FROM THE AMS SECRETARY

2016 Mathematics Programs That Make a Difference

Photo courtesy of the Morehouse College Department of Mathematics.

The Harriett J. Walton Symposium on Undergraduate Mathematics Research, held annually at Morehouse College, brings mathematics students from Georgia and beyond to share oral presentations about their work.

Each year, the AMS Committee on the Profession (CoProf) chooses outstanding programs to be designated as Mathematics Programs That Make a Difference. For 2016 CoProf has selected the DEPARTMENT OF MATHEMATICS AT MOREHOUSE COLLEGE.

Citation

Be it resolved that the American Mathematical Society and its Committee on the Profession recognize the Department of Mathematics at Morehouse College for its significant efforts to encourage students from underrepresented groups to continue in the study of mathematics.

Morehouse College is a private, all-male, historically black college in Atlanta, Georgia, with enrollment of approximately 2,200 students. In recent years its Department of Mathematics has graduated an average of fourteen mathematics majors per year. This places Morehouse as the nation's top producer of black male mathematics degree recipients (and one of the top producers of all black mathematics graduates). Roughly half of recent mathematics majors have gone on to graduate programs

in STEM disciplines, a majority of those in the mathematical sciences. Notably, three alumni earned mathematics PhDs in 2015 (and a total of six in the past seven years); for comparison, a total of fifteen black male US

citizens earned a PhD in mathematics nationwide in 2013-14.

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According to one of the letters in support of its nomination, "The Morehouse program emphasizes a culture of mentoring and strong personal interactions between faculty and students.... When I talk to Morehouse students, the common theme is not *what* led to their success but *who* did so."

Alumni of the program

laud the Morehouse faculty for fostering a welcoming and caring environment while at the same time establishing and maintaining high expectations for the majors.

The AMS commends the members of the Department of Mathematics at Morehouse College for their high level of

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commitment and successful efforts to improve diversity in the profession of mathematics in the United States.

Program Description

Each year, the Department of Mathematics at Morehouse College hosts the Harriett J. Walton Symposium on Undergraduate Mathematics Research. Now in its fourteenth year, the conference gives undergraduate math majors in Georgia and neighboring states a venue in which to present their own research and to make contact with others sharing their interests. The conference was named to honor Harriett J. Walton, a remarkable black woman who joined the Morehouse faculty in 1958. By that time she held master's degrees in mathematics from both Howard and Syracuse Universities. While teaching full-time at Morehouse and raising four children, she earned her PhD in mathematics education from Georgia State University in 1974. A teacher and mentor of exceptional dedication and a beloved member of the department, she retired from Morehouse in 2000, after forty-two years of service.

That the conference was named after this inspirational figure gives a hint of the soul of the Morehouse department. This is a place that values and draws on its heritage and traditions while striving to improve itself today and plant seeds for the future.

Founded in 1867, Morehouse College is the nation's only institution of higher education dedicated to black men. Its approximately 2,200 students are all male, and nearly all of them are black. With an emphasis on top-quality academics, the college aims to produce highly educated and morally conscious graduates who are, as the Morehouse website puts it, "the heart, soul and hope of the community."

The Department of Mathematics at Morehouse is oriented to this ideal. Its faculty strive to provide a challenging yet nurturing environment for all of its students. Much of the department's energy

is focused on excelling in the ordinary business of all mathematics departments: delivering high-quality instruction in

rigorous courses. Faculty provide plenty of office hours for one-on-one help, students can join study sessions to work together, and the Mathematics Lab offers a sociable setting where students provide or receive tutoring. Encouragement and support are given both to students who are struggling and to students who are excelling.

Through interactions with faculty and colloquium speakers, Morehouse mathematics students gain new perspectives on the opportunities a degree in mathematics opens up. They also start to see beyond their coursework and to get a taste of what research in mathematics is like. Mathematics majors are encouraged to participate in Research Experiences for Undergraduates programs, and some also do research projects with Morehouse faculty. Students make presentations in departmental poster ses-

*A mathematical
bond that creates a
brotherly sense of
community*

Photo courtesy of the Morehouse College Department of Mathematics.

Morehouse mathematics professor Ulrica Wilson (second from left) with students Aquia Richburg, Terrell Glenn, and Caleb Bugg on the Morehouse Mathematics Awards Day in April 2015.

sions and at local and national mathematics conferences, including the Harriett J. Walton Symposium.

The department hosts various social events that build community among the students and foster a sense of camaraderie centered on shared interest in mathematics. When a mathematics education researcher, Christopher Jett, was invited by the department to interview its majors in 2014, he found that "[the students'] mathematical bond created a brotherly sense of community among them" (quotation from a summary report submitted to the Morehouse department). He described the atmosphere in the Morehouse department as a "Mathematical Brotherhood."

Today the department has about sixty mathematics majors, and an average of fourteen of them graduate

Photo courtesy of the Morehouse College Department of Mathematics.

Morehouse students do mathematics at an "analysis party".

each year, making Morehouse the nation's top producer of black male mathematics bachelor's degree recipients. Increasingly, Morehouse math majors are continuing on to graduate school. Of the twenty-nine majors who finished in 2014 and 2015, half are now in graduate programs, most of them in the mathematical sciences and nearly all in science, engineering, or technology disciplines.

The year 2015 was a banner year for the department, as three of its alumni received PhDs in mathematics: Kevin Buckles (PhD, Tufts University), now at Henry Ford College; Bobby Wilson (PhD, University of Chicago), now a Moore

Instructor at the Massachusetts Institute of Technology; and Samuel J. Ivy (PhD, North Carolina State University), now an assistant professor at the United States Military Academy in West Point. They are among a total of six Morehouse alumni who received mathematics doctorates over the past seven years. To put those numbers in context, consider that, between 2007 and 2014, an average of 13 mathematics PhDs went to black men each year, out of an average yearly total of 1,700 mathematics PhDs.

Photo courtesy of the Morehouse College Department of Mathematics.

Morehouse mathematics students at the Joint Mathematics Meetings: Tre Willis, Zerotti Woods, Aquia Richburg, Jordan Clark, Jerrell Mure, Octavious Talbot, and Malachi Morgan.

In a letter supporting the nomination of Morehouse for the Programs That Make a Difference award, Ivy wrote that the Morehouse Department of Mathematics has great professors who “perpetuate the ideals of Morehouse in producing great leaders and mathematical scholars....I only wish to continue the efforts of this program and its faculty within my career.” In this way, the seeds the Morehouse department is planting are bearing fruit beyond the borders of its own institution.

About the Award

CoProf created the Mathematics Programs That Make a Difference designation in 2005 as a way to bring recognition to outstanding programs that successfully address the issue of underrepresented groups in mathematics. Each year CoProf identifies one or two exemplary programs that:

1. aim to bring more individuals from underrepresented minority backgrounds into some portion of the pipeline beginning at the undergraduate level and leading to an advanced degree and professional success in mathematics or retain them in the pipeline,
2. have achieved documentable success in doing so, and
3. are replicable models.

The CoProf subcommittee making the selection for this year's awards consisted of Michael Dorff, Pamela Gorkin, Kendra Killpatrick, William McCallum, and David Savitt (Chair).

Previously designated Mathematics Programs That Make a Difference are: Graduate Program at the Univer-

Morehouse mathematics professors Curtis Clark (far left) and Duane Cooper (far right) flank students Arman Green, Aquia Richburg, and Johnny Gillings Jr. during commencement in May 2015.

Photo courtesy of the Morehouse College Department of Mathematics.

sity of Iowa, and Summer Institute in Mathematics for Undergraduates at Universidad de Puerto Rico, Humacao (2006); Enhancing Diversity in Graduate Education (EDGE) at Bryn Mawr College and Spelman College, and Mathematical Theoretical Biology Institute (MTBI) at Arizona State University (2007); Mathematics Summer Program in Research and Learning (Math SPIRAL) at University of Maryland, and Summer Undergraduate Mathematical Science Research Institute (SUMSRI) at Miami University (Ohio) (2008); Department of Mathematics at University of Mississippi, and Department of Statistics at North Carolina State University (2009); Department of Computational and Applied Mathematics at Rice University, and Summer Program in Quantitative Sciences at Harvard School of Public Health (2010); Center for Women in Mathematics and the Center's Post-Baccalaureate Program at Smith College, and Department of Mathematics at North Carolina State University (2011); Mathematical Sciences Research Institute in Berkeley (2012); Nebraska Conference for Undergraduate Women in Mathematics (2013); Carleton College Summer Mathematics Program, and Rice University Summer Institute of Statistics (2014); and Center for Undergraduate Research in Mathematics at Brigham Young University, and Pacific Coast Undergraduate Mathematics Conference (2015).

—Allyn Jackson