



Newsletter

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Contents

From the Editor	2
Publishing in the Newsletter	3
NAM 50th Anniversary Celebration at the 2019 Joint Mathematics Meetings ..	4
Empowering Students to do Research in Mathematics at Texas Southern	7
Michelle Craddock Guinn Gives 2018 Wilkins Lecture	8
Hewitt Endowed Grad Fellowship	10
Price, a Champion for Diversity	11
The New York Immigration Coalition Features Dr. Terrence Blackman	12
2019 MAA-NAM Blackwell Lecture	13
Undergraduate MATHFest XXVIII	14
Returning to Research: A Personal Journey Through REUF	19
An Existence Proof: Mathematicians of the African Diaspora Website, Part II	22
NAM Calendar	25
NAM Board of Directors	32
NAM Membership Form	33

The Fresh New Faces of Our Mathematics Community



Welcome to the ranks, this year's presenters in **the Haynes-Granville-Browne session of Presentations by Recent PhDs; Alexander Barrios, Ranthony Edmonds, Nadia Monroe Mills, Anisah Nu'Man, Samuel Ivy, Quentin Robinson, and Seye Adekanye** are flanked by Dr. Edray Goins on the left and Dr. Talitha Washington on the right.

The National Association of Mathematicians (NAM)

publishes the NAM Newsletter four times per year.

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NAM's History and Goals: The National Association of Mathematicians, Inc. (known as NAM) was founded in 1969. NAM, a nonprofit professional organization, has always had as its main objectives, the promotion of excellence in the mathematical sciences and the promotion and mathematical development of under-represented minority mathematicians and mathematics students. It also aims to address the issue of the serious shortage of minorities in the

workforce of mathematical scientists.

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NAM's Official Webpage: <http://www.nam-math.org>

Newsletter Website: The NAM website has a list of employment as well as summer opportunities on the Advertisements page. It also features past editions of the Newsletter on the Archives page.

Letters to the editor and articles should be addressed to Dr. Omayra Ortega via e-mail to editor@nam-math.org.

From the Editor



"When I let go of what I am, I become what I might be"

- Lao Tzu.

Spring is a wonderful time of renewal, rebirth, and reflection. We should take this time, during the National Association of Mathematicians' 50th year in existence,

to think about the monumental successes of this organization and begin to dream of what the future of this organization might look like. The 50th anniversary celebration at the Joint Mathematical Meetings in Baltimore, MD was a joyous occasion marked by panels, research talks, and expository sessions. My most favorite session each year is the Haynes -Granville-Browne Recent PhD session because often this is the first time that

these recent graduates have presented at the JMM. Their fresh energy is palpable! This year Dr. Duane Cooper became the very first recipient of the newly founded Stephens-Shabazz Teaching Award, another new beginning for the organization.

NAM is compiling papers associated with the talks given at the JMM to commemorate the 50th anniversary celebration into conference proceedings. All of this year's presenters have been requested to submit articles by May 15, 2019. *However, there is room for additional papers.* Any parties interested in contributing a scholarly article to these proceedings should contact me at the following email address, editor@nam-math.org. We are also seeking individuals who are interested in serving on an editorial review panel for these proceedings.

Sincerely, Dr. Omayra Ortega



Publishing in the NAM Newsletter

Submissions: The *NAM Newsletter* is a quarterly publication. Articles and letters should be submitted electronically to the editor at editor@nam-math.org, or by postal mail to Dr. Omayra Ortega, NAM Newsletter, Sonoma State University, Department of Mathematics and Statistics, 1801 E. Cotati Ave., Rohnert Park CA 94928. You can find more information at the web page

<https://www.nam-math.org/submitting-advertisements-and-articles.html>

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Each consecutive issue thereafter 75% of the first issue charge.

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Deadlines: The deadlines for submissions and advertisements can be found in the following table.

Edition	Deadline
Spring	February 13
Summer	May 13

Edition	Deadline
Fall	August 13
Winter	November 13

Advertisements should be submitted electronically to the editor at editor@nam-math.org, or by postal mail to Dr. Omayra Ortega, NAM Newsletter, Sonoma State University, Department of Mathematics and Statistics, 1801 E. Cotati Ave., Rohnert Park CA 94928.

We reserve the right to reject any advertising that is not consistent with the stated goals of NAM, or that is in any way deemed inappropriate.



NAM 50th Anniversary Celebration at the 2019 Joint Mathematics Meetings

by Omayra Ortega

The National Association of Mathematicians celebrated 50 years of promoting excellence and inclusion in the mathematical sciences at the 2019 Joint Mathematics Meeting through invited lectures, panels, special sessions, and a banquet. Recognizing the importance of mathematics in our society requires that we promote math equity within our community. NAM was founded 50 years ago by 17 individuals who recognized this need and answered the call to service.



NSA-NAM Town Hall Panelist: Ulrica Wilson (moderator), Michael Young, Raegan Higgins, Tanya Moore, Mel Currie

The National Security Agency (NSA) and NAM jointly sponsored a town hall on "the Status of the African Diaspora in the Mathematical Sciences." The discussion that resulted from this town hall and reception was a call to action that will hopefully spawn new collaborations between the individuals and organizations that were in attendance.



NSA-NAM Town Hall Participants

Ulrica Wilson moderated the panel which consisted of Michael Young (Iowa State University), Raegan Higgins (Texas Tech University), Tanya Moore

(Goodwill Industries - San Francisco), Mel Currie (NSA - Retired).

A full day of talks chronicling, "The Mathematics of Historically Black Colleges and Universities (HBCUs) in the Mid-Atlantic," was organized under an AMS special session. The talks included:

- Cheryl M. Adeyemi (Virginia State University) *The Identification of Variables Associated with Student Outcomes on Praxis II Mathematics Content Exams at a South Central VA HBCU*
- Gaston Mandata N'Guerekata (Morgan State University) *Pseudo almost periodic solutions for a Nicholson's blowflies model with mortality term*
- Bonita V. Saunders (National Institute of Standards and Technology) *Complex Variables, Mesh Generation, and 3D Web Graphics: Research and Technology Behind the Dynamic Visualizations in the NIST Digital Library of Mathematical Functions*
- Abdul-Aziz Yakubu (Howard University) *Mathematics Research at Howard University: Pure and Applied Mathematics*
- Caleb J. Ashley (University of Michigan) *A Capstone Companion to Mathematics*
- Kendra E. Pleasant (Morgan State University) *Inscribing n -gons*
- Nakeya D. Williams (The United States Military Academy at West Point) *Cardiovascular dynamics during orthostatic stress assessed via pulsatile and non-pulsatile models*
- Carmen Wright (Jackson State University) *On the Structure of Generalized Symmetric Spaces of $SL_n(Fq)$*
- Leona A. Harris (University of the District of Columbia) *My Choice to Change the World: An Exploration of My Journey from the Spelman College Mathematics Department to an Urban Public HBCU in the Nation's Capital*



- Neil Hindman (Howard University) *The Research of 20 Ph.D. Students at Howard University*
- Shelly M. Jones (Central Connecticut State University) *Motivating Students in Mathematics: Women Who Count*
- Asamoah Nkwanta (Morgan State University) *Episodes in the Life of a Genius: J. Ernest Wilkins Jr.*
- Dawn A. Lott (Delaware State University) *A Lott of History*
- Johnny L. Houston (Elizabeth City State University) *The National Association of Mathematicians (NAM), The First Fifty Years (1969-2019): Contributions and Influences as an Advocate and a Catalyst for Improvement*

The MAA Invited Paper Session titled, "The Past 50 Years of African Americans in the Mathematical Sciences," that included the following talks:

- Michael Young (Iowa State University) *A Random Walk With a Black Graph Theorist*
- Talitha Washington, (Howard University) *Hidden Figures: The Mathematics of Katherine Johnson and Rudy Horne*
- William A. Massey (Princeton University) *A Uniform Acceleration Trilogy for Dynamic Rate, Single Server Queueing Transience*
- Fern Y. Hunt (National Institute of Standards and Technology) *Finding Nodes for Fast Communication in Small and Large Networks*
- Scott W. Williams (SUNY Buffalo) *On Mathematicians of the African Diaspora*

Dr. Henok Mawi (Howard University) gave the 2019 Clayton-Woodard Lecture titled, *On Mathematical Problems in Geometric Optics*.



There were seven talks given by recent PhDs in the Haynes-Granville-Browne Session of Presentations by Recent Doctoral Recipients.

- Seye E Adekanye *Developing Non-Standard Finite Difference (NSFD) Schemes for a System of Coupled Second Order Differential Equations*
- Ranthony A.C. Edmonds (The Ohio State University) *Factorization in Polynomial Rings with Zero Divisors*
- Quentin Robinson (North Carolina Central University) *Frequency of Upstream propagating soliton generation in the forced Korteweg-de Vries Equation*
- Alexander J Barrios (Carleton College) *Minimal Models of Rational Elliptic Curves with non-Trivial Torsion*
- Nadia Monroe Mills (University of the Virgin Islands) *The UVI Growth Model: A model for retention and persistence for STEM undergraduates*
- Samuel J Ivy (United States Military Academy) *Classifying the Fine Structures of Involutions Acting on Root Systems*
- Anisah N. Nu'Man (Ursinus College) *Counting Rainbow Triples*

Dr. Anisah Nu'Man and Dr. Alexander Barrios both won the NSF Math Institutes Prizes for outstanding presentations by a recent PhD.

The inaugural Stephens-Shabazz Teaching Award, named in honor of Clarence Stephens and Abdulalim Shabazz, was given to Duane Cooper of Moorehouse College. This prize will be awarded annually to a mathematics educator who has significantly contributed to the development of mathematical talent in underrepresented undergraduate students and encouraged underrepresented undergraduate students to pursue mathematical careers and/or the study of mathematics at the graduate level, with preference given to faculty from Historically Black Colleges and Universities (HBCUs).



Dr. Duane Cooper, Moorhouse College

Dr. Evelyn Boyd Granville (University of Texas at Tyler), the second African-American woman to receive a PhD in mathematics, received the NAM Golden Anniversary Legacy Award. Dr. Shelly M. Jones (Central Connecticut State University) introduced both Dr. Granville and the award. NAM was incredibly honored that Dr. Granville was able to come to the Joint Meetings so that we could present her with this award at the NAM banquet.



Dr. Evelyn Boyd Granville



President Edray Goins thanking Dr. Talithia Williams, this year's Cox-Talbot lecturer

Dr. Talithia Williams (Harvey Mudd College) gave a wonderful and engaging 2019 Cox-Talbot lecture titled, "A Seat at the Table: Equity and Social Justice in Mathematics Education." Dr. Williams called on all of us as math educators to inspire our

students to feel joy in the beauty of mathematics by creating inclusive classrooms by building upon our students identity and lived experiences.



Drs. Jackson and Harris at the NAM Banquet

Dr. William Christian (Department of Defense) presented Dr. Melvin Curie (Department of Defense) with the NAM Lifetime Achievement Award for his enduring contributions to the mathematics community of his work at the DoD, his mentorship of young colleagues, and his humor.



Dr. Melvin Currie receiving his award, flanked by Dr. Christian on the left and President Goins on the right

The NAM Centenarian Award was presented to the family of Katherine Coleman Goble Johnson, a remarkable mathematician renowned for her calculations of orbital mechanics, critical to the success of the first and subsequent U.S. manned spaceflights. Dr. Johnson turned 100 years young on August 26, 2018.



Dr. Katherine Johnson's family representative surrounded by admirers at the NAM banquet

Omayra Ortega *Omayra Ortega is the chair of the National Association of Mathematicians Publications-Publicity Committee and editor of the NAM Newsletter. She can be reached at <mailto:editor@nam-math.org>.* □

Empowering Students to do Research in Mathematics at Texas Southern

by Jacqueline Brannon

Dr. Willie Taylor has been a member of NAM for a very long time and will give the Bhurucha-Reid lecture at the Faculty Conference on Research and Teaching Excellence at the end of April.

Dr. Willie Taylor started his career at Texas Southern University (TSU) as a research mathematician and mentor in 1981. He sought to promote research to add credibility to the TSU Department of Mathematics. In 1981 Dr. Taylor surveyed the HBCUs and noted that many of them did not have strong research programs. He was dually concerned about the opportunities for junior and senior level mathematics majors having experiences as interns and research assistants to professors who engaged in mathematical research.

As he looks back over his 38 year career at TSU, he realizes that the credibility of the Department of Mathematics is improved and his role as a mentor and advisor to many students has been productive. His strategy included establishing a research experience named for a senior mathematician who gained national prominence in the early Sixties. Dr. Taylor says, "I created the L. L. Clarkson Mathematical Research Experience during the summer of 2009." Dr. Taylor was assisted by Professor Robert Nehs and after ten years, both professors are still active and respected for their dedication to research and to the development of students who are inspired to continue their studies in graduate schools across the United States.

Dr. Taylor stated, "My research efforts have also helped the department produce several excellent students who will soon receive their PhDs in Mathematics from a multitude of schools, like the University of Iowa, Arizona State University, and the University of Texas."



Dr. Taylor added, "My research efforts have also been shared with new, young faculty members in the mathematics department, as well as more seasoned faculty in the College of Science, Engineering and Technology (COSET)." He continued, "Assistant Professor Jahmario Williams, Associate Dean Oscar Criner, and I published a joint paper based on my research."

In 2019 TSU's excellent reputation has attracted a national conference, hosted by the National Association of Mathematicians (NAM). NAM will hold the conference on teaching and research at TSU in

March 2019. Dr. Taylor has been invited to deliver the keynote address during the conference and this honor is bestowed on him because of the numerous research papers he has published in the Qualitative Theory of Difference Equations.

Dr. Taylor continues to mentor students who have the potential of completing advanced degrees in mathematics. He has a keen and discerning eye to identify young mentees. During the summer in 2018, he spotted another young mathematics major named Asia Bryant, who worked with him to get early exposure to mathematical research. In a recent telephone interview this writer could hear the joy in Asia's voice as she described her experiences with Dr. Taylor.

Dr. Taylor sets high expectations for his students and his students continue to honor him by achieving his expectations. The credibility of the TSU Mathematics Department has increased. As former students acquire accolades and advanced degrees many of the students return to Dr. Taylor's office and say, Thank you.

Dr. Taylor has a vision for the future. He stated, "I plan to remain on campus, writing up

manuscripts for possible publication, show undergraduate students how research is done, and implementing the GEMMS Project (Great Expectations in Mathematics for Minority Students)."

He asserts, "My future plans will enhance the image of TSU as a producer of quality STEM graduates, as well as showing that the mathematics department at an HBCU can be productive, even with large teaching loads."

The ongoing collaboration of Dr. Taylor and Dr. Roderick Holmes, who is currently the Interim Department Head of the TSU Mathematics Department is further evidence of Dr. Taylor's effectiveness as a mentor. Taylor and Holmes are the first two African American males to receive PhDs in mathematics from the University of Houston. Even greater things are expected from the TSU Mathematics Department because several young, energetic faculty have been hired.

Jacqueline Brannon *Jacqueline Brannon is the NAM Region C Member, covering the mid-west and southwest. She can be reached at region-c-member@nam-math.org.* □

Michelle Craddock Guinn Gives 2018 Wilkins Lecture *by Edray Herber Goins*

The 2018 J. Ernest Wilkins Lecture was given on Friday, September 28, 2018 by Michelle Craddock Guinn, Associate Professor of Mathematics at Belmont University. Her talk was titled *Enhancing Imagery Techniques*. The lecture is an hour-long talk at NAM's Undergraduate MATHFest, given by an established researcher, to motivate our undergraduates to continue to pursue research in the mathematical sciences. Dr. Guinn gave her talk as part of Undergraduate MATHFest XXVIII, was held from September 28 - 30, 2018 at Spelman College in Atlanta, Georgia. Spelman undergraduate Maya Jones introduced her.



Michelle Craddock Guinn



The lecture was followed by a reception sponsored by the Education and Diversity Department of the American Mathematical Society (AMS).

Dr. Guinn gave an hour-long address on the mathematics of determining distance using images from two slightly offset vantage points, such as the way people have depth perception from eyesight. The objective of Dr. Guinn's research is to design an algorithm to enhance stereoscopic imagery so that it adapts to the viewing distance of the observer, with seamless transitions among stereo and hyperstereo levels. Dr. Guinn described in her talk her quest to develop an algorithm to provide hyperstereo in conjunction to stereo enhancing the depth information needed to improve performance and judgment. She described a technique to augment the benefits of stereo and hyperstereo, and she presented an algorithm which uses image smoothing, blending and edge detection techniques to provide such an enhancement.



Guinn at Spelman College

Dr. Guinn is originally from Decatur, Georgia. She graduated from Southwest DeKalb High School and went to Spelman College in Atlanta, Georgia, where she majored in mathematics. Dr. Guinn received both masters and doctoral degrees in Mathematics from the University of Mississippi in Oxford,

Mississippi. Her area of study was Functional Analysis. After graduation, she accepted a post-doctoral position at the United States Military Academy in West Point, New York; and later was awarded the Davies Fellowship which allowed her the time to research Image Processing at the United States Army Research Laboratory (ARL) in Adelphi, Maryland. Dr. Guinn joined the Department of Mathematics and Computer Science at Belmont University in the fall of 2013, and she was recently promoted to Associate Professor and earned tenure. She is the first African American to be granted tenure and promotion in the Mathematics and Computer Science Department at Belmont University, and she is the second in the College of Science and Mathematics.

The J. Ernest Wilkins Lecture series was inaugurated in 1994 during NAM's Undergraduate MATHFest IV at North Carolina A&T. It is named in honor of Jesse Ernest Wilkins, Jr. (November 27, 1923 – May 12, 2011), an internationally recognized nuclear scientist, mechanical engineer and mathematician. The inaugural lecture was given by Wilkins himself. The Lecture is to be given annually at the Undergraduate MATHFest, a conference for which Wilkins was a frequent attendee. J. Ernest Wilkins was known in the press as the "Negro Genius." Wilkins received his B.S. degree as a Phi Beta Kappa graduate at the age of 16, his M.S. degree at age 17, and his Ph.D. degree at the age of 19. Although he has been highly praised as a superb practitioner of his crafts, Wilkins is also widely recognized and acclaimed as a highly productive scholar, having published more than 80 journal articles and having produced an additional 22 unpublished reports for the Atomic Energy Commission. Wilkins is the only African American mathematician-engineer elected as a Fellow to the National Academy of Engineering (NAE).

Edray Herber Goins is the President of NAM. He can be reached at president@nam-math.org. □



Hewitt Endowed Grad Fellowship

by Rose Choi



Dr. Gloria Conyers Hewitt

In mid-March, the Gloria Hewitt Endowed Graduate Student Support Fund was established with an initial principal of \$50,000 in order to “promote excellence in the graduate program of the Department of Mathematics, in particular enhancing efforts to achieve a more equitable representation of those under-represented in the field of mathematics.”



UM department chair Emily Stone, Ron Irving, Honoree Gloria Hewitt, Gail Irving, and NAM President Edray Goins

Dr. Hewitt is among the first African-American women in the US to receive a PhD in mathematics. Should the principal (through growth or new

gifts) reach the minimum threshold for a graduate fellowship, which is currently set at \$100,000, the endowment will become the Gloria Hewitt Endowed Graduate Fellowship, to be awarded “with a preference for students who contribute to the goal of a more equitable representation of under-represented minorities and women in the field of mathematics.”



Dr. Hewitt addressing the University of Montana Department of Mathematics

Gloria received her PhD from UW under the supervision of Dick Pierce in 1962, making her the sixth African-American woman to earn a PhD in mathematics. She took a faculty position at the University of Montana in 1961 and remained there until her retirement in 1999, serving as chair from 1995 to 1999. Gloria was also involved in a number of national mathematical organizations and activities. She was a member of the Board of Governors of the Mathematical Association of America, played a major role in the writing of the AP calculus exam and the mathematical portion of the GREs, and served on the executive council for the mathematical honor society, Pi Mu Epsilon.

Rose Choi is a staff writer for the University of Washington. The Public Information Officer at UW can be reached at jurton@uw.edu. □



Price, a Champion for Diversity

by Dylan Housego

This article originally appeared in the July 19, 2018 issue of the San Diego Tribune and has been reprinted with their permission.



Dr. Candice Price

Picture a mathematician, one with a solid record of scholarship and research. Who comes to mind? Chances are it's not a Black woman. Candice Price is unique in her field. The mathematical culture is exclusive, said Price, an assistant professor at the University of San Diego. We still have some old thoughts about who can, and should be doing mathematics. It would be great to change that.

To initiate such change, Price organized the annual Underrepresented Students of Topology and Algebra Research Symposium while pursuing graduate studies at the University of Iowa. The program's goal is to give underrepresented students a place to discuss their research. I started (the symposium) as a grad student, and it was really focused on the math that was being done by the underrepresented and creating these networks of people working together and pursuing research and talking about issues of underrepresentation, Price said.

Throughout her educational and professional careers, it has been her desire to increase female and Black representation in mathematics, as well as fields like science and engineering. One interesting thing about my math path is that I never had a professor that looked like me, Price said. I never had a Black female professor, so one goal of mine was to change that for students.

While the University of Iowa was home to her symposium (it will be staged at Iowa State University next year), Price has been a force for change on the USD campus for two years. I primarily teach here at the University of San Diego. We have the Students of Color in STEM here on campus and I'm involved with them, she said. The Black Student Resource Center, I spend a lot of time there. I do a lot of outreach to our student population on campus.

Price's academic research bridges mathematics and genetics using knot theory. If you think about your DNA as a rope or a string, it can become knotted, Price said. What are the biochemical repercussions of these knots? What does this mean for diseases? What does this mean for genetic coding?



Candice Price is an assistant professor of mathematics at the University of San Diego, where she is involved with Students of Color in STEM and the Black Student Resource Center.

Price promotes mathematical literacy so her students can have the power they need to pursue STEM careers. Those of us that are mathematically literate sometimes use it as power against those that are not, Price said. If you know and feel comfortable with numbers, then you can ask questions, and I think it's important that we have that ability to question authority. She tells students preparing for STEM careers not to compromise on their passions

because many occupations are related to math and science. I know a lot of mathematicians that work for the government, that work for industrial labs, that started nonprofits, that do a lot of things. I think understanding the diversity of different STEM jobs is very important, Price said.

Dylan Housego *Dylan Housego is a member of the U-T Community Journalism Scholars Program and writes for the San Diego Tribune. The San Diego Tribune can be reached at merrie.monteagudo@sduniontribune.com.* □

The New York Immigration Coalition Features Dr. Terrence Blackman

by The New York Immigration Coalition



Dr. Terrence Blackman

Terrence Blackman gave the Blackwell Lecture (<https://www.nam-math.org/blackwell-lecture.html>) in 2015; and hosted NAMs MATHFest XXVII at Medgar Evers College (<https://www.nam-math.org/mathfest.html#XXVII>) in 2017; and introduced the Cox-Talbot Speaker (<https://www.nam-math.org/cox-talbot-lecture.html>) in 2018. He has been a fierce advocate of NAM, bringing 10-20 students from Medgar Evers to attend the NAM Banquet at the Joint Mathematics Meetings consistently for the past several years. –Dr. Edray Goins

Terrence’s story:

“I was born in Guyana in 1968. I moved to the United States in January of 1988 to be a student at Brooklyn College. After graduation from Brooklyn College, I went on to the City University Graduates Center to complete my degree in mathematics.

Having left the Graduates Center I have worked at Medgar Evers College, where I now serve as the Dean of the School of Science, Health and Technology. I’ve worked at Medgar Evers college for almost 25 years. I’ve also served as the Dr. Martin Luther King visiting assistant professor in the department of mathematics at MIT. I’ve served as the 5 college fellow at the Mount Holyoke College in Western Massachusetts. I’ve also served as professor of education research policy and practice at the University of Denver, Colorado. I think it’s important to say that immigrants are extremely important in American society. As an immigrant myself, I think that New York City in particular has been really enriched by the immigrant experience. Here at Medgar Evers College, we welcome immigrants, and I hope the United States continues to be a country which welcomes immigrants. I myself, as an immigrant, am deeply appreciative of the opportunities that have been afforded me in this country and I’ve loved to see those opportunities extended to many people from across the world. I think we’re better when we have the world in our apartment buildings, on our blocks, and in our city”

The New York Immigration Coalition *is an umbrella policy and advocacy organization that represents over 200 immigrant and refugee rights groups throughout New York. They can be reached at info@nyic.org.* □



2019 MAA-NAM Blackwell Lecture *by Omayra Ortega*

Dr. Johnny Houston will give the 2019 MAA-NAM David H. Blackwell Lecture, titled, *Dudeney's No Three-In-Line Problem, Solutions, Conditions, Progress, and Conjectures*



In 1917, Henry Dudeney, an Englishman who had done some intriguing things with mathematical puzzles and games, posed an interesting question for persons interested in discrete geometry. Let an $n \times n$ grid be given in the Euclidean plane for any natural number n , what is the maximum number of points that can be identified in the grid so that no three of these points are in the same line (no 3 colinear). For various natural numbers n , solutions

have been discovered and certain conditions have been encountered.

The presenter discusses many of these solutions and conditions. For large natural numbers n , even for some $n < 60$, progress (or lack of progress) is being made slowly. By the Pigeon Hole Principle, the maximum number of such points that can exist is $2n$. The problem of finding for which n this value is reached is known as the No-Three-In-Line Problem. Several conjectures exist. These conjectures and their motivations are discussed as well as some related problems. However, the No-Three-In-Line Problem is still an open problem. The year 2019 is the centennial year of the honoree, David Blackwell, for which this lecture was named. The presenter will also discuss the life and contributions of David H. Blackwell.

Omayra Ortega is a professor of mathematics and statistics at Sonoma State University and the editor of the NAM Newsletter. She can be reached at editor@nam-math.org. □

A Call for the Endowment Campaign

The NAM Endowment Campaign is truly about providing opportunities for the development of a diverse talent pool in the next generation of mathematicians, as we acknowledge a legacy of past accomplishments of African-American mathematicians. As a friend of NAM, we know you appreciate the importance of this campaign to the achievement of our shared goals. We invite you to volunteer some effort, small or large, toward reaching the campaign goal of \$2 million by the end of 2019. Please contact one of the campaign co-chairs immediately to ask what YOU can do.

We thank you who already have Life Memberships or have donated to the campaign. We welcome your assistance in identifying other Endowment Donors and look forward to hearing from you soon!

Campaign Co-Chairs,
Johnny Houston jhouston602@gmail.com and Sylvia Bozeman sylvia.bozeman12@att.net



Undergraduate MATHFest XXVIII

by Edray Herber Goins



NAM's Undergraduate MATHFest XXVIII was held from September 28 - 30, 2018 at Spelman College in Atlanta, Georgia (Region A). Monica Stephens (Spelman College) and Edray Goins were the main organizers, while Ulrica Wilson (Morehouse College) and Helen Grundman (American Mathematical Society) assisted with the planning and fundraising. The conference was supported by the National Science Foundation (NSF) under Grant No. 1833234.



Participant Demographics

NAM has five meetings every year: the Joint Mathematics Meetings in the Winter; and the Regional Faculty Conference on Research and Teaching Excellence (FCRTE) in the Spring; the Computational Sciences Institute in the Early Summer Fall; the MAA MathFest in the Late Summer; the NAM MathFest in the Fall. NAM's Undergraduate MATHFest is a three-day meeting, typically Friday

through Sunday in the Fall, which rotates around the country based on NAM's regional structure. It is held annually to encourage students to pursue advanced degrees in mathematics and mathematics education. The conference is geared for undergraduates from Historically Black Colleges and Universities (HBCUs), although all are welcome to attend.



Undergraduate MATHFest consists of five components: (1) Student Talks, (2) Poster Presentations, (3) a Graduate Fair, (4) Problem Time with Dr. Cooper, and (5) the J. Ernest Wilkins Lecture. This year, we had over 150 participants – undergraduate students, graduate students, and faculty alike. Some 143 participants had pre-registered for the conference, where 87 were women, 56 were men, and 105 identified as Black or African American. Nine students spoke, and thirteen students presented posters. 27 schools were represented: Allen University, American University, Belmont University, Elizabeth City State University, Florida A&M University, Georgia Institute of Technology, Hampton University, Howard University, Iowa State University, Morehouse College, Morgan State University, North Carolina A&T State University, Pomona College, Prairie State College, Savannah State University, Southern University at New Orleans, Southern University at Baton Rouge, Spelman College, Tennessee State University, Texas Southern University, University of Arkansas at Pine Bluff, University of California at Riverside, University of Massachusetts, University of Michigan at Ann Arbor,



University of San Diego, University of Texas at Arlington, University of the District of Columbia, Virginia State University, and Xavier University of Louisiana.



Shakuan Frankson (left) and Myka Terry

- FranChell Davison (Texas Southern University) spoke on *Dynamics of a mathematical model for four-state binocular rivalry*
- Maya Jones (Spelman College) spoke on *Processing Speed as the Moderator in the Link Between Executive Functioning and Math Achievement*



Presentations and Talks

There were nine talks given by undergraduate and graduate students which lasted 30-minutes each.

- Michael English (Clark Atlanta University) spoke on *On the Analysis of Cycles in the Symmetric Group*, a project supervised by Dr. Torina D. Lewis (Clark Atlanta)
- Paige Helms (University of California at Riverside) spoke on *$SL_2(\mathbb{Z})$ Action on Some Genus g Surfaces*
- Sofia Martinez Alberga (University of California at Riverside) spoke on *E-Positivity and Uniqueness of Chromatic Symmetric Functions*
- Kaila Crosse (University of Michigan at Ann Arbor) spoke on *Application of Grobner Bases in Graph Theory*
- Shakuan Frankson (Howard University) and Myka Terry (Morgan State University) spoke on *Investigating First Returns: The Effect Of Multicolored Vectors*
- Damien Burks (Texas Southern University) spoke on *Cryptographic Vulnerabilities in Network Protocols*
- Ariana N. Brown (Spelman College) spoke on *The Fibonacci Sequence in 21st Century Pop Music*



Damien Burks

There was a friendly competition for the most outstanding oral presentation. Undergraduates Damien Burks (Texas Southern University), Paige Helms (University of California at Riverside), and Sofia Martinez Alberga (University of California at Riverside) each received book prizes from the American Mathematical Society for Outstanding Oral Presentations. FranChell Davison (Texas Southern University), a graduate student, received a Speaking Awards from the NSF-Funded Mathematics Institutes. This award provides a certificate, and reimbursement for the winner's expenses to attend one scientific workshop at any of the nine NSF-Funded Math Institutes during the 18 months following MATHFest XXVIII. Judges who assisted with these prizes were faculty members Kenneth Jones (Elizabeth City State University), Rhonda Vonshay Sharpe (Women's Institute for Science,

Equity and Race), Bhikhari Tharu (Spelman College), and Sindhu Unnithan (Xavier University of Louisiana).

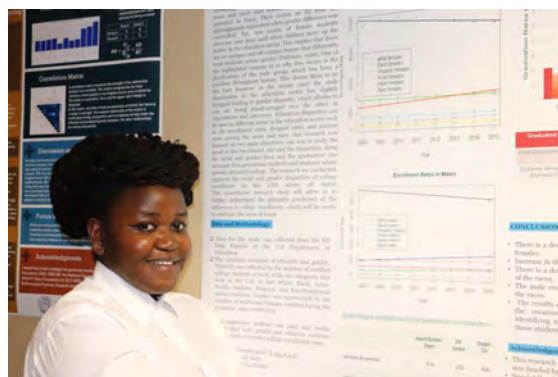


Edray Goins (left) presenting awards to Sofia Martinez Alberga, Paige Helms, and Damien Burks

Students also had the opportunity to present posters outlining their research. The Poster Session took place Saturday afternoon from 3:30 PM - 5:00 PM. There were thirteen posters in this session:

- Mikaili Abdullah (Morehouse College) and DaL-isa Nanelle Denham (Virginia State University) presented on *Chemovirotherapy*
- Lyric Bell (Spelman College) and Bhikhari Tharu (Spelman College) presented on *Statistical Modeling of AIDS Diagnosis of the USA by Ages*
- Cahron Cross (Prairie State College) presented *Jointly Ranked Prime-Reciprocal Sums and Natural Logarithms*
- Joel Goddot, III (Virginia State University) and Jasper Short, III (Virginia State University) presented on *Uniform stabilization of a non-linear fluid-structure interaction model to a non-trivial equilibrium*
- Samuel Hood (Morehouse College) presented on *Tanh Activations in Image Classification*
- Stephanie Obwar (Spelman College) and Bhikhari Tharu (Spelman College) presented on *Disparities in College Enrollment in the USA by Gender and Race*
- Kessiena Ofunrein (Hampton University) presented *Statistical Analysis and Geographical Clustering of Los Angeles County Arrests*

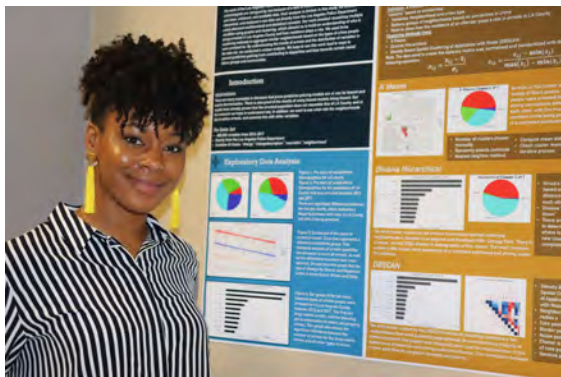
- Chanae Ottley (Florida A&M University) presented on *Using Social Media to Aid in Park Management*
- Marqus Parker (North Carolina A&T State University) presented on *Multi-Constellational Global Navigation Satellite Systems (GNSS) RINEX Parser*
- Catherine Rono (Spelman College) and Bhikhari Tharu (Spelman College) presented on *Disproportional College Enrollment in the USA by Race and Gender*
- Joshua Sparks (Morehouse College) presented on *Broken Mirrors: Exploring the Fragmentation of Identity in Mathematics Education Research*
- Lydia Wheatfall (Virginia State University) presented on *Blueberries: Finding the antioxidant with near infrared spectroscopy*
- Mack Williams (Xavier University of Louisiana) presented on *Exploring Essential Transcription Factor Genes In Lymphoma Cell Lines to Understand Oncogene Enhancer Regulation*



Catherine Rono

There was also a friendly competition for the most outstanding poster presentation. Undergraduates Mikaili Abdullah (Morehouse College), Joel Goddot, III (Virginia State University), and Marqus Parker (North Carolina A&T State University) each received book prizes from the American Mathematical Society for Outstanding Poster Presentations. Judges who assisted with these prizes were faculty members Shinemin Lin (Savannah State University), Phyllis Okwan (Southern University, Baton Rouge), Kenuatra Smith (Southern University, Baton Rouge), and Lila Ghemri (Texas Southern University).





Kessiena Ofunrein



The 2018 J. Ernest Wilkins Lecture was given on Friday, September 28, 2018 by Michelle Craddock Guinn, Associate Professor of Mathematics at Belmont University. Her talk was titled *Enhancing Imagery Techniques*. The presentation was following by a reception sponsored by the Education and Diversity Department of the American Mathematical Society (AMS).



Robert Bozeman (left) and Duane Cooper

Other Activities

There were several panel discussions:

- *The Next Step: REUs and Internships* featured Duane Cooper (Morehouse College), Leona Harris (University of District of Columbia), and Monica Jackson (American University)
- *Applying to Graduate School* featured FranChell Davidson (Texas Southern University), Lydia Wheatfall (Virginia State University), Dwight Williams (University of Texas at Arlington), and Derek Young (Iowa State University)
- *Math Institutes Town Hall* was a gathering for the faculty who attended MATHFest; it was run by Ulrica Wilson (Morehouse College / ICERM)

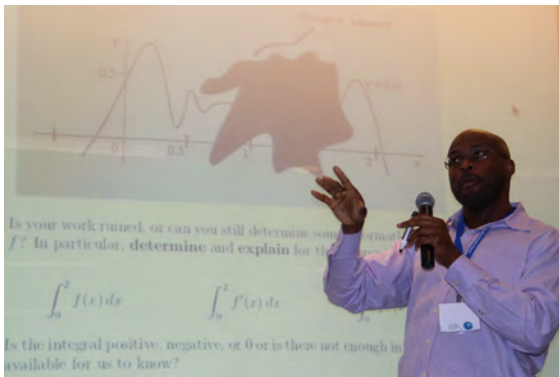


Monica Jackson (left), Duane Cooper, and Leona Harris

Throughout the conference, students were presented challenge problems through sessions called *Problem Time with Dr. Cooper*. Students with correct solutions were presented book prizes from the American Mathematical Society. Universities had an opportunity to showcase their graduate programs and interact with undergraduate students in a two-hour fair. The Graduate Fair took place Saturday afternoon from 3:30 PM - 5:00 PM.



Duane Cooper (left) for “Problem Time”



Student Presenting Solution for “Problem Time”



Sylvia Bozeman (left), Nagambal Shah, and Monica Stephens

Edray Herber Goins is the President of NAM. He can be reached at president@nam-math.org. □



NAM Undergraduate MATHFest XXVIII Group Photo (courtesy of Karen Lamassonne)

A team of graduate student researchers from Teachers College, Columbia University conducted short interviews (between 5 - 10 minutes) with NAM members about their experiences with NAM and mathematics in general. We’d like to thank everyone who participated - 30 folks so far! If you’d like to be interviewed, it’s not too late - these stories will be used to help update the Mathematicians of the African Diaspora website and to produce a podcast on the history and impact of NAM. Please email Dr. Erica Walker ewalker@tc.edu if you would like to participate, and a member of the production team will get in touch with you to set up an interview by phone or videoconference.



Returning to Research: A Personal Journey Through REUF

by Jamylle Laurice Carter

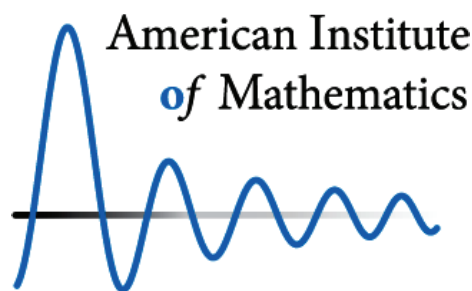
When Ulrica Wilson (Morehouse College/ICERM) asked me to apply for the Research Experiences for Undergraduate Faculty (REUF) workshop in July 2016 at the American Institute of Mathematics (AIM) in San Jose, California, I figured, “What the heck? Why not?” I scrapped my potential plans for the week because I knew that it would be a great career opportunity. Plus, Wilson and I had been friends for nearly two decades. Years ago she had encouraged me to run for the position of Community College Member on the NAM Board of Directors, so I figured that she wouldn't steer me wrong this time. I had no idea how powerful this opportunity would be.



REUF is a program for undergraduate faculty who are interested in mentoring undergraduate research. As stated on the REUF website, “The goals of REUF are:

- To provide faculty participants with a research experience investigating open questions in the mathematical sciences
- To equip participants to engage in research with undergraduate students at their home institutions
- To foster long-term research collaborations among some of the faculty participants

- To establish a network of faculty at primarily undergraduate institutions together with faculty at research universities who support collaboration and undergraduate research”



My personal goal was to reintroduce myself to research-level mathematics. I am a professor of mathematics at Diablo Valley College (DVC), a two-year publicly supported community college in the Contra Costa Community College District in the San Francisco Bay Area in California. At DVC research is optional, not mandatory, for tenure. While I was gladly pursuing my interests in education, I was missing my community of research mathematicians from graduate school and from my postdoctoral fellowships.

After I was accepted into the REUF program, I learned that one of the three workshop research leaders was from Purdue University, which (at the time) was the home institution of NAM President Edray Goins. Goins encouraged me to work with his friend and colleague Mark Daniel Ward, who is now a professor of statistics and (by courtesy) of mathematics.

My REUF team of undergraduate faculty included Bret Benesh (College of Saint Benedict and Saint John's University), Deidra Coleman (Wofford College), and Jennifer Travis (Lone Star College - North Harris). Ward introduced us to subtraction games, a topic in impartial combinatorial game theory. We spent some time learning from Part I of Thomas S. Ferguson's book *Game Theory*, which is freely available online: https://www.math.ucla.edu/~tom/Game_Theory/Contents.html



In a subtraction game, two players remove chips from a pile, according to a pre-defined set of rules. For instance, if the allowed subtraction set is $\{2, 4, 7\}$, then a player is allowed to remove either 2, 4, or 7 chips on the players turn. Eventually the number of available chips is too small to make a move; for instance, if 0 or 1 chips remain, the current player is stuck.

For every possible pile size, we assign a Nim value. These Nim values are defined recursively, and we will not get into that here. Combinatorial game theorists know that if the subtraction set is finite, then no matter how many chips are left, the analogous Nim values will always (eventually) start to repeat. We want to investigate questions such as: How long will it take before the repeating part of the pattern begins? How long is the period of repetition?

Our research team has been investigating these questions since summer 2016. We are classifying the period lengths of Nim values in subtraction games with a subtraction set of size three.

Our REUF team continues to work so well together that we meet (almost) every week by video conference. Ward also added more team members from Purdue University to help us visualize the data: undergraduates Jack Good and Michael Smith, and Senior Academic IT Specialist Doug Crabill.

Amazingly, we have been able to predict the lengths of the repeating patterns without using the traditional recursive strategy of rendering the pat-

terns! We have taken a data-driven approach. We have rendered 72 PB of data, and stored 6 Terabytes of this data. We generated all the lengths of the repeating Nim values for all triples $\{x, y, z\}$ with $x < y < z \leq 16,384$. In other words, we analyzed 732,873,539,584 triples. This is even more remarkable when we point out that each such triple has an entire sequence of Nim values that we had to calculate.

Our team has gathered at various places and with various subsets of the members several times since our initial 2016 gathering at AIM. We have hosted meetings at Purdue University and at Wofford College, as well as a second meeting at AIM in 2017 (as a follow-up to our 2016 REUF program).

This REUF program has reminded me how it feels to struggle with mathematics, to keep asking questions that may have been answered a year (or more) ago, and to show up even when I feel overwhelmed with teaching and service and unprepared for research. Ward and my colleagues have welcomed and patiently answered all questions. The atmosphere is always one of “You don’t understand? **Let’s** figure it out. instead of “You dont understand? **You** figure it out. We have created an inclusive space for discovery, mistakes, laughter, and insight.

I am delighted to have a second chance with research-level mathematics, and (more important) an expanded community of open, kind, diligent, generous, and brilliant mathematicians. I feel fortunate to have established such a positive connection, and I look forward to our mathematical futures together.

***Jamylle Laurice Carter** is a professor of mathematics at Diablo Valley Community College and NAM’s community college representative. She can be reached at community-member@nam-math.org. □*



Workshop

■ JUNE 17-21, 2019

Research Experiences for Undergraduate Faculty (REUF) at ICERM

Organizing Committee:

Brianna Donaldson, American Institute of Mathematics (AIM)

Leslie Hogben, American Institute of Mathematics (AIM) & Iowa State U

Ulrica Wilson, Institute for Computational and Experimental Research
in Mathematics (ICERM) & Morehouse College



This workshop, a formal collaboration between ICERM and the American Institute of Mathematics (AIM), is one in a series of annual REUF workshops. These workshops bring together leading research mathematicians and faculty based at primarily undergraduate institutions to investigate open questions in the mathematical sciences and to equip

participants with tools to engage in research with undergraduate students. REUF also serves to jump-start faculty who want to re-engage in research or who are considering a change in their research area.

The goals of this workshop are to promote undergraduate research and to forge research collaborations among the participating faculty. The majority of the workshop will be spent working on problems in small research groups, reporting on progress, and formulating plans for future work. Note that there are opportunities for participants to continue research activities beyond the workshop week, which will be discussed during the workshop.

Preference will be given to faculty who teach or mentor substantial numbers of minority students underrepresented in mathematics, students with disabilities, or first-generation students.

Full details can be found at: <https://icerm.brown.edu/events/reuf2019/>



Participation

REUF workshops are aimed at tenure track faculty at primarily undergraduate institutions. To request an invitation to a REUF workshop, please complete an online application. Support for local expenses may be provided. Decisions about online applications are typically made 1–3 months before the workshop, as space and funding permits. ICERM encourages women and members of underrepresented minorities to apply. More information and an application form are available on our website.

About ICERM

The Institute for Computational and Experimental Research in Mathematics (ICERM) is a National Science Foundation Mathematics Institute at Brown University in Providence, RI. Its mission is to broaden the relationship between mathematics and computation: specifically, to expand the use of computational and experimental methods in mathematics, to support theoretical advances related to computation, and address problems posed by the existence and use of the computer through mathematical tools, research and innovation.

ICERM

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Providence, RI 02903
401-863-5030
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An Existence Proof: Mathematicians of the African Diaspora Website, Part II

by Erica Walker, Scott Williams, and Robin Wilson

(Part I appeared in the Winter issue of the NAM newsletter)

REFLECTIONS,

Scott Williams



Over thirty years ago, in 1997, I began the website Mathematicians of the African Diaspora or MAD. As a child I was struck by the emphasis, within the general American culture, upon achievements in the Sports/Entertainment Industry as indications of success. Within the African American subculture, those indications are even stronger - just consider the winners of the NAACP Image Awards among other celebrations. On the rare occasion a scientist has won an award, there has been a limitation to the medical field. In addition, where it concerns successes in mathematics and the sciences, I discovered much incorrect or misconstrued information available in texts and especially on the web.

The impetus for creating MAD was a desire to suggest modern Mathematicians and Scientists as images of success to present to the African American community. My steadfast personal view over the years has been *thinking precisely has more class than looking good*. As mathematicians' interest often vary, I added both Computer Science and Physics to the web site before those fields began their own projects of this nature. For some years I also provided a location for data on The African National Congress.

My qualifications include 7 years in the segregated Baltimore public schools (5 more as a guinea pig in 'desegregated' schools), 4 years of excellent undergraduate mathematics training with research

orientation at a historically Black College, 4 years of graduate training with research orientation, numerous Master's Degree students (at Pennsylvania State University, Ohio University, and the University of Buffalo), four Ph.D. students, four decades as a research mathematician with interests in Topology, Logic and Dynamics, an American mathematicians group and member (1997) of the Council of the African American Researchers in the Mathematical Sciences, a personal library of thousands of books by Africans and African Americans, and an interest in history.

What problems did I encounter other than debts to my personal time?

- At a time when web space was measured in kilobytes and megabytes, my department (SUNY at Buffalo) opened gigabytes for my web space use in this project, yet I was unable to obtain financial resources, inside or outside the university, to aid my efforts. During the 2006 Black History Month, MAD received four hundred thousand visitors and nearly ten thousand emails.
- I am thankful that my department chairs agreed to provide legal help in the project. I received a number of legal threats from individuals who did not wish to be known as African American Mathematicians, and from individuals who deemed the project as racist. Positive acknowledgements have been received from The Chronicle of Higher Education, The New York Times, USA Today and Science Magazine to name a few; however, I must thank the more than twenty million visitors to the website, it is they that have exhibited its worth.

Scott W. Williams
Mathematics Professor Emeritus
The University at Buffalo, SUNY



IMPACT OF THE MAD PAGES,

Erica Walker



I don't recall how I first was introduced to the MAD website, but as a mathematics educator interested in history and historical developments in mathematics, it was crucial to expanding my knowledge base about Black mathematicians. MAD, quite wonderfully, had extensive citations and links to important archival documents, books, articles, and other texts that have been critical to my own work and research as a professor of mathematics education. It was here that one could easily find information about Black mathematicians in the United States and around the world, information that was unfortunately for many years missing from the broader discourse about mathematicians and their work. It was here that one could learn about the role of organizations and institutions in the development of initiatives that increased the participation of African Americans in mathematics. And it was here that I first learned of Thomas Fuller, an important historical figure who has become central to my own research exploring the formative, educational, and professional experiences of mathematicians in the United States. Fuller has served as a central metaphor for the work I do around equity in mathematics education – his life underscores that mathematics talent can often go unrecognized and unrewarded. But for a twist of fate, many more of us would know Thomas Fuller's name in addition to, say, that of Benjamin Banneker. Because Banneker was born free and was literate, we know much of his mathematical experiences and contributions to US history. Fuller died as an enslaved person: indeed, as his obituary posted on the MAD website notes: "Had his opportunity been equal to those of thousands of his fellow men, even a Newton himself should have shamed to acknowledge him a brother in science". In many speeches and talks, I have posed the question to mathematics teachers,

administrators, and researchers alike – "Are there Fullers among us?" – and exhorted them to conduct policy, practice, and research that seeks to focus on excellence, rather than failure, and to work to ensure all students have the opportunity to learn rigorous and meaningful mathematics.

The existence of this website helped to reframe for me and many others the truth of black excellence in mathematics. It made visible people that were in many ways invisible to the canon of mathematical thought and production in the United States and around the world.

MAD's importance as an educational tool must also be acknowledged. It is here that someone can get pleasantly lost exploring intriguing historical developments, as well as learning about the range of areas of mathematics study. For many of the profiles, there were compelling stories told by mathematicians about their early lives, which for me spurred new ideas about how we develop as "mathematical persons". It has spawned research on deeper understanding of the role of family members in mathematicians' development, for example. (So many mathematicians tell stories about uncles and aunts exposing them to mathematics!). It is here where one can see the impact of particular institutions, which over generations demonstrate an admirable capacity to develop, hone, and support mathematicians' talents. And it is here where one can trace the influence of influential mentors and teachers, who direct and affect the careers of their students and their students' students.

Without MAD, it would have been much harder to engage in my major program of research that has emerged over the last decade. It was, for many years until very recently, the only place where one could look up the term "black mathematician" and see that there were numerous people who fit that description. Although we don't have empirical evidence about how many schoolchildren and other students used the website for research of this type, I suspect that it was a substantial number.

With the new MAD website it is my hope that the spirit of MAD lives on – as an important living and breathing space for the documentation of historical and contemporary events that captures the essence of the triumphs and travails of black math-

emicians in the US and around the world. And I hope we are able to capture impressions of who visits the website, and why. As a teaching tool about mathematics, history, the meanings of what it is to be a mathematician, and how to inspire others to participate in the world of mathematics MAD is unparalleled. It has significant interdisciplinary reach – addressing those with interests in history, sociology, policy as well as mathematics. Professor Scott Williams has done a great service for all of us

in mathematics and mathematics education – and beyond – with this incredible resource.

Erica N Walker

Professor of Mathematics Education
Teachers College, Columbia University

Erica Walker and Scott Williams are representatives from the NAM Editorial Board to Discuss Policies on the MAD Pages. Send correspondences to Erica Walker at ewalker@tc.edu. □

Job Openings

Department of Mathematics – Syracuse University The Department of Mathematics, Syracuse University, seeks to fill **one tenure-track position in the area of Analysis at the assistant professor level, beginning August 2019**. Preference will be given to candidates with expertise in Mathematical Material Science/Applied Analysis.

This recruitment is part of an ambitious Invest Syracuse Cluster Hire Initiative in the broad area of Bio-enabled Science and Technology. As an integral part of this investment, Syracuse University will recruit multiple candidates for faculty positions for a research cluster in the focus area of Material Science. Faculty hired in these positions will build on our existing strengths in Non-linear Analysis (<http://math.syr.edu/research/analysis.html>) and will participate in an organized research cluster that spans multiple departments of College of Arts and Sciences and the College of Engineering.

A PhD in a related field is required; PhD in Mathematics is preferred. Post-doc training is also preferred. Candidates should have a record of accomplishment and potential in both research and teaching.

The department seeks candidates whose research, teaching, or service has prepared them to contribute to our commitment to diversity and inclusion.

Applications must be done in two steps: Step 1: Candidates must submit an online faculty application with a CV at <https://www.sujobopps.com> (job # 074291) Step 2: Candidates must submit a cover letter, CV, a research and a teaching statement, three letters of recommendation addressing research qualifications, and at least one letter of recommendation addressing teaching at <http://www.mathjobs.org/jobs>). Screening of candidates begins February 1, 2019 and continues until the position is filled.

Syracuse University is an equal opportunity/affirmative action employer with a strong commitment to equality of opportunity and a diverse work force. Women, military veterans, individuals with disabilities, and members of other traditionally underrepresented groups are encouraged to apply.

Colby College Visiting Assistant Professor of Mathematics

Two visiting assistant professor positions in mathematics, September 1, 2019 – June 30, 2020. We seek outstanding teachers with research interests that closely mesh with those of the continuing mathematics faculty in the department. Candidates must have a Ph.D. in mathematics and must have significant teaching experience as instructors of record. Please see our full ad at

<http://www.colby.edu/mathstats/faculty-searches/> for more information and application instructions. All materials should be submitted online at

<https://www.mathjobs.org/jobs/jobs/13727>. Review of applications will begin on April 1, 2019, and will continue until the position is filled.



Events of Interest to NAM Members

A complete list of events containing these and more can be found online:

<https://www.nam-math.org/upcoming-activities.html>



The **2019 Faculty Conference on Research and Teaching Excellence (FCRTE)** will be held April 26 -27, 2019 at Texas Southern University. Dr. Willie Taylor will give the Bharucha-Reid Lecture and Roderick Holmes is the local organizer. The conference consists of five components: A Short Course in Computational Science, The Albert Turner Bharucha-Reid Lecture, Recognition Banquet, Contributed Talks, and a Regional Panel Discussion.

More information can be found at the web site <https://www.nam-math.org/fcrte.html>.



More information can be found at the web site www.nationalmathfestival.org/2019-festival/.

The **SIAM Conference on Applications of Dynamical Systems (DS19)** will take place on 19-23 May 2019 at the Snowbird Ski and Summer Resort in Snowbird, Utah, USA. Although abstract submissions have passed, pre-registration is open until 22 April. In addition to a scientifically exciting conference and fantastic invited speakers from dynamical systems and its applications, the conference includes a mentoring session and other activities. For more information, go to the conference website at <https://www.siam.org/conferences/CM/Main/ds19>.

2019 MAA-NAM Blackwell Lecture Dr. Johnny Houston, Elizabeth City State University, will give the David Harold Blackwell Lecture at the 2019 MAA MathFest on Friday August 2, 2019 in Cincinnati, OH. His lecture is titled, *Dudeney's No Three-In-Line Problem, Solutions, Progress, and Conjectures*.



April 15-17, 2019 the **American Institute of Mathematics (AIM)** in San Jose, California is organizing a workshop, sponsored by both AIM and the National Science Foundation (NSF) to prepare women and underrepresented minorities for work in academia, industry, and government laboratories. Senior professionals will provide insight on things they wish someone had told them before they left graduate school. The workshop will target mathematicians at various stages of their careers, including graduate students and postdocs. Applications are open to all, and we especially encourage women, underrepresented minorities, junior mathematicians, and researchers from primarily undergraduate institutions to apply. Applications can be found here: <https://aimath.org/cgi-bin/participantapply.prl?workshop=763> . Application review will begin February 1, 2019, apply by February 22, 2019.



EDGE is a comprehensive mentoring program designed to strengthen the ability of women to successfully complete PhD programs and persist in careers in the mathematical sciences.

the
edge
program

Enhancing Diversity in Graduate Education

Are you a woman starting a PhD in the mathematical sciences in the fall? EDGE wants to help you succeed! Our 2019 summer session will be held at Pomona College. Participants in the program receive room, board, travel, and a stipend. Applications and additional information can be found on our website.

edgeforwomen.org



ICERM



Model and dimension reduction in uncertain and dynamic systems

ICERM Semester Program: January 27 - May 1, 2020

Organizing Committee:

- Yanlai Chen**, University of Massachusetts, Dartmouth
- Serkan Gugercin**, Virginia Tech
- Misha Kilmer**, Tufts University
- Yvon Maday**, Université Pierre et Marie Curie
- Shari Moskow**, Drexel University
- Akil Narayan**, University of Utah
- Daniele Venturi**, University of California, Santa Cruz

Program Description:



Today's computational and experimental paradigms feature complex models along with disparate and, frequently, enormous data sets. This necessitates the development of theoretical and computational strategies for efficient and robust numerical algorithms that effectively resolve the important features and characteristics of these complex computational models. The desiderata for resolving the underlying model features is often application-specific and combines mathematical tasks like approximation, prediction, calibration, design, and optimization. Running simulations that fully account for the variability of the complexities of modern scientific models can be infeasible due to the curse of dimensionality, chaotic behavior or dynamics, and/or overwhelming streams of informative data.

This program will integrate diverse fields of mathematical analysis, statistical sciences, data and computer science, and specifically attract researchers working on model order reduction, data-driven model calibration and simplification, computations and approximations in high dimensions, and data-intensive uncertainty quantification. Various workshops will be designed to stimulate interaction between these research areas and establish cross-disciplinary collaboration.



The Institute for Computational and Experimental Research in Mathematics (ICERM) at Brown University:

To learn more about ICERM programs, organizers, program participants, to submit a proposal, or to submit an application, please visit our website: <https://icerm.brown.edu>





What do you love? Whatever your interest, **we've got the math for that.** Film animation? Pro football? Magic? Music? Dating? Dance? Cryptography? Planet Earth? The Data Revolution? Check, check, check. Meet mathematicians eager to share their enthusiasm on these and many other topics!



<http://www.nationalmathfestival.org/2019-festival/>



BEAM

Bridge to Enter Advanced Mathematics

Summer Positions Available!

This summer, *change the lives* of underserved students with exceptional potential in mathematics.



Bridge to Enter Advanced Mathematics is a free program for students from low-income and historically marginalized communities who show exceptional potential in mathematics.



“Teaching at [BEAM] was a great joy, and I highly recommend it as an outreach initiative to get involved in!”

- Dr. Mohamed Omar, Associate Professor, Harvey Mudd College

For Summer 2019, we are hiring:

...college professors and classroom teachers as faculty. Design your own courses on favorite math topics. Teach to small classes of motivated middle schoolers.

...graduate students as junior faculty who design and teach courses with structured support and mentorship.

...college students as student life counselors and teaching assistants.



Dr. Karen Taylor works with a student in her Number Theory class.

For more information and how to apply:

beammath.org/jobs





MAA Project NExT

NEW EXPERIENCES IN TEACHING

Launch the NExT stage of your career

MAA Project NExT (New Experiences in Teaching) is a year-long professional development program for new or recent Ph.D.s in the mathematical sciences. The program is designed to connect new faculty with expert teachers and leaders in the mathematics community and address the three main aspects of an academic career: teaching, research, and service.

Recent program sessions have included:

- getting your research and grant-writing off to a good start,
- innovative teaching and assessment methods and why they work,
- finding your niche in the profession,
- attracting and retaining underrepresented students,
- balancing teaching, research, and service demands,
- starting an undergraduate research program, and
- preparing for tenure.

**Application deadline:
April 15, 2019**

projectnext.maa.org

projectnext@maa.org

MAA Project NExT Fellows join an active community of faculty who have become award-winning teachers, innovators on their campuses, active members of the MAA, and leaders in the profession.

MAA Project NExT welcomes and encourages applications from new and recent PhDs in postdoctoral, tenure-track, and visiting positions. We particularly encourage applicants from underrepresented groups, including women and minorities. Applications for the 2019 cohort of MAA Project NExT Fellows are due on **April 15, 2019** and can be found at **projectnext.maa.org**.



Project NExTers at MAA MathFest in Denver.

ACADEMY OF INQUIRY BASED LEARNING

IBL WORKSHOPS 2019

THE WORKSHOP WEEK

The Inquiry Based Learning Workshops are practical, hands-on, and interactive workshops designed for college math instructors. Throughout the workshop, participants will work with like-minded colleagues, reflect on current teaching practices, and prepare an IBL course!



INCLUSIVITY

Equity, inclusion and greater participation of underrepresented groups in STEM fields are AIBL priorities. Specifically, one of our goals is to eliminate the gender and minority achievement gaps via effective implementation of IBL.

QUOTES FROM STUDENTS

"The most impactful thing... is the idea of productive failure. The idea that you learn more when you don't get things right the first time has been beneficial because I can just relax and try things. I tend to get over worried with just getting the right answered rather than trying to deepen my understanding of concepts so the ability to fail gives me a lot of freedom."

"I learned how to face my problems, not run away from them; although it can be frustrating at times, if I persevere I can solve problems."



2019 WORKSHOPS

June 25-28, 2019: The Paramount Hotel, Portland, OR

July 9-12, 2019: Staybridge Suites, Los Angeles, CA

For more information or to register, please visit www.inquirybasedlearning.org





MATHEMATICS RESEARCH COMMUNITIES

Advancing research. Creating connections.

We welcome applications for 2019!

The Mathematics Research Communities (MRC) program helps early-career mathematicians develop long-lasting cohorts for collaborative research projects in many areas of mathematics.

Apply for funding and attend one of these one-week, collegial, hands-on research conferences held at Whispering Pines Conference Center in West Greenwich, Rhode Island in June 2019.

JUNE 2-8, 2019

Geometric Representation Theory & Equivariant Elliptic Cohomology

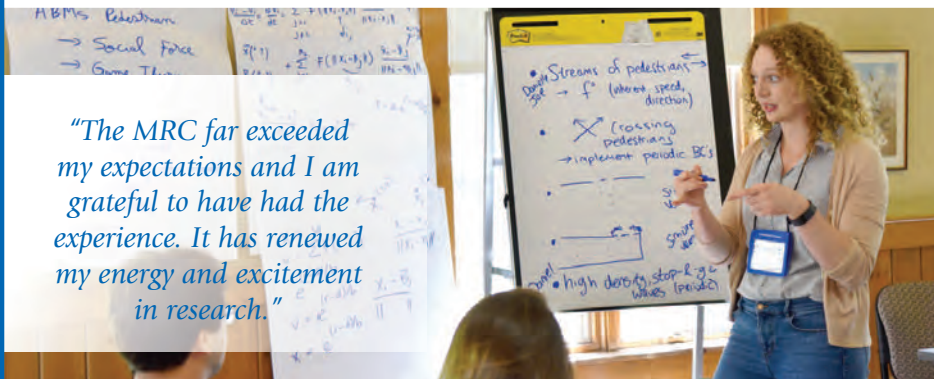
JUNE 9-15, 2019

Stochastic Spatial Models

JUNE 16-22, 2019

Explicit Methods in Arithmetic Geometry in Characteristic p

"The strong sense of community and collegiality was incredibly important. It was an easy group to socialize with, both on personal and professional levels, and felt like an organic way to create long-lasting relationships."



"The MRC far exceeded my expectations and I am grateful to have had the experience. It has renewed my energy and excitement in research."

Learn more at www.ams.org/mrc
Women and underrepresented minorities are especially encouraged to apply.

The MRC program is supported by the AMS and a grant from the National Science Foundation.



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MEMBERSHIP CALENDAR YEAR: JANUARY 1, 2019 to DECEMBER 31, 2019

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 GENERAL DONATION \$ _____
 GOLDEN ANNIVERSARY CAMPAIGN DONATION \$ _____

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Undergraduate MATHfest	\$500,000
Computational Science Institute	\$250,000
Faculty Teaching & Research Institute	\$250,000
Haynes-Granville-Browne Colloquium Presentations by New PhDs	\$125,000
Claytor-Woodard Lecture	\$125,000
Cox-Talbot Address	\$125,000
J. Ernest Wilkins Lecture	\$125,000
Albert T. Bharucha-Reid Lecture	\$125,000
David Blackwell Lecture	\$125,000
Clarence Stephens-Abdulalim Shabazz Teaching Award	\$125,000
Archives	\$125,000

Note: For student, regular individual
 and institutional NAM memberships, go
 to www.nam-math.org.





Preserving the past while endowing for the future!



The National Association of Mathematicians (NAM), Inc. is a non-profit professional organization in the mathematical sciences with membership open to all.

NAM's Mission

- To promote excellence in the mathematical sciences.
- To promote the mathematical development of underrepresented American minorities.

Major Activities by Season!

WINTER: NAM National Meeting at the JMM, Claytor-Woodard Lecture, Haynes-Granville-Browne Colloquium of Presentations by new PhDs, Cox-Talbot Address and Stephens-Shabazz Teaching Award

SPRING: Regional Faculty Conference, Albert T. Bharucha-Reid Lecture

SUMMER: David Blackwell Lecture, Summer Student Computational Science Institute

Fall: Undergraduate MATHFest, J. Ernest Wilkins Lecture

NAM Golden Anniversary Campaign 2018-2019

The National Association of Mathematicians (NAM) will celebrate its **50th Anniversary Year** in 2019. During 2018 and 2019, NAM will conduct a **GOLDEN ANNIVERSARY CAMPAIGN** with the goal of establishing an Endowment Fund of at least **\$2 million** to serve as base support, ensuring vibrant annual programs and activities for many years into the future. During the campaign NAM expects to:

- Increase its membership of Regular, Life, Student, and Institutional Members
- Endow several annual programs, lectures, and other activities
- Solicit increased support from the broader community, including friends, philanthropists, foundations, companies, and other supportive enterprises.

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Undergraduate MATHFest	\$500,000
Computational Sc. Institute	\$250,000
Faculty Teaching & Research Institute	\$250,000
Haynes-Granville-Browne Colloquium Presentations by new PhDs	\$125,000
Claytor-Woodard Lecture	\$125,000
Cox-Talbot Address	\$125,000
Albert T. Bharucha-Reid Lecture	\$125,000
J. Ernest Wilkins Lecture	\$125,000
David Blackwell Lecture	\$125,000
Clarence Stephens-Abdulalim Shabazz Teaching Award	\$125,000
Archives	\$125,000

A gift of \$25,000 or more will partially endow one NAM annual program or activity.

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- Fully or partially endow an annual activity/program
- Encourage others to support the campaign with full/partial endowments
- Give a gift in honor of or in memory of a friend or colleague.
- Include NAM in your estate or future planning.

NAM Newsletter

c/o Dr. Omayra Ortega
Department of Mathematics and Statistics
Sonoma State University
1801 E. Cotati Ave
Rohnert Park CA 94928

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Golden Anniversary 2019



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