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THE PENN STATE MCNAIR JOURNAL

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WELCOME

Since 1991, the Penn State McNair Scholars Program has enriched the lives of students at Penn State. The McNair Program holds a very special place in our lives, as well as in the lives of the faculty and staff who work with our students. This publication celebrates their achievements and we offer it to our readers with pride and pleasure.

This is the eighteenth issue of the Penn State McNair Journal. We congratulate the 2011 Penn State McNair Scholars and their faculty research advisors! This journal presents the research conducted in the summer of 2011 by undergraduate students from Penn State who are enrolled in the Penn State McNair Scholars Program.

The articles within this journal represent many long hours of mutual satisfying work by the Scholars and their professors. The results of their research are published here and have also been presented at various research conferences around the country. We are especially proud to see how these students have grown as researchers and scholars. The hard work, dedication, and persistence required in producing new knowledge through research is most evident in these articles.

We very much appreciate the guidance, expertise, caring and patience of our fine group of Penn State faculty research advisors. For their ongoing support and assistance, we thank Rodney Erikson, President of Penn State University; Robert Pangborn, Interim Provost and Dean of Undergraduate Education; Hank Foley, Senior Vice President of Research and Dean of the Graduate School; Regina Vasilatos-Younken, Associate Dean of the Graduate School, and Suzanne Adair, Assistant Dean and Senior Director of the Office of Graduate Educational Equity Programs, the administrative home of the McNair Scholars Program.

We are also fortunate to have the support and encouragement of many faculty and staff members who have worked with our students as social mentors or who have presented workshops and seminars on the many aspects of graduate and faculty life. You give the most precious of gifts to our students – your time in volunteering to support, encourage and nurture our Scholars' hopes and dreams.

Teresa Tassotti Project Director

TRIO PROGRAMS ON THE NATIONAL LEVEL

Since their establishment in the mid-sixties as part of Lyndon Johnson's War on Poverty Program, the federal TRIO Programs have attempted to provide educational opportunity and make dreams come true for those who have traditionally not been a part of the educational mainstream of American society. The TRIO programs are funded under Title IV of the Higher Education Act of 1965. While student financial aid programs help students overcome financial barriers to higher education, TRIO programs help students overcome class, social and cultural barriers to higher education. There are eight TRIO programs, which include the original three – Upward Bound, Talent Search and Student Support Services. The additional programs are Educational Opportunity Centers, Upward Bound Math & Science Centers, the Ronald E. McNair Post-Baccalaureate Achievement Program, Veterans Upward Bound, and a training program for TRIO staff. McNair programs are located at 202 institutions across the United States and Puerto Rico. The McNair Program is designed to prepare participants for doctoral studies through involvement in research and other scholarly activities.

TRIO PROGRAMS AT PENN STATE

The 11 TRIO Programs at Penn State comprise six of the nine TRIO programs. There are two Educational Opportunity Centers, one in Philadelphia and the other serving southwestern Pennsylvania, two Talent Search Programs serving western Pennsylvania and the city of York, Ronald E. McNair Scholars Program, four Student Support Services Programs, Upward Bound, and Upward Bound Math & Science. These programs annually serve more than 6,000 students, from 6th graders through adults, all with clear potential for academic success. The programs operate at the following Penn State campuses: University Park, Wilkes-Barre, Greater Allegheny, and the Pennsylvania Institute of Technology. The programs also operate in communities across the state, often linking with middle schools, high schools, and community agencies. The programs focus on helping students overcome economic, social, and class barriers so that they can pursue education beyond high school.

MCNAIR SCHOLARS PROGRAM AT PENN STATE

Designed for low-income and first-generation college students, and students from groups underrepresented in graduate education, the McNair Scholars Program at Penn State encourages talented undergraduates to pursue the doctoral degree. The program works closely with these participants through their undergraduate career, encourages their entrance into graduate programs, and tracks their progress to successful completion of advanced degrees.

The goal of the McNair Program is to increase graduate degree attainment of students from the above-mentioned underrepresented segments of society. McNair Scholars are presented with opportunities to study and do research in the University's state-of-the-art facilities in order to hone those skills required for success in doctoral education. Through both academic year and summer program components, McNair Scholars are required to complete a series of steps that lead to their application and enrollment in a graduate program of their choice.

Since 1991, the McNair Scholars Program at Penn State has helped 221 students earn their baccalaureate degrees. Of these graduates, 181 or 82 percent have gone on to graduate school at institutions across the country and overseas. As of March 2012, 44 or 20 percent have earned their doctoral or professional degrees and another 67 or 37 percent have earned their master's degrees only. Currently, there are 53 or 24 percent of alumni who are still enrolled in graduate programs. Among the institutions McNair alumni have attended or now attend are: Arizona State, Boston University, Columbia, Cornell, DePaul, Harvard, Howard, Indiana University-Bloomington, Iowa State, Johns Hopkins, New York University, Ohio State, Penn State, Purdue, Rice University, Rutgers, Stanford, Temple, Texas A&M, UCLA, University of California-Berkeley, University of California-Davis, University of Chicago, University of Florida, University of Georgia, University of Illinois-Urbana Champaign, University of Maryland-College Park, University of Michigan, University of North Carolina-Chapel Hill, University of Pennsylvania, University of Texas-Austin and Yale, to name just a few.

Summer 2011 McNair Scholars and Program Staff



Summer 2011 Penn State McNair scholars and program staff gather together during the 2011 National Penn State McNair Summer Research Conference held July 8-10, 2011 on the University Park campus.

ABOUT RONALD E. MCNAIR



Dr. Ronald Erwin McNair, the second African American to fly in space, was born on October 21, 1950, in Lake City, South Carolina. In 1971, he received a Bachelor of Science degree, magna cum laude, in physics from North Carolina A&T State University. He continued his education at the Massachusetts Institute of Technology (MIT) where, in 1976, he earned his Ph.D. in physics.

While at MIT, McNair performed some of the earliest

development of chemical and high-pressure CO lasers. He went on to study laser physics at E'cole D'ete Theorique de Physique in Les Houches, France. He was well published and nationally known for his work in the field of laser physics through the Hughes Laboratory.

In 1978, McNair realized his dream of becoming an astronaut when he was selected from a pool of several thousand applicants to be included in the first class of thirty-five applicants for the space shuttle program. Ronald McNair and six other astronauts died on January 28, 1986 when the space shuttle *Challenger* exploded after launching from the Kennedy Space Center in Florida.

McNair was an accomplished saxophonist; held a sixth-degree, black belt in karate; and was the recipient of three honorary doctorates and a score of fellowships and commendations. He was married to the former Cheryl Moore and is the father of two children, Reginald Ervin and Joy Cheray. After his death, Congress approved funding to honor the memory of McNair by establishing the Ronald E. McNair Post-Baccalaureate Achievement Program, which became the sixth program funded under the TRIO Programs umbrella.

"Historians, who will write about McNair, the man, will discover that there was much more to him than his scholastics achievements. Friends who knew him, say he walked humbly and never boasted about his achievements. They say his commitments were to God, his family and to the youths he encouraged to succeed." (Ebony, May 1986)

SPECIAL ACKNOWLEDGEMENTS

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McNair Alumni on the Move

We congratulate our recent graduates and are very proud of their accomplishments. We also extend congratulations to those Penn State McNair alumni who have earned their graduate degrees as well as those alumni currently enrolled in graduate studies.

At the graduate level...

Mimi (Abel) Hughes (PSU 2002)

Juan Abreu (PSU 2002) Felix Acon-Chen (PSU 2004) Taimarie Adams (PSU 2003) Luis Agosto (PSU 2005) Christopher Arlene (PSU 2004) Karla (James) Anderson (VSU 1999) Omotayo Banjo (PSU 2004) Angelo Berrios (PSU 2000) Laurian Bowles (PSU 1999)

Aaron Brundage (PSU 1995)

Jose Buitrago (PSU 1995) Sherese Burnam (PSU 1999) Saalim Carter (PSU 2007) Debbie Charles (PSU 001)

Jacqueline Cauley (PSU 2009) Sofia Cerda-Gonzalez (PSU 1999) Andra Colbert (VSU 2005) Michael Collins (VSU 2005) Trinaty Crosby (PSU 2005) Evelyn Cruz (VSU 1996) Lurie Daniel (PSU 2000) Natasha Deer (PSU 1995) Alicia DeFrancesco (PSU 1997) Jorge Delgado (PSU 2004) Eve Dunbar (PSU 1998) Latia Eaton (VSU 2003) Carol Elias (VSU 1997) Mark Elwell-Heyler (PSU 2002) Felecia Evans-Bowser (PSU 2002) Nakesha Faison-Ajai (PSU 1999)

Max Fontus (PSU 1999) Tiana Garrett (VSU 2001)

Michael Godeny (PSU 2002) Antoinette Gomez (PSU 1994)

Cristina Gonzalez (PSU 1999)

M.S., University of California-Los Angeles Ph.D., University of California-Los Angeles J.D., Rutgers University M.S., Stevens Institute of Technology J.D., Harvard University Ph.D, University of Pennsylvania M.P.P., Harvard University M.S., Central Michigan University Ph.D., Penn State University M.S, Joseph's University M.A., University of London, M.A., Ph.D., Temple University M.S., Penn State University Ph.D., Purdue University M.L.A., Harvard University M.A., University of Central Florida M.A., University of Chicago M.S., University of Maryland-College Park V.M.D., Tuskegee University M.A., Queen's University (Belfast) D.V.M., Cornell University M.Ed., Johns Hopkins University M.D., Howard University M.S.W., Howard University M.S., University of Virginia J.D., New York University M.A., Florida State University M.B.A., Babson College M.S., Purdue University Ph.D., University of Texas-Austin M.S.W., University of Baltimore M.Ed., Virginia State University M.S., Cornell University M.S., Texas Tech University M.S., Penn State University M.A., University of Michigan M.S., Ph.D., Indiana University-Bloomington M.P.H., Ph.D., University of North Carolina-Chapel Hill Ph.D., University of Florida M.S., Clark-Atlanta University M.S.W., University of Denver M.D., Albert Einstein Medical School

Oneximo Gonzalez (PSU 2007) Kathy Goodson (VSU 2005) Sherie Graham (PSU 2002) Derek Gray (VSU 1998)

Mark Harewood (VSU 2000) Atiya Harmon (PSU 2002) Dennis Harney (PSU 1993) Janet Harris (PSU 1996) Meng He (PSU 2002) Paula Henderson (PSU 2005) Angela Hess (PSU 1998) Jeffrey Himes (PSU 1997) Priscilla Hockin-Brown (PSU 1996) Dustin Holloway (PSU 2002) Alisa Howze (PSU 1994) Juliet Iwelumor (PSU 2006) Andrea Jones (VSU 1998) Michelle Jones-London (PSU 1996) Irene Karedis (PSU 2006) Leshawn Kee (VSU 1998) Haroon Kharem (PSU 1996) Robert Ksiazkiewcz (PSU 2007) Carrie (Hippchen) Kuhn (PSU 2001) Judy Liu (PSU 1995)

LaShawne Long-Myles (PSU 2001) Lanik Lowry (PSU 2002)

Charmayne Maddox (PSU 2004)

Lourdes Marcano (PSU 1995) Debra Marks (VSU 1996)

Leanna Mellott (PSU 2000) Robert Miller (PSU 1999) Bethany Molnar (PSU 1998) Shartaya Mollett (PSU 2007) Nicole Morbillo (PSU 1998) Ndidi Moses (PSU 2000)

Jennifer Mulcahy-Avery (PSU 2009) Rashid Njai (PSU 2000)

Benjamin Ogrodnik (PSU 2009) Julio Ortiz (PSU 2002) Robert Osmanski (PSU 1995) Hui Ou (PSU 2005) Mark Palumbo (PSU 2000)

Tracie Parker (VSU 2003) Anjana Patel (PSU 2008) Franche Pierre-Robinson (VSU 2002)

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Tiffany Polanco Katz (PSU 2004) Kenya Ramey (VSU 2006) Natalie Ragland (PSU 2001) Kristin Rauch (PSU 2004) Cavin Robinson (PSU 2002) Caryn Rodgers (PSU 2000) Sassy Ross (PSU 2001) Armando Saliba (PSU 2003) Lilliam Santiago-Quinones (PSU 1998) Adriana Segura (PSU 2006) Thomas Shields (PSU 1998) Christie Sidora (PSU 2000) Andrew Snauffer (PSU 1996) Melik Spain (VSU 1996) Anthony Spencer (PSU 1999) Kashra Taliaferro (PSU 2003) Scott Test (PSU 2008) Constance Thompson (VSU 1996) Steven Thompson (PSU 1997) Anthony Paul Trace (PSU 2004) Shawyntee Vertilus (PSU 1998)

Joshua Walker (PSU 2007) Katherine Wheatle (PSU 2008) Patrice White (VSU 2001) Kahlil Williams (PSU 2001)

Romon Williams (VSU 1995) Wendy Williamson (PSU 1995) Michele Wisniewski (PSU 2004) Kenya Wright (VSU 1997) Robert Allen Young (PSU 2007) Heneryatta Ballah (PSU 2004)

Michael Benitez (PSU 2001)

Dipnil Chowdhury (PSU 2007)

Catherine Crawford (PSU 1996)

Maria Gutierrez-Jaskiewicz (PSU 2005)

Marissa (Graby) Hoover (PSU 2000)

Angel Miles (PSU 2003)

Edward Mills (VSU 2003)

Amber Ortega (PSU 2008)

Zakia Posey (PSU 1999)

Ph.D., Rutgers University M.A., Temple University V.M.D., Ross University M.S., Ph.D., University of California-Davis M.A., Ph.D., DePaul University Ph.D., St. John's University M.F.A., New York University M.A., University of Incarnate Word M.Ed., Bowling Green State University M.D., Northwestern University M.A., Penn State University M.A., Duquesne University M.S., Michigan Technical University M.S., Virginia Tech University Ph.D., Northwestern University M.Ed., University of Maryland-College Park M.L.A., Clarion University M.S., Cornell University M.S., Indiana University-Purdue Ph.D., Clemson University M.S., Ph.D., University of Virginia M.P.H./M.D., New York Medical College M.Ed., American University M.P.H., Emory University M.A., University of Maryland-College Park M.A., Ph.D., University of Pennsylvania J.D., Columbia University M.S., Wake Forest University M.B.A., Penn State University Pharm.D., Massachusetts College of Pharmacy M.S., North Carolina State University M.Ed., University of Pittsburgh M.A., Ohio State University, now pursuing Ph.D. In Women's Studies at same institution M.Ed., Penn State University, now pursuing Ph.D. in Educational Leadership at Iowa State University M.S., University of Pennsylvania, now pursuing Ph.D. in Engineering at same institution M.Ed., Central Michigan University now pursuing graduate studies at Cappella University M.A., University of California-Berkeley now pursuing Ph.D. in Near East Studies at Yale University M.S., Temple University, now pursuing Ph.D. in Educational Leadership at Penn State University M.A., University of Maryland-College Park, now pursuing Ph.D. at same institution M.A., University of Illinois at Urbana-Champaign, now pursuing Ph.D. at same institution M.S., Penn State University, now pursuing Ph.D. at University of Colorado in Atmospheric Sciences M.S., Michigan State University, now pursuing Ph.D. at same institution

At the undergraduate level...

Rafiat Adebowale (PSU) May 2011 Lance Boyer (PSU) May 2011 James Feaga (PSU) May 2011 Arlana Henry (PSU) May 2011 Alexa Hodge (PSU) May 2011 Quortne Hutchings (PSU) May 2011 Nile Koebler (PSU) May 2011 Esteban Luna (PSU) May 2011 Rafiqah Mustafaa (PSU) May 2011 Arielle Riutort (PSU) May 2011 Nicole Shelton (PSU) May 2011 Brian Walker (PSU) May 2011

On to graduate school in Fall 2011...

Lance Boyer now pursuing post-baccalaureate studies in Physics at the Perimeter Institute for Physics

James Feaga now pursuing graduate studies in Wildlife, Fisheries and Aquaculture Sciences at Mississippi State University

Arlana Henry now pursuing graduate studies in Sociology at University of Georgia Alexa Hodge now pursuing graduate studies in Mental Health Counseling in Schools and Communities at Penn State University

Quortne Hutchings now pursuing graduate studies in Educational Leadership Studies at University of Illinois-Urbana Champaign

Nile Koebler now pursuing graduate studies in Mechanical Engineering at Cornell University

Esteban Luna now pursuing graduate and medical studies at University of Pennsylvania

Rafiqah Mustafaa now pursuing graduate studies in Educational Leadership Studies at University of Illinois-Urbana-Champaign

Arielle Riutort now pursuing graduate studies in Counseling Psychology at University of Akron

Brian Walker now pursuing graduate studies in Industrial/Organizational Psychology at Hofstra University

In graduate school as of Fall 2011...

Ilyas Abukar (PSU 2011) Diana Barrantes Gomez (PSU 2011) Shanya Cordis (PSU 2010) Latoya Currie (VSU 1999) Alana Curry (VSU 2007) Keresha Deanes (PSU 2010) Mohamed (Faacy) Farook (PSU 2006) Marlena Freeman (PSU 2010) Dawn Gannon (PSU 2010) Blake Garcia (PSU 2009) Tatiana Gochez-Kerr (PSU 2010)

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Alisa Shockley (PSU 2010) Kedesha Sibliss (VSU 2003) Luisa Soaterna (VSU 2004)

Marquita Stokes (PSU 2009) Jon-Michael Tucker (PSU 2004) Chelsie White (PSU 2010) Aimy Wissa (PSU 2008)

Daniel Zaccariello (PSU 2008)

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