-10:

Olabode Alabi earned his master's degree in Industrial and Management Systems Engineering from the University of Nebraska–Lincoln in May 2010. He's currently enrolled in the Master of Community and Regional Planning program through the College of Architecture at UNL.

Olamide Alabi earned her M.D. degree from the University of Nebraska Medical Center in May 2010.

Yaravi Lopez-Wilson earned her Master of Architecture degree from the University of Nebraska–Lincoln in May 2010.

Ola Olude-Afolabi earned her Ph.D. in Systems Science from Binghamton University in May 2010. Her research was in the area of data mining and artificial intelligence.

Sheriece Sadberry earned her Ph.D. in Counseling Psychology at the University of Missouri in August 2010. She is currently working at Florida State University's Counseling Center.

McNair Alumni

Please keep us informed about your academic progress.

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

Scholars Receive 2010-11 UCARE funding

Through the Undergraduate Creative Activities and Research Experiences (UCARE) program, McNair Scholars receive additional 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 and sponsored by the Office of Undergraduate Studies. The following McNair Scholars received UCARE awards for 2010-11:

Scholar	Research Project and Faculty Sponsor
Karise Carrillo	First Year Award, "Examining Attitudes on Organ Donation for Transplant" Faculty sponsor: Dr. Susan Jacobs, School of Criminology & Criminal Justice
Justin Escamilla	First Year Award, "Mortality Salience, Power, and Perceptions of Behaviors in Social Interactions" Faculty sponsor: Dr. Sarah Gervais, Psychology
Melissa Garfield	Second Year Award, "How Women Achieve Status in Traditional Societies" Faculty sponsor: Dr. Raymond Hames, Anthropology
Zach Garfield	Second Year Award, "The Prosocial Dimension of Status in Egalitarian Societies", Faculty sponsor: Dr. Raymond Hames, Anthropology
Alex Goldstein	First Year Award, "The Impact of Polyunsaturated and Highly Polyunsaturated Fatty Acids on Gene Expression and Fat Storage in Lab Mice" Faculty sponsor: Dr. Concetta DiRusso, Nutrition and Health Sciences / Biochemistry
Alan Goyzueta	First Year Award, "Material Delivery System for Incisionless Surgery" Faculty sponsor: Dr. Carl Nelson, Mechanical Engineering
Katie Haferbier	First Year Award, "Impact of Hyaluronan Endocytosis on Prostate Cancer Cells" Faculty sponsor: Dr. Melanie Simpson, Biochemistry
Michelle Haikalis	First Year Award, "Improving the Social and Behavioral Competence in Head Start Children: Evaluating the Effectiveness of Teacher-Child Interaction Training" Faculty sponsor: Dr. David Hansen, Psychology
Arianne Holland	First Year Award, "Subtle Sexism and the Nature of the Objectifying Gaze" Faculty sponsor: Dr. Mike Dodd, Psychology
Kaitlin Leslie	First Year Award, "Determining Error Rates Associated with Bloodstain Pattern Analysis" Faculty sponsor: Dr. David Carter, Entomology
Jeff Lopez	First Year Award, "A Novel Enzyme Chip Using Localized Electrochemistry" Faculty sponsor: Dr. Ravi Saraf, Chemical & Biomolecular Engineering
Beth Ridling	Second Year Award, "Insight into Aggression in Individuals with Severe Mental Illness (SMI)" Faculty sponsor: Dr. William Spaulding, Psychology
Tyler Scherr	First Year Award, "Fluorescence Recovery and the Inhibition of Bacterial Primase and Helicase" Faculty sponsor: Dr. Mark Griep, Chemistry
Sherri Sklenar	Second Year Award, "Changing Frontier Landscapes: The Nebraska City Cutoff Trail" Faculty sponsor: Dr. Paul Demers, Anthropology
Brittany Sznajder-Murray	Second Year Award, "Help-Seeking Behaviors of Women with Alcohol Use Disorders" Faculty sponsor: Dr. Cody Hollist, Child, Youth and Family Studies

Kudos to Scholars and Alumni

Congratulations to these McNair Scholars and alumni for their recent accomplishments:

Masoud Mahjouri-Samani, McNair Scholar 2006-2008, has published his second (first author) journal article, "Diameter modulation by fast temperature control in laser-assisted chemical vapor deposition of single-walled carbon nanotubes," along with colleagues Y. S. Zhou, W. Xiong, Y. Gao, M. Mitchell, L. Jiang and Y. F. Lu, from the Department of Electrical Engineering at the University of Nebraska-Lincoln. Their article was featured on the cover of *Nanotechnology*, October 1, 2010.

Tyler Scherr won top honors in the undergraduate category at the Research First Summer Poster Session, sponsored by UNL's Chemistry Department in August 2010. Tyler's poster, Proteomic Analysis of *Geobacillus stearothermophilus* Primase, was the topic for his 2010 McNair Summer Research project, conducted under the guidance of his faculty mentor Dr. Mark Griep, Associate Professor and Vice Chair of the Chemistry Department.



Nanotechnology Cover – Volume 21, Issue 39 (1 October 2010), IOP Publishing. <http://iopscience.iop.org>

Getting the Most Out of a Research Conference

Traveling to a research conference as an undergrad or graduate student is expensive but priceless. To keep costs down, buy your airline ticket well in advance and try to share a hotel room with one or more of your colleagues.

The benefits of attending may outweigh the cost because conferences can offer opportunities for career enhancement, help you gain more information about your research, and lead to valuable contacts with other people in your research area.

Here are some tips to help you get the most out of the experience.

Before the Conference

- Think about the connection between the value of going to the conference and your professional and personal goals.
- Consider your main goals for attending and decide what you want to achieve. Make as detailed a list as possible.
- Look at the conference schedule as soon as it is available and decide what sessions, activities, panel discussions, dinners, receptions, etc., will help you get more information about your research and enable you to make valuable contacts.
- Gather information about the speakers, make a priority list of who you want to meet, and research them. If possible, call or e-mail to introduce yourself and make an appointment with them in advance. Information sources include their business Web site, and possibly blogs, twitter streams and other social media sites.
- Practice how you will introduce yourself. Prepare a 30-second version about you and your research and a slightly longer version in case someone asks for more. Check out your handshake to be sure it is not too limp or too strong. A good handshake can make a great impression.
- Make some business cards with your name, e-mail and research interest and carry them with you to give to people who may want to contact you later.
- Prepare a list of questions you need to have answered or discussed.

- Print out the conference details, your planning or goals list, and travel details in advance; check the weather forecast; back up your laptop and charge the batteries.

During the Conference

- If possible, stay at the same hotel as the conference because valuable contact can take place in the lobby or in the hotel coffee shop.
- Dress for success. Looking like a professional will help you make a good impression.
- Don't drink alcohol at the conference venue or around people with whom you want to create a professional relationship.

After the Conference

- Take time to reflect on what took place. Did you get the information you needed and did you make good contacts? If not, why not? How could you do a better job? If you didn't do so well, maybe it's time to take advantage of graduate student development. See the Graduate Studies Web site for some helpful resources.
- Craft or update your CV so it highlights your education, awards, background, and skills.
- Contact people whose presentations you could not attend and get materials if they aren't available through the conference Web site.
- Stay in contact with your department alumni to increase opportunities for future contact with people sharing your research interests.
- Send a "thank you" e-mail to those who went out of their way to meet with you or those who provided you with important information. Let them know what you took away with you.

Sources: April 2010 Graduate Connections, published by the Office of Graduate Studies, University of Nebraska-Lincoln; 10 Things you Can Do Preparing for the Conference. August 18, 2009. bestconferencetips.com/conference-research/; Twenty Tips for Getting the Most out of your Research Conference Experience. utexas.edu/ogs/gradlife/academics/research/conf_exp.html.

Welcome to the 2010-11 graduate student and postdoc mentors!

They include: Ashley Barnett, geography; Sarah Beal, psychology; Christopher Frey, chemistry; Joe Hamm, law psychology; Stephanie Kennedy, sociology; Elliot Jesch, biochemistry postdoc; Seung-Woo Lee, chemical engineering; Elaine Martin, psychology; Caitlin McAtee, biochemistry; Owen O'Reilly, anthropology; Jenna Perkins, psychology; and Chi Min Seow, mechanical engineering. They join current graduate mentors Aaron Anderson, child, youth, and family studies; Robert Kilts, anthropology; Amy Lehman, mechanical engineering; and Melissa Tarasenko, psychology.



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