

Math Alliance News

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The Math Alliance Research Study

Upcoming Events:

Undergraduate Research Program: Capstone Conference—

Mathematical Biosciences Institute (MBI)
Application Deadline: July 12

Dynamics of Seismicity, Earthquake Clustering and Patterns in Fault Networks—

SAMSI in Research Triangle Park, NC
October 9-11, 2013

Field of Dreams Conference—

Phoenix, Arizona
November 1-3, 2013

Call for PAESMEM Nominations

Nominations are now open for the 2014 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)

PAESMEM nomination materials due June 5, 2013

Fellowship & Grant Opportunities

Mathematical and Statistical Methodologies for DOE Data-Centric Science at Scale

James S. McDonnell Foundation Postdoctoral Fellowship Awards in Studying Complex Systems

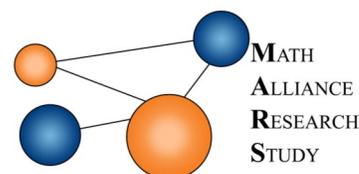


From left to right: Blanca Rincon, Casey George-Jackson, Martha Makowski, & Lisa Dobson

Greetings! This article is the first of what will become a regular distribution of briefs by the Math Alliance Research Study (MARS), located at the University of Illinois at Urbana-Champaign, which has been sanctioned by the National Alliance directors to conduct research on the Alliance program. The first part of this letter outlines the work we hope to accomplish in this role and our current timeline for data collection and analysis. We intend to use future briefs to keep Alliance stakeholders such as you updated on our project and share information about topics that may be of interest. Future briefs will be announced in the Math Alliance Newsletter and accessible through the MARS [website](#).

More specifically, we plan to use these briefs to help the Alliance community continue the discussion of underrepresented students in the mathematical sciences by helping to locate National Alliance practices in current research on educational practices. For example, in the coming months we plan to release briefs on Research Experiences for Undergraduate programs (REUs), the difference between evaluation and research, and mentoring. As the Alliance works to build a sustainable model for the future, we hope the information we provide will serve as entry points into the educational literature on these structures. This literature can then be used to help make the argument for change and to help acquire funding for Alliance-related work at individual campuses. If there is a particular topic you would like us to produce a brief on, please feel free to contact us using the information provided below.

Our ability to conduct research on the Alliance, understand how the Alliance works, and spread the word about the program will rely on your participation in the study. To achieve this, we need your help as a member of the Alliance. Online adaptive surveys will be distributed in fall 2013 to both students and mentors. Our team will be at the Field of Dreams conference in November conducting focus groups and observations. Finally, we will be traveling to a select number of Graduate Program Group campuses to collect additional data. We look forward to working with you as data collection begins and encourage you to participate as much as you can!



Contact us!

If you have any questions, thoughts, or suggestions for future briefs, please feel free to contact us.

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Coming Soon
-New Website!

Our website is currently undergoing a facelift! The website will feature a new look and easier navigation. Now is a perfect time to update your mentor profile. If you have any edits or updates please e-mail those to billie-townsend@uiowa.edu

Serving Underserved Students: The Activities of the Newark Area Math Circle

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National Alliance for Doctoral Studies
in the Mathematical Sciences



Motivated by a talk on math circles at the 2011 Mathematical Field of Dreams conference in Arizona, I started the Newark Area Math Circle in Newark, New Jersey. I wanted to provide an environment to underserved students who are interested in mathematics to convene and solve problems. We opened with 22 middle school and high school students in February 2012.

Math circles have gained popularity in the United States over the last decade or so. It is an informal gathering of primary or secondary schools students, usually led by a mathematician to discuss, solve, or pose problems in advanced mathematics. It is an outreach activity by mathematicians to generate enthusiasm and excitement in youth about mathematics. Problems emanate from fields such as number theory, combinatorics, geometry, probability, group theory, etc. This spring semester, our math circle solved problems using linear diophantine equations, the Euclidean algorithm, Pascal's Triangle, triangular numbers, the Principle of Inclusion-Exclusion, modular arithmetic, etc. In our last session this spring semester, Newark Area Math Circle students investigated the Fibonacci sequence, and learned fractals.

The Newark Area Math Circle holds its classes at Rutgers University-Newark on Saturdays in the spring and fall semesters from 9:30am to 12:30 pm. We currently have a group of 40 students from 18 schools in New Jersey. One of our students is home-schooled. Also, some students drive about one hour each way to come to class. Because of our location in Newark, our math circle has 80 percent of its students from underrepresented minority groups. We have 2 Caucasian students and 6 Asian students.

In addition to our spring and fall classes, we have a very active summer program. We hold a 20-day summer camp, 4 days per week, 3 hours per day. We offer our students a course in Number Theory and Cryptography. Last year, 36 students participated in the camp, free of charge. This year, due to scarcity of funds, the camp may not be free to every student.

The Newark Area Math Circle has been able to offer its programs due to small grants and volunteerism. So far, our programs are mainly supported by two mini grants from MSR and donations from parents. Our programs are also made possible by the volunteerism of our instructional staff comprised of mathematics faculty members from Kean University and Rutgers University-Newark.

To finish, I would like to highlight a couple more things. This year, for their first time, our students participated in American Mathematics Competitions, namely the AMC 8 and the AMC 10. The students were thrilled about participating, and were very excited on their performance on the contests. Also, this year, we were able to partner with a middle school in Newark. Their students do math circle activities on weekdays at their local school, and they join our classes on Saturdays. We are in the process of replicating this to more schools in the near future so that we can bring more underserved students into our math circle to enjoy mathematics.



-Louis Beaugris

For more information on math circles, please visit www.newarkareamathcircle.org and www.mathcircles.org.

INGenIOuS:

Strategies for advancing the mathematics and statistics workforce

The increasingly complex scientific and social problems we are facing demand innovative solutions and require a workforce that is trained to meet these challenges. To best position mathematics and statistics departments, the mathematical sciences community is organizing a series of online and in-person events to develop strategies for investments in the training of the next generation of undergraduate and graduate students.

Over the next 10 weeks, we will be organizing online communities that focus on several key themes related to the workforce. An in-person workshop will be held July 14-17, 2013 in Washington, DC.

If you have run successful recruitment programs, developed innovative training strategies, or are passionate about the future of our profession, we want to hear from you! We believe the outcomes of this project will have far-reaching implications for training of the mathematical sciences workforce and help inform future investments by the funding agencies.

Join this community of stakeholders from academic institutions, professional societies, government agencies, and industry to explore.