Innovation, Inspiration, Improvement: Research as the Gateway to Graduate Education

Dr. Heather Neff, Director, Eastern Michigan University McNair Scholars Program
Kimberly Freeman, M.A., LLPC., McNair Program Specialist

Funded by grant from the U.S. Department of Education, the Eastern Michigan University McNair Scholars Program assists first-generation students in gaining admission to, and succeeding in doctoral education.

Our eighth year has been marked by innovative programming, inspiring research projects and continuous improvement. With the full restoration of previously sequestered funding, we worked with thirty-five (35) high-achieving students representing every EMU College. All of our seven graduating seniors have gone on to prestigious graduate programs or professional positions, and we shattered our previous record of sixteen (16) Undergraduate Symposium presentations with a stunning twenty-eight (28)! Three of our students have been invited to attend highly selective summer research programs at the University of Michigan, and we are excited to announce that an alumna of our program has attained EMU McNair’s first Doctoral degree!

McNair Scholars are active in every aspect of EMU campus life, serving as officers in student organizations, as residence hall staff, and as supervisors of Alternative Spring Break programs. Committed to service, McNair Scholars also volunteer extensively throughout our community. All McNair participants conduct challenging research with faculty mentors in their academic disciplines, and many are involved in additional Honors College activities.

This year our program saw a number of innovations, including the creation of the McNair Team Challenge, which brought our sophomore and junior classes together in a competition to create the “best” research proposal. The Team Challenge fostered unity and collegiality between our students, while teaching them the elements of a successful research proposal.

Remaining committed to the persistence and success of first-generation students in STEM fields (Physics, Biology, Chemistry, Engineering or Math), we have increased our overall STEM representation from 14% in 2012, to our goal of 40%.

EMU McNair remains exceptionally successful in assisting participants to complete undergraduate studies and obtain admission to graduate school. An overall 72% of our alumni have undertaken Master’s and Doctoral studies. Of that group, 28% are currently enrolled in a Master’s degree program, 37% have completed a Master’s degree and 7% are enrolled in doctoral studies. Twenty-seven percent (27%) of our alumni have pursued graduate studies at EMU.

Volume 7 (2014) of the McNair Scholars Research Journal published scholarly articles by eight students; the 62 articles published in the journal since 2008 have been downloaded by readers around the globe over 80,000 times (http://commons.emich.edu/mcnair/).

The weekly McNair Research Seminars, attended by our sophomore (Cadet) and junior (Intern) participants during the Fall and Winter semesters, offered support to our students in all aspects of undergraduate life. Our ongoing 2015 Summer Research Institute includes graduate admissions seminars taught by Dr. Arnold Fleischmann, Dr. Ellen Koch and Dr. Christine Neufeld; our rising seniors are also currently taking a Princeton Review Graduate Record Examination preparatory course, funded with support from EMU Student Government.

We have particularly benefitted from the support of Campus Life, the Graduate School, the College of Arts and Sciences, the Office of Financial Aid and the continued generosity of the University. Thank you to Gregg Costanzo, Marcus Adams, Professor Emerita Sarah Huysvaert, Dr. Sonia Chawla Wright, Research Compliance Officer, Vice President and Associate Provost Jeffrey Kentor, CAS Dean Thomas Venner, CAS Associate Dean Kate Mehuron, Provost Kim Schatzel and President Susan Martin.

The success of EMU McNair is only possible because of the generous support of our faculty mentors, who offer our students both personal support and challenging research experiences. Our 2014 - 2015 faculty mentors include professors Eric Acton, Ruth Ann Armitage, Kimberly Barrett, Ernest Behringer, Marti Bombyk, Ramona Caponegro, Anne Casper, Yvette Colón, Natalie Dove, Gavin Edwards, Crissy Frye, Jeffrey Guthrie, Stephen Huprich, Toni Stokes Jones, Renee Lajiness-O’Neill, Pamela Landau, Lois Mahoney, Kay McGowan, Rusty McIntyre, Maria Milletti, Derek Mueller, Heather Neff, Ross Nord, Barbara Patrick, Dave Pawlowski, Janet Okagbue-Reaves, Carol Schlagheck and Philip Tartelone.
Innovation: The McNair Team Challenge

In order to learn about the process of writing research proposals, as well as encouraging friendship between our sophomore (Cadet) and junior (Intern) cohorts, the McNair Team Challenge was premiered during Fall Semester, 2014. Students were divided into teams of 4-5 students, based on academic discipline, and asked to create a research proposal of 6-10 pages, including an Abstract, Review of Literature, Methodology, Timeline, Budget, and Works Cited page. The topics included: (1) What positive and negative effects do supermodels have on ordinary women?, (2) What are GMO foods, and are they safe for human consumption?, (3) What are the positive and negative effects of Hip-Hop on listeners?, (4) What are the benefits and detriments of a second-language requirement for all Americans during K-12 education?, and (5) What are the effects of fast-food and liquor stores in low SES communities? Teams used time during our Friday Research Seminars to develop their proposals, and attended classes at Halle Library on the use of research databases, as well as guidance from the EMU Writing Center on academic writing. Each team handed in both a formal paper, and presented a PowerPoint version of their proposals before a jury consisting of Dr. Claudia Petrescu, the Graduate School, Dr. Jennifer Fong, Director of EMU Upward Bound, and Dr. Mary Zdrojkowski, Director of EMU Select Student Support Services. The winners of our first Team Challenge were Team 2, who researched the prevalence of food allergies linked to the consumption of GMO foods. Each member of the team enjoyed a special luncheon at the Asia City Buffet, and a gift certificate for textbooks.

Inspiration: The Opportunity to Share

During the 2014-15 academic year, McNair Scholars presented their research at EMU, national McNair conferences and at professional academic events. In September, Dr. Neff and Kimberly Freeman, McNair Program Specialist, accompanied a group of nine senior Scholars to the University of Kansas McNair Heartland Research Conference in Kansas City, MO. Each Scholar had the opportunity to meet students from across the United States, enjoy a graduate fair of over forty universities, and attend graduate application workshops. Having learned the components of research writing during the Team Challenge, our Cadet and Intern Scholars launched individual research projects under the supervision of faculty mentors, leading to the presentation of twenty-eight (28) McNair-related papers and posters at EMU’s prestigious Undergraduate Symposium in March. Seven Interns also traveled to the University of Maryland’s “Creating a Global Impact: Scholarship, Leadership, and Excellence in the 21st Century” McNair Conference in March. With a graduate fair of over 100 schools, ongoing graduate admissions seminars, numerous panel discussions, and the presentation of some 200 student research papers, the EMU McNair Scholars were treated to an enriching experience. Eight of our 35 students also took advantage of McNair funding to attend, and present their research, at professional conferences in Social Work, Chemistry, Literature, Biology, and Linguistics, in locations including San Francisco, New Orleans, Richmond, Grand Rapids, Kalamazoo, East Lansing, and Ann Arbor.

Improvement: Raising the Standards and Supporting the Results

Admission to EMU McNair is competitive. The ideal McNair Scholar is intellectually curious, academically ambitious, yet willing to trust advice and work with others. As the academic world changes, we strive to offer our students relevant and engaging research experiences. To this end, EMU McNair has split its graduate assistantship between Ms. Alexandra Cuadra Fernandez, a McNair alumna of Florida International University and current graduate student in our Mathematics program, and Mr. Thomas Passwater, who is seeking to become a specialist in university writing programs. With the help of our new McNair staff, we plan to provide our students with expert support in collecting and collating data, writing research, developing effective graduate admissions materials, and preparing for the Graduate Record Examination. We trust that such ongoing developments in staffing, planning, and supporting the needs of our students will lead to their continuing success in attaining undergraduate degrees, and persisting to graduate studies.

EMU McNair will publish the 8th volume of the McNair Scholars Research Journal, in both paper and electronic format, in September, 2015. Volume 7 (2014) included research on an impressive range of topics, from the use of MRI scans in the study of children with Autism, to the impact of advanced flight technology in the cockpit. The 2015 edition will feature the work of the Interns whose research will be presented at the McNair Research Colloquium on June 10th. Read the project titles, below.
2014 - 2015 EMU McNair Graduation Roster

This year, EMU McNair welcomed seven undergraduate students to our prestigious alumnae:

Kryn Ambs, B.S. in Aviation, Science and Math: accepted a position as a counselor at NASA’s Space Camp in Huntsville, Alabama. Dr. Philip Tartelone, Mentor.

Brandon Britt, B.A. in Secondary Education, Math; Honors College: will attend the Ohio State University M.A. program in Education Leadership, Student Affairs. Also admitted to Kent State University, Indiana University, the University of Georgia, the University of Pennsylvania, EMU, and Michigan State University. Dr. Toni Stokes Jones, Mentor.

Carly Evich, B.S. in Psychology, Honors College: will attend the Doctoral Program in Developmental Psychology at Purdue University; also admitted to doctoral programs at Kent State University and the University of Rochester. Dr. Stephen Huprich, Mentor.

Gabriel Green, B.A. in English, Honors College: will attend Penn State’s M.A. program in Composition / Rhetoric; also admitted to EMU and Michigan State University. Dr. Derek Mueller, Mentor.

Chris Haskin, B.S. in Chemistry. Currently attending Eastern Michigan University M.S. Program in Chemistry. Dr. Gavin Edwards, Mentor.

Jazmin Rodgers, B.S. in Psychology, Honors College: will attend the University of Minnesota’s M.A. program in Human Resources Management; also admitted to Wayne State University. Dr. Natalie Dove, Mentor.

Sylvia Torres, B.S. in Chemistry, Honors College. Will attend Florida International University’s program in Criminal Forensics; also admitted to Towson University. Dr. Ruth Ann Armitage, Mentor.

The following EMU McNair alumnae completed a Master’s Degree during the 2014-2015 academic year:

Khadija Abbas, University of Michigan, M.A. in Public Health
Jennifer Alexander, Columbia Teacher’s College, M.A. in Education
Andrea Appel, Oakland University, M.A. in Education
Dawn Kelly, University of Oklahoma M.S. in Fire and Emergency Management
Yasmeen Prince, New York University, Master’s of Social Work
Walter Reggans, Eastern Michigan University, M.A. in Economics and M.A. in Information Systems
Lanita Sledge, University of Maryland, M.A. in Student Affairs, Educational Leadership
Elisa Torres, San Diego State University, M.B.A. in Organizational Psychology
Victor Torres, Michigan State, M.A. in Teacher Education
Courtney Williams, Pepperdine University, M.S. in Clinical Psychology

Our current Doctoral Degree candidates include:

Jasmine Lee, Michigan State University, Higher Adult and Lifelong Education
Julie Krupa University of South Florida, Criminal Justice
Ashley Rowland, University of Colorado / Boulder, Ph.D. in Molecular Biology
Dara Walker, Rutgers University, African American Studies
Folayan Zheng, Nova Southwestern University, Computer Engineering

...And we are delighted to introduce EMU McNair’s first Ph.D., Dr. Ashley Rowland!!

EMU graduate Ashley Rowland (’09) completed her Ph.D. in Molecular, Cellular and Developmental Biology at the University of Colorado, Boulder. Dr. Rowland’s research focuses on basic cell biology and seeks to understand how cell organelles coordinate their functions. Her EMU McNair mentor, Dr. Robert Winning, Professor of Biology, notes that, “Not only did Ashley earn her Ph.D., but her dissertation research was published as the cover paper in Cell, the highest-impact scientific journal in the world. We're all really proud of her.”
Each year, EMU McNair recognizes outstanding students achievements in scholarship and service at our annual McNair Awards Ceremony. The following students and mentors were honored on April 8th, 2015:

**Marcus K. Adams Outstanding Service Award:** Mr. Adam Natoli, McNair Graduate Assistant

**Sarah H. Huyvaert Mentor of the Year Award:** Dr. Janet Okagbue-Reaves, Professor of Social Work

**Research of the Year:** awarded to the Scholar who produced the highest quality research published in the *McNair Scholars Research Journal*

**Ms. Carly Danae Evich**

**Scholar of the Year:** awarded to the Scholar who best exemplified Leadership, Service and Academic Excellence throughout the year

**Mr. Christopher Haskin**

### 2015 Undergraduate Symposium Presenters:

Nineteen of our 35 participants, representing the Cadet, Intern and Scholar (senior) cohorts, presented a total of 28 papers and poster demonstrations at the 2015 Undergraduate Symposium:

<table>
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<tr>
<th>Student Name</th>
<th>Title</th>
<th>Mentor Name</th>
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<tbody>
<tr>
<td>Shahana Ahmed</td>
<td>&quot;Examination of Replication Dynamics in Fragile Sites through Molecular Combing,&quot;</td>
<td>Dr. Anne Casper, mentor.</td>
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<tr>
<td>Larry Borum III</td>
<td>&quot;Democratizing Fashion: The Effects of The Evolution of Fashion Journalism from Print to Online,&quot;</td>
<td>Dr. Carol Schlagheck, mentor.</td>
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<tr>
<td>Kayla Boyd</td>
<td>&quot;You Can’t Just Pick One Race and You Shouldn’t Have To: Analyzing Biracial Protagonists in Young Adult Fiction,”</td>
<td>Dr. Ramona Caponegro, mentor.</td>
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<tr>
<td>Mariah Brito</td>
<td>&quot;Queering Asexuality: Asexual-Inclusion in Queer Spaces,”</td>
<td>Dr. Eric Acton, mentor.</td>
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<tr>
<td>Tiffany Browne</td>
<td>&quot;Computational Analysis of the Stereoselective Synthesis of Substituted Pyrrolidines,”</td>
<td>Dr. Maria Milletti, mentor.</td>
</tr>
<tr>
<td>William Trice</td>
<td>“Fractal Patterns and Chaotic Scattering,”</td>
<td>Dr. Ernest Behringer, mentor.</td>
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### 2015 Summer Research Opportunity Program Participants

Three McNair Scholars were selected to attend highly competitive Summer Research Opportunity Programs at the University of Michigan: **Brandie Bentley:** Future Public Health Leaders Program, **Diamond Jones:** Cadinale Laboratory (Chemistry research), and **Allante Moon:** Future Public Health Leaders Program.

### 2015 McNair Research Colloquium

On Wednesday, June 10, 2015, the McNair Interns will present their McNair Research Projects to their families, friends and the university community. These projects, developed with the support of their faculty mentors, represent months of careful preparation. **Please join us** to celebrate their work in Halle Library Carillon Room, from 10:00 a.m. – noon.

**Shahana Ahmed:** “Examination of Replication Dynamics in Fragile Sites through Molecular Combing,”

**Kayla Boyd:** “Democratizing Fashion: The Effects of The Evolution of Fashion Journalism from Print to Online,”

**Tiffany Browne:** “You Can’t Just Pick One Race and You Shouldn’t Have To: Analyzing Biracial Protagonists in Young Adult Fiction,”

**Dominique Canning:** “Queering Asexuality: Asexual-Inclusion in Queer Spaces,”

**Diamond Jones:** “Computational Analysis of the Stereoselective Synthesis of Substituted Pyrrolidines,”

**Brialle Ringer:** “College Students Experiencing Homelessness: The Consequence of Failed Macro Policies,”

**Mikki Smith:** “A Generation at Risk: The Ties Between Zero Tolerance Policies and The School to Prison Pipeline,”

**William Trice:** “Fractal Patterns and Chaotic Scattering,”

### 2014 – 2015 McNair Scholar Accomplishments

**Shahana Ahmed:** EMU Presidential Scholar, Honors, Dean's List, Meta Hellwig Biology Fellowship Recipient, Bea Johnson Scholarship, Honor Study Abroad Award, Vice-President for the Society or Collegiate Leadership & Achievement, Florence and Rome Study Abroad.

**Rasheed Atwater:** Dean’s List, President of Society of Africology, Honor Graduate of A.I.T. Motor Vehicle Operations.

**Brandie Bentley:** Honors, Dean’s List, Mid-East Honors Association (MEHA) Conference, Honors Student Fellowship Recruiter.
Larry Borum III: Education First Opportunity Scholarship, Resident Advisor.

Kayla Boyd: Honors, Irene Little Wallace, Emerald, and TRUEMU Scholarship, Study Abroad Scholarship, Dean’s List, Florence and Rome Study Abroad, Senior Staff Writer for the Eastern Echo, Relay for Life, Walk Now for Autism Speaks, VISION Kid Konnection, and New Student Orientation Assistant.

Mariah Brito: Secretary of the Secular Freethinkers at EMU, and Undergraduate Research Stimulus Award.

Brandon Britt: Gates Millennium Scholar, EMU Presidential Scholar, NASPA Undergraduate Fellowship, Dean’s List, Community Service Director of Black Student Union, Student Coordinator EMU BrotherHOOD Initiative.

Tiffany Browne: EMU Presidential Scholar, Dean’s List, Barry A. Fish and Honors Fellowship Undergraduate Research Awards, Grade Grievance Committee (English), National Orientation Director’s Association Case Study Award, Society for Collegiate Leadership and Achievement Secretary, 2015 LeaderShape, Orientation Team of EMU Advisors and Mentors.

Dominique Canning: Emerald Scholarship, and Dean’s List.

Kyana Dixie: Honors, Emerald Scholarship, Dean’s List, and Honors.

Carly Evich: Honors, Undergraduate Research Assistant, President of Psychology Club, Dean’s List, Sigma Delta Pi, EMU Active Minds, Psychology Advising Service, Brown-Chappell Honors Scholarship, Award for Best Psychology Student, Undergraduate Symposium Student Excellence Scholarship, RR. Clyde Ford Endowed Scholarship, Agricultural Research at Purdue (ARP) Graduate Diversity Research Assistantship.

Victoria Fisher: Honors, Education First Scholarship, Dean’s List, Meals on Wheels Volunteer, and TruEMU Grant.

Chris Haskin: Martin and Antoinette Gorski Endowed Scholarship.

Diamond Jones: Honors, Education First Opportunity Scholarship, Dean’s List, Undergraduate Research Fellowship, American Chemical Society Petroleum Research Fund, and Hypercube Scholar Award.

Rosaly Maldonado: Honors, Award, Emerald Scholarship, National Scholars Program, EMU Latino Alumni Chapter Scholarship, Undergraduate Research Assistant, and NACCP Education Chair.

Allante Moon: Honors, National Society of Collegiate Scholars, Community Foundation for Southeast Michigan Scholarship, and South Shore Women’s Club Scholarship.

Deborah Munganga: Honors, Education First and Kiwanis Scholarship, Alternative Spring Break, Dean’s List, Honors, Vice-President of the Way Campus Bible Study, and Undergraduate Research Stimulus.

Nyambura Njee: Alternative Spring Break, Secretary for Society of Africology, Advisory Board Member of Students of Color Panel.

Brialle Ringer: Honors, Emerald Scholarship, Deans List, Honors Fellowship, Alternative Spring Break: participant, Coordinator, Site Leader, Alternative International Break Coordinator, SOS Community Service, Growing Hope Volunteer, Canvassing for House of Representatives Candidate, Nonprofit Leadership Alliance Member, and Students for Animal Rights Member.

Mikki Smith: Honors, Dean’s List, Honors, 2014 CHHS Student of the Year, President of Mentor2youth, Public relations Michigan Works Youth Council, and Association of Black Social Workers.

Gloria Tonks – McNair Intern, Recognition of Excellence, Secretary of OLASW, and Youth Leader.

Sylvia Torres – Honors, McNair Senior, Member of the Chemistry Club, American Chemistry Society, National Society of Collegiate Scholars, Presented research at Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy.

Particular thanks to:

The 2014 – 2015 McNair Advisory Board

Reginald Barnes  Keith Jason  Dr. Harriet Lindsay  Claudia Petrescu
Elise Buggs  Dr. Toni Stokes Jones  Professor Julia Nims, Head  Angela Wafer
Caryn Charter  Dr. Sema Kalaian  Dr. Dawn Pearcy  Dr. Mary Zdrojkowski
Gregg Costanzo  Dr. Jeffrey Kentor  Dr. Janet Okagbee-Reaves  Dr. Jennifer Fong

Our Donors: Dr. Toni Stokes Jones and Mr. Marcus Adams

And...Thank You, EMU! We’re looking forward to next year!
MISSION STATEMENT

The Eastern Michigan University McNair Scholars Program prepares high-achieving undergraduates from first-generation, low-income and traditionally underrepresented homes for success in pursuing doctoral studies. Through a rigorous program of research development, academic advising, personal mentoring and test preparation, the McNair Program assists its Scholars in achieving academic excellence, and attaining their scholarly and professional goals.

The EMU McNAIR CREED

MCNAIR SCHOLARS pursue HIGHER EDUCATION while PERSEVERING through personal and academic hardships. We push ourselves beyond the ordinary in our goal to succeed in DOCTORAL STUDIES. We are inspired to conduct RESEARCH, understand CULTURAL DIFFERENCES, appreciate the ARTS and to learn about the WORLD. McNair Scholars foster POSITIVE CHANGE on our CAMPUS, in our COMMUNITIES and in our PROFESSIONAL LIVES.