The capstone of the McNair Scholars Program is the annual Summer Research Internship (SRI). During the SRI, students refine their research interests, establish networks with professionals in their respective fields, and become skilled at communicating their research to a variety of audiences in the University. Research and scholarly engagements for McNair Scholars are designed to make students competitive candidates for doctoral study. The SRI culminates in a symposium for students to present their preliminary research. On July 24, 2014, 18 McNair Scholars presented their research in front of faculty, staff, colleagues, and family at the 21st annual Summer Research Symposium. The highlight of the symposium was two featured speakers, Max Bearce, who gave the opening research presentation, and Nicole Humphrey, the luncheon research talk (See pg. 5).

The luncheon and the presentations were attended by new and returning Scholars, faculty mentors, members of the University of Kansas administration, TRIO/CEOP programs, and campus organizations. At the end of the symposium, students reflected on the SRI by using hashtags to describe their learning experiences over the course of the internship (Details on pg. 5).
New Staff: Sabrina Gregersen

Originally from Le Roy, KS, **Sabrina Gregersen** received her Bachelor’s degree in Psychology from the University of Kansas and a Master of Arts in Psychological Science from the University of Colorado-COLORADO Springs. In 2013, she returned to KU to pursue her PhD in Cognitive Psychology. Her research interests broadly include the brain’s role in cognition, specifically related to individual differences in emotion, attachment theory, and depression. Sabrina was a McNair Scholar as an undergraduate student at KU. She is an advocate of the McNair Scholars mission, and is excited to provide undergraduate students with support and guidance to pursue their academic goals.

Research Outside of KU

McNair Scholars in the first year of the program are required to perform research at KU. Returning scholars, however, are encouraged to pursue summer research opportunities at other institutions. These opportunities are expected to provide valuable research experience to students by broadening their horizons. In the summer of 2014, four scholars participated in Research Experience for Undergraduates (REUs) at various universities across the nation. We asked **Taylor Broadhead**, a senior majoring in ecology & evolutionary biology, to describe her REU experience at Duke University:

“This summer, I completed the REU Program in Estuarine and Coastal Marine Sciences at the Duke University Marine Lab in Beaufort, North Carolina. Although I am in a research lab at KU, this REU program was my first experience with research in marine science. The REU program provided me with the opportunity to complete a research project under the direction of an experienced mentor, Dr. Douglas Nowacek. The purpose of this research was to use passive acoustic monitoring to detect a critically endangered species of baleen whale, the North Atlantic Right Whale (Eubalaena glacialis), migrating past Cape Hatteras, NC. We acoustically detected right whale presence in all months from December to early April. We also determined how close in proximity right whales swim to shore during migration and what hours of the day they are acoustically active. Above all, we contributed to an increase in understanding of right whale natural history, which is crucial for mitigating anthropogenic mortality rates. In addition to working on this project in the lab, I was able to go out in the field to collect the recording units we used to gather data and also look for pilot whales. My favorite parts of the REU program included learning about various topics in marine research through participating in presentations with my peers and going on educational field trips, such as shark censusing and touring a sea turtle hospital. I advise future McNair Scholars to pursue any field of research that interests them, regardless of geographic location.”

Taylor Broadhead
Research Presentations & Awards

Theresa Amante, Nicole Humphrey, Christian Orzano, Cassandra Osei, Allora Richey, Dylan Smith, and Carla Valenzuela presented their research at the 18th Annual Ronald E. McNair Heartland Research Conference in Kansas City, MO.

Max Bearce and Sean Gilmore presented their research at the SAEOPP McNair Research Conference in Atlanta, GA.

Cassandra Osei and Allora Richey received the Undergraduate Research Award for spring 2015.

Diana Restrepo received the Tinker Field Research Award from the Center for Latin American Studies.

Alumni Success

Melissa Malcolm, M.S., Secondary Education

Kevin Mohammed, M.S., Criminal Justice

Diana Restrepo, M.A., Latin American & Caribbean Studies

Scholarships & Honors

Clint Jensen received the Heartland Conference Graduate Research Scholarship.

DaKie Washington was accepted to the Multicultural Scholars Program and received the Diana Woodruff Memorial Scholarship from the School of Social Welfare.

Research Publications

Independent research projects help students refine interests and gain experience, but also provide the opportunity for Scholars to publish their work in a major-specific or undergraduate journal. Research publications can be a crucial factor in gaining acceptance into a Master’s or Ph.D. program, as admission committee members look for interest, experience, and potential in a prospective graduate student. Research publications remain valuable throughout one’s academic career, as featured work in a discipline-specific journal can improve a curriculum vitae or help attain a faculty position. Four McNair Scholars—one current and three alumni—have recently published their work in subject-specific or the KU Undergraduate Research Journal.

D. Adam Nicholson, a Ph.D. student in the Sociology Department at Indiana University, recently had his graduate research published in collaboration with the Center for Demography and Ecology at the University of Wisconsin-Madison. His research examines the relationships between work and family roles and economic well-being.

Paul Fowler III, a Master’s student in African & African-American Studies at KU, and Eric Rivera, a recent KU graduate, had their work published in the KU Journal of Undergraduate Research.

Eder Contreras, a senior majoring in biochemistry, was selected as a co-author in a research article published in the Journal of Computational Chemistry.

To help current and future McNair Scholars remain competitive applicants for post-baccalaureate studies, KU McNair will be launching its own undergraduate journal in the fall of 2015. The McNair Journal will feature the work of the Summer Research Internship participants.

Former Scholars, we want to hear from you today! Update us on your accomplishments and plans. Visit our website mcnair.ku.edu or email us mcnair@ku.edu
Aside from the Summer Research Symposium, McNair Scholars get several opportunities to share their research and network with faculty and students in the research community at The University of Kansas. The annual Summer Undergraduate Research Poster Session afforded KU McNair Scholars the chance to display preliminary results to colleagues, faculty, and staff. The event, co-sponsored by the Center for Undergraduate Research and the Madison & Lila Self Graduate Fellowship, highlighted the research of 100 undergraduate students from 48 colleges and universities, 27 states, and various countries. Seven McNair Scholars presented their research and networked with several scientists, faculty and students.

PRESENTATIONS:

Cameron Arnold, Junior, petroleum engineering
Measuring Rheological Properties of CO₂ Foam for Enhanced Oil Recovery.
Faculty mentor: Dr. Reza Barati, chemical & petroleum engineering

Max Bearce, senior, psychology
Japanese Internment as Collective Memory: Implications on Identity and Identity-Relevant Outcomes.
Faculty mentor: Dr. Ludwin Molina, psychology

Eder Davila Contreras, senior, biochemistry
Characterization of Pure Lipid Bilayers Using Molecular Dynamics.
Faculty mentor: Dr. Wonpil Im, molecular biosciences

Carlos Fernandez, senior, mathematics
Evolutionary Lag in Stage-Structured Populations with Clonal Reproduction.
Faculty mentor: Dr. Maria Orive, ecology & evolutionary biology

Sean Gilmore, senior, social work (speech-language-hearing minor)
Interactive Book Reading to Accelerate Word Learning by Children with SLI.
Faculty mentor: Dr. Holly Storkel, speech-language-hearing

Allora Richey, senior, psychology; human biology
Associations Between Proactive and Reactive Aggression and Risky Sexual Behavior among Latino Youth.
Faculty mentor: Dr. Paula Fite, applied behavioral science

Dylan Smith, senior, anthropology
Preserving North Korean Culture in a Unified Korea.
Faculty mentor: Dr. Felix Moos, anthropology
Approximately 50 students, administrators, and guests attended the McNair Symposium Luncheon, which featured keynote speaker Nicole Humphrey, a junior majoring in political science. Nicole began her presentation by discussing the objective of her research, which was to critique and analyze the book *Empire* by Michael Hardt and Antonio Negri. In it, the authors attempted to predict world order after the world has become completely globalized. In turn, Nicole wanted to determine whether the predictions made in *Empire* by Michael Hardt and Antonio Negri were plausible.

Nicole then proceeded to explain her methodology of determining the plausibility of *Empire*. She did so by comparing predictions from the book to the European Union. The European Union was used as a comparison because of the similarities it holds with *Empire*. According to Nicole, both the European Union and *Empire* are responsible for providing stability to multiple states and allow free movement of people within their borders.

Nicole’s research findings suggested that because *Empire* acts as a peacekeeping mechanism, like the European Union, its system of governance is plausible. Nicole then explained that this research holds significance for the field of political theory, as well as the general population because it helps to provide a greater understanding for globalization, which influences all inhabitants of the world.

### McNair Scholars Hashtag their SRI Experiences

At the conclusion of the Research Symposium, KU McNair Scholars gave their input on nearly every aspect of the Summer Research Internship, including the GRE preparatory course, professional development workshops, assignments, and the Research Symposium itself. Scholars used hashtags to describe lessons they learned or what stood out to them the most. Below are some of their responses:

- #Empowerment
- #Patience
- #Transformative
- #Rewarding
- #Perseverance
- #Awesome
- #Diligence
- #Education
- #Believe in yourself
- #Struggle bus
- #Support
- #Good stuff
- #Intangible
- #Communication
- #Guidance
- #Confidence
- #Proud
- #Networking
- #Long dark glass tunnel with a bright light awaiting the end
- #Help
- #Stay motivated
- #Humility
- #Be flexible
- #Stressful
- #Transformations
From September 19-21, KU McNair Scholars attended the 18th Annual Ronald E. McNair Heartland Research Conference in Kansas City, MO. Seven scholars—Theresa Amante (pictured), Nicole Humphrey, Christian Orzano, Cassandra Osei, Allora Richey, Dylan Smith, and Carla Valenzuela—presented their research to students, colleagues, and staff from Missouri, Kansas, and Nebraska McNair Scholars Programs. Scholars also visited with various graduate programs at the Graduate School Fair, and received information on applying to graduate programs. Aside from the research presentations and the Graduate School Fair, McNair Scholars attended speeches from guest speakers Dr. John Augusto, Dr. Tara Ruttley, and Blane Harding, among others. Each featured speaker provided students with valuable information on applying to and completing graduate school, and making a positive impact on others. Dr. John Augusto, Assistant Vice Provost and Director of the Center for Undergraduate Research at KU, encouraged students to follow the lessons mentioned in the book *The Adventures of Johnny Bunko*. Two of the points that Dr. Augusto emphasized were focusing on one’s strengths and persistence over talent. Dr. Augusto advised students to spend more time using strengths to accomplish their academic and career goals than trying to fix their weaknesses. He also warned students not to rely solely on talent to make it through graduate school and beyond, but to persist when challenges arise in one’s academic career.

Dr. Tara Ruttley, Associate Program Scientist for the International Space Station (ISS) for NASA at Johnson Space Center in Houston, spoke to the audience about her journey as a McNair Scholar. Dr. Ruttley shared her experiences of being the first in her family to attend a four-year institution, and the financial hurdles she faced when she entered higher education. Dr. Ruttley encouraged students to not let financial burdens serve as a roadblock to their academic success, and cited her transfer to another institution to save costs as an example.

Blane Harding, the Director of the Office of Multicultural Affairs at the University of Kansas, discussed the importance of McNair Scholars using their education to make a positive impact on the world. Harding reminded the Scholars to not only use their educational privilege to establish a career for themselves, but to embody the ideals of TRIO by paving the way for and setting an example to other members of traditionally underrepresented groups so that academia and the work force may reflect America’s diversity.

The conference concluded with the presentation of scholarships for McNair Scholars and Alumni. Clint Jensen, a McNair Alumnus and KU graduate of the class of 2014, received the Heartland Conference Graduate Research Scholarship. The award is for $500 and is given to McNair Alumni who recently completed their undergraduate degree and have also begun their post-graduate studies. Jensen is currently pursuing his Ph.D. in Psychology at the University of Wisconsin-Madison.
Graduate School Reflections

Diana Restrepo is a McNair alumna who completed her Master of Arts in Latin American & Caribbean Studies at KU in August 2014, and immediately began her doctoral studies in the Geography Department at the same institution. Diana took some time to answer several questions about her journey through graduate school, including her research topic and any advice she would pass on to current McNair Scholars.

What motivated you to pursue graduate school?

“I have always been a biologist and my interest is to work on macro-level processes in nature, for example looking at water systems and looking at how its surroundings may affect them. At the end of my undergraduate career and thanks to the McNair Scholars Program, I found two amazing mentors who encouraged me and supported me in my dream of working in environmental issues related to water resources. While I had prepared myself to become a biologist by training at The University of Kansas and at Johnson County Community College, I felt the need to go back to my culture and link both disciplines together in a Master’s program. Therefore, I decided to join the Latin American Studies MA program at KU.”

What was the focus of your research?

“I developed a semi comparative study looking at watershed management in the Midwest and in the Andes of Colombia. During my last year as a Masters student I took a Geography class with Dr. J Christopher Brown and it inspired me to merge both my natural sciences background (BS in Molecular Biosciences) and social sciences (MA in LA studies) in the discipline of Geography. During this class I learned that Geography uses a framework based on nature, society, and the meaning or culture present in a specific place. For me, this place is back in the city of Manizales, Colombia, in South America. As an overarching theme, I am interested in the impact that land use has on the quality and quantity of water in this region. Most importantly is the effects that encroaching climate change will have on water resources and on the animal and human communities that depend on it. At this moment I am interested in exploring how cattle ranching practices affect surface water resources in the area and how "sustainable cattle ranching" is aiming to address these impacts.”

What advice would you give to students aspiring to attend graduate school?

“First, be patient. If you are an overachiever, like me, keep in mind that when entering a program you will always have to face a steep learning curve at the beginning. Everyone around you may seem intimidating because they have been in the program for a while, sometimes a long time, they seem to know so much, and you want to be able to have sophisticated conversations with them, but you are not there yet. Take a step back and understand that you will get there, it takes a while to gain all that knowledge. Be patient. Second, take advantage of opportunities. If funding or award opportunities come your way take advantage of these opportunities! Coming from a developing country, I was amazed at all of these opportunities coming my way, and I was so surprised to hear students not wanting to apply for them! Opportunities like these are almost non-existent in developing countries.”
For Donald Spradling, the motivation to further his education stems from a desire to be a positive influence to others. As a husband and father of five children, he understood the need to overcome personal challenges in order to set an example for his family. As an officer in the United States Navy, Donald was selected and decorated for his ability to lead others. These experiences fostered a deep sense of responsibility and community in Donald, and he believed entering higher education would better enable him to lead others.

These values brought Donald to the University of Kansas to pursue a Bachelor of Science degree in Civil Engineering, where his leadership qualities gained in the military transferred into his academics through his confidence in collaborating with faculty, graduate students, and peers. In the summer of 2013, Donald worked for the Kansas Transportation Research Institute, using his expertise to aid graduate students in completing assigned tasks. With his extensive field knowledge and experience in civil engineering, combined with his leadership skills and ability to manage resources, Donald was selected as a teaching assistant for a fluid mechanics course, a position typically filled by a graduate student. He wanted to continue working with students, but realized that an advanced degree and preparation for graduate school was necessary.

Donald joined the McNair Scholars Program in spring 2014, and since then he has worked with Dr. Alfred Parr, studying the structural integrity of bridge piers. In the spring of 2015, Donald will pursue a Master’s degree in Structural Engineering at the University of Kansas.