National Association of Mathematicians

Newsletter

Volume LI Number 2 Summer 2020

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Embracing New Ways of Being

A snapshot from a recent NAM board meeting, held via Zoom. A scene many of us are becoming incredibly familiar with during this time of shelter-in-place.

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.

NAM's National Office, subscriptions and membership: National Association of Mathematicians, 2870 Peachtree Rd NW #915-8152, Atlanta, GA 30305; e-mail: info@nam-math.org.

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

"Don't you notice that there are particular moments when you are naturally inspired to introspection? Work with them gently, for these are the moments when you can go through a powerful experience, and your whole worldview can change quickly."
- Sogyal Rinpoche.

Hello friends,

First, I would like to welcome a new NAM board member! **Dr. Karen D. Morgan**, from New Jersey City University, is the new **Region B Representative** representing NAM members in the mid-Atlantic states.

Wow, what a year 2020 has shaped up to be! We just passed the halfway mark, but so far 2020 has forced us to reflect on what matters most at home and at work, and try new modalities to meet those needs. Though originally born out of necessity, we may find that we want to continue employing some of these new modalities moving forward. I plan to use Zoom in my SAS lab course to address questions. By sharing our screens with the entire class, we can debug together in real-time. This is one of my "silver linings" from this time.

We have had to connect with students, colleagues, and family-members in new ways. Can we leverage these changes to improve future communication? We can expect new challenges to our established ways of being whether it be through pandemic, climate change, local; institutional; or national regime change. Change is the only constant. Hopefully we emerge from this time of isolation with a new perspective on how to progress forward through difficult times. Let's use this "free" time we have to reflect on how we can collaborate with our communities (however you define them) to build a better world.

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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`. You can find more information at the web page

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

Advertising:

NAM Online Advertisement Policy: As a part of its Newsletter Advertising, a copy of the advertisement will be placed on the web during the period it appears in the quarterly Newsletter - at the Job Openings website.

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1. One issue advertising

A. One-fourth page	$200
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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`.

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.

Revised 11/19

Research Spotlight on Women Faculty: Raegan Higgins

by Texas Tech University Office of Research & Innovation

This article originally appeared in the Texas Tech University website on March 4, 2020.

Photo by Ashley Rodgers, Texas Tech University, Office of Communications & Marketing

Raegan Higgins, Associate Professor, Department of Mathematics & Statistics. Dr. Higgins' current research is in time scales; The calculus of time scales was developed to unify and extend results obtained for differential equations and difference equations. Her interests focus on oscillation criteria for certain linear and nonlinear second order dynamic equations.

What inspired you to work in your field/area of expertise?

I didn't always love math. In my eyes, it was a class that everyone had to take. It wasn't hard nor was it easy; it just was. Upon placing out of Pre-Algebra in middle school, I entered Algebra which quickly became my adversary. With a minimal Pre-Algebra background, I struggled in the course I called "The Land of Unknowns." With a very encouraging no-nonsense teacher Mrs. Scott, I excelled in Algebra and became an aspiring mathematician.

At that time, I had no idea of all the areas of math, nor did I know exactly what a mathematician did. However, the feeling of solving "hard" problems stuck with me — I learned that I could do well at something new.

My area of research is time scales. I was introduced to this area as an undergraduate. It was intriguing because it forced me to think outside of the box. I was not required to work solely on the (real) number line. I could work on any part of it. That was the "something new" and I wanted to learn all about it.

Who inspired you to pursue academia?

After having such a positive experience in Algebra, I wanted to change students' lives like Mrs. Scott changed mine. So, my plan was to be a math teacher. While at Xavier University of Louisiana, my Calculus I professor and research advisor, Dr. Vlajko Kocic, encouraged me to explore my options outside of teaching. He talked to me about graduate school. I had some idea of what graduate school was because my father, who is a retired high school teacher, has a master's degree in Industrial Arts Education. So graduate school was not a new idea; earning a doctorate was. Dr. Kocic told me that I was going to graduate school and I worked to achieve that. At Xavier, several female math majors went to graduate school and did well. So, his suggestion of graduate school seemed reasonable. Honestly, it was the norm, the expectation, the rule, the standard. Call it what you want; most Xavier math majors went to graduate school.

So, my Calculus I professor inspired me to pursue academia. After being one of the best tutors in the mathematics department at Xavier and presenting my research at a few conferences, I knew this career path was for me.

What would you tell your female students interested in pursuing an academic career?

"Go for it!!!!" would be my initial response. Then after some of the excitement has passed, I would encourage her to find multiple female and

male mentors inside and outside her desired field inside and outside her institution. It is important that she has as many perspectives as possible. Of course, her journey will not be the same. However, there is always a lesson to learn from others' experiences.

The undergraduate student needs to connect with graduate students while the graduate students need the wisdom of postdocs and junior faculty. This level of tiered mentoring is necessary because becoming successful and sustaining success are not easy. It is essential to seek out advice from those who have and are successfully navigating the obstacles that will inevitably come their way.

Texas Tech University Office of Research & Innovation *can be reached at* `vpr.communications@ttu.edu`. □

Teaching, Research, and Service...REMOTELY??? The Present and Future of a Virtual Academic Life

by Haydee Lindo and Anisah Nu'man

This article originally appeared in the MAA Math Values Blog on April 28, 2020.

This global pandemic has shaken our lives more than we could have possibly anticipated. Our focus at this time should be our mental and physical health, and the well-being of the people in our lives. As we struggle to understand the full scope of this tragedy and to adjust to what may be a new normal, we are also beginning to realize the many ways in which our work expectations have changed and the many ways in which they will probably stay the same. It is unfortunate that we are not all so well-positioned as to be able to focus solely on our health and families during this time; as academics, at many different types of institutions, we continue to be responsible for teaching, research, and service during the global pandemic and we've had to modify these responsibilities in order to continue our work remotely. All said, we must not only attend to the current crisis but the longer-lasting effects on our profession and professional lives.

Given the WHO and CDC projections of the pandemic, there are already concerns that educational institutions that are typically in-residence may continue to educate remotely for the Fall 2020 semester. For example, Boston University is publicly considering this option. There are many great resources from the MAA, AMS, and elsewhere, about taking face-to-face courses online mid-semester. As we make this transition, suddenly and haphazardly, realize that we are developing modes of educating we may very well need in the future. If we can, we must use this current semester as a time to learn. We should grow our skills and become more versatile, effective, and digitally inclusive educators, even if things go back to "normal" in the coming months.

Teaching well online requires a different type of preparation and the development of a different set of skills than we use to teach in-person courses. Of course, there are people who - tongue in cheek - encourage us not to do a good job during this transition. To be clear, there is absolutely no doubt that

we all want to do right by our students. However, in The Difference Between Emergency Remote Teaching and Online Learning, Hodges et al point to the growing debate and clear distinction between the remote teaching we are implementing now and online learning, properly executed.

"Many active members of the academic community, including some of us, have been hotly debating the terminology in social media, and "emergency remote teaching" has emerged as a common alternative term used by online education researchers and professional practitioners to draw a clear contrast with what many of us know as high-quality online education."

Still, there are legitimate fears that institutions will now downsize their teaching staff, or transition smoothly from thinking of online teaching as an emergency-time accommodation to a normal expectation of the job. Ask yourself, would you be prepared for such an outcome?

In the best of times, we often struggle to maintain a research program while attending to our teaching; now we must add the anxiety of the worldwide health crisis and the added time constraints from needing to teach remotely. As the crisis continues and the scope of economic fallout comes into focus, it is reasonable to expect that institutions may have to implement hiring freezes and restrictions in funding for research and travel. Many have already done so.

How do we continue engaging in research under these new time, economic and physical constraints? Fortunately, there are certain things we already do that are suited to our new circumstances. Nowadays, mathematical research is often conducted with collaborators many miles apart. For POC academics, we have also had some practice maintaining and creating mentorship relationships with mathematicians at distant institutions. We need to take these skills we've been honing and develop them intentionally to prepare us for what our field may look like during and after this global pandemic. We must stay adaptive during times of constant change.

In particular, this requires us to be flexible in how we engage in research. For many of us this is new, so please take what you need and leave the rest. Engaging in research now may look like (1) meeting via online video conferencing platforms such as Zoom, Google Meet, etc; (2) providing more structure to your traditional in-person research meetings that you hadn't initially planned; (3) creating agendas in advance for research meetings; (4) sending recap emails overviewing what was discussed in your research meetings; (5) having students, and yourself, creating research logs to document daily research activity; and (6) having students present poster or oral presentations via online platforms.

In addition to transitioning your personal research program to one that can function remotely, as a discipline we also need to think about how to virtual move conferences. We have been amazed by how quickly conferences, such as the Special Session on commutative algebra at the Spring 2020 AMS sectional and the Western Algebraic Geometry Symposium (WAGS), have pivoted to online virtual conferencing. In addition, both American University's Summer Program in Research and Learning (SPIRAL) and Purdue University's Undergraduate Research Conference will be held virtually, to continue to provide students with valuable opportunities to perform and present their research. New modalities are also emerging. For example, David Eisenbud is starting a weekly national virtual seminar for commutative algebra, using Zoom, hosted at MSRI. Find new ways to contribute and participate in your field during this time of upheaval. In, Ten Simple Rules for Organizing a Virtual Conference-Anywhere, Gichora et al provide great tips for planning and organizing a virtual conference.

With this blog post, we have tried to provide a number of resources and tips during this transition. But we recognize there is no complete guide book on what to do as we scramble to gain our footing in our new circumstances. All we can say is simply do what works best for you and, when able, take time to plan and adjust to our possible futures. Since our primary focus at the moment should be our mental and physical health, we hope you'll check out next month's blog post on Mental Health Within the Black Mathematical Community.

Haydee Lindo *is an Assistant Professor of Mathematics at Williams College and* ***Anisah***

Nu'man *is an Assistant Professor of Mathematics at Spelman College. Both women serve on the NAM Editorial Board for the MAA Math Values Blog. They can be reached at* `hlindo@gmail.com`. □

Member Feature: Dr. Suzanne Weekes

by Omayra Ortega & Suzanne Weekes

The NAM Newsletter had the pleasure of interviewing Dr. Suzanne Weekes, Professor, Mathematical Sciences and interim Associate Dean of Undergraduate Studies at Worcester Polytechnic Institute. `http://www.wpi.edu/~sweekes`

Q: How did you first hear about NAM and become a member of this organization?

I came to know about NAM just by being part of the mathematics community and from attending the Joint Mathematics Meetings.

Q: You have many official roles within professional societies, can you share the types of service you do for the mathematics community.

I am honored to serve as a a member of both the SIAM Council and the SIAM Science Policy Committee. Additionally, I am the Chair of the SIAM Education Committee. I also serve on the AMS Science Policy Committee and the AMS Committee on the Profession. I also serve on the Executive Committee of the Association for Women in Mathematics.

Q: What is your most favorite aspect of your field of expertise?

I received my PhD in Mathematics and Scientific Computing from the University of Michigan and my work has been in math and numerical methods applied to real problems such as fluid flow, oil recovery, composite materials, and cancer modelling – numerical methods, hyperbolic PDEs, – modelling in general. I like to feel some connection to a tangible product and not do just purely theory and this is also why a lot of my effort is in academia/industry collaborations and connections.

It is important for us in academia to know how the mathematical sciences are used in business and industry and what the needs and opportunities are for people like us with analytical and quantitative skills and for people who care about and pay attention to the details. The work that I do in this realm includes having been the PI of the NSF-funded REU Program in Industrial Mathematics and Statistics which is still running (though not this summer due to the pandemic), the director of the Center for Industrial Mathematics and Statistics at WPI, and as co-founder and co-director of the PIC Math program.

Q: Do you have any recent publications or projects that you are excited about?

Wow. There are so many. I am now Associate Dean of Undergraduate Studies at WPI and in this role I am part of the academic leadership team of the university. I have a focus on university-wide undergraduate research, not just mathematics. Take a look at the WPI Virtual Undergraduate Research Showcase to see some of the work that our WPI students do each year.

I continue to co-direct the MAA PIC Math Program (Preparation for Industrial Careers in Mathematical Sciences) which works with mathematics faculty from around the country to increase their

awareness of and experience with mathematics outside academia. We teach faculty how to make connections to the private and public sectors in order to better ready their math students for industrial careers. This includes faculty running a semester-long course in which students work with industry professionals on a research problem coming directly from industry. I am also on the Steering Committee of the BIG Math Network which is an information source for mathematical scientists seeking jobs in business, industry, and government (BIG) and is a resource to prepare students for employment.

I am a founding co-director of MSRI-UP and this undergraduate research program will be running virtually this summer under the lead directorship of Prof. Duane Cooper and research leadership of Prof. Edray Goins – I'm psyched to hear how this goes. I am scheduled to lead the 2021 cohort. Also, earlier this year, I was invited to join the Governing Board of Transforming Post-Secondary Education in Mathematics (TPSE Math) so this is also something new for me.

Q: Who or what inspired you to pursue academia?

I remember being a child in Trinidad and asking my father what a PhD was and him saying that in order to get a PhD you had to do research. I interpreted that as spending tons of time in the library copying things down – wrong! - but that is when the plan of getting a PhD got put into my head. With regards to my profession as a university professor, for many of us, that was a ball that just kept rolling along although, unlike any of my colleagues in grad school, I did do an internship. I worked at the IBM TJ Watson Research Labs in NY after my second year of graduate school, had worked at IBM in Trinidad and at an insurance company as an undergrad, and so I had a good awareness of job options outside of academia. I enjoy being in higher ed and being an educator, research advisor and mentor, and working with smart, interesting people in so many disciplines.

Q: Congrats on your recent Haimo award! Could you share some of your recent awards. Many I have heard about, but I know that I am not aware of them all.

I am the recipient of the 2019 Humphreys Award for Mentoring from the Association for Women in Mathematics. I am also a recipient of a 2020 Haimo Award for Distinguished College or University Teaching of Mathematics from the Mathematical Association of American (MAA). In 2015, I was the recipient of the WPI Denise Nicoletti Trustees' Award for Service to Community. I am the first African-American to become a full professor at WPI.

Q: Wow! That is an amazing list! If you exeprienced any barriers to your illustrious career, can you share them with us?

There were certainly times when I felt that I was not doing as well as everybody else and I think that we all go through this. It is important to have colleagues and mentors that help you to see the picture from a different vantage point or from within a different frame of reference. Their perspectives and feedback are not necessarily going to be "Oh no, you are doing quite well!" but it could be "Yes, I see what the challenge is and this is why and here is how things might go better."

My father taught me that people may have lower expectations for me as a black woman and might think that I would be quite content with mediocre grades so I knew that I had to be mindful and advocate for myself. That said, I was fortunate to not have too many people around me who expected me to not do well and, instead, I have people that I can identify as being my champions. It is important to say positive and encouraging things to your students, along with the other feedback, and to indeed be a mentor to them and their promoters.

What is very, very important, though, is to not feel that there is really only one proper path for you to follow in order to measure yourself as "successful". The thing is that your life is your own and, while there may be some constraints to get to where you may want to go, you may have your unique way to get there. And, of course, you are free to modify your goal or even modify the game. It's a bit of a new take on "Don't hate the player, hate the game" as we do know that sometimes the game is not set up for all of us to get a fair chance of winning. For me, I am an applied and computational mathematician and a person who likes having a connection to engineering, the sciences, and to industry. That was not

the traditional paradigm for when I was in school but in all my big choices, I see that I picked options that were true to what drives me and I have let go those that have not.

Q: What would you tell students interested in pursuing an academic career?

Go for it and be broadminded in your search. Know the different flavours of academic institutions and jobs, and know yourself and your interests. Also, do not let the academic job search define you as successful or not. Take a look at the market and take your job search as seriously for an academic job as you would for any other type of job. Take advantage of programs such as WPI's STEM Faculty Launch, CaMeW and other such programs designed to help prepare grad students and post-docs for academic careers.

Q: Any advice on how to persist and excel during this unprecedented time of shelter-in-place and remote learning?

For me, it helps to remember that the challenges that we are having and the state that we are in are not local to my family, to my neighbourhood, my university, or my region and that we are going through it all together. Having work to do and short-term goals are what help keep me on track – psychologically, emotionally, etc. The spaces where there are not back-to-back meetings and urgent deadlines and where I start thinking too existentially can throw things off kilter. The light is shining on inequity in our systems and the light is shining on the importance of good research and the need for solid science policy. I hope that we keep the spotlight on this and that things can be fixed.

But, in your question is the word that we must emphasize - "persist". We are all going through the same shock event but each household and each person is having a very different experience and for some the shock wave impact is tremendous. I don't know what to say but the almost vapid-sounding remark that we will each have to figure out our way to make it through. We have to encourage our students to persist with their dreams and goals and, even if things are remote or deferred, support and encourage them so that they do not let go entirely.

Omayra Ortega *is an Assistant Professor of Mathematics & Statistics at Sonoma State University. She can be reached at* `editor@nam-math.org`. □

When Strong Mentoring Relationships Are Missing From The Equation, Can Women Maximize Success In The Academy?

by Leona Harris

This article originally appeared in the MAA Math Values Blog on March 10, 2020.

In 2010, the American Association of University Women (AAUW) published a report indicating that there are clear gender disparities that continue to persist in the STEM educational and professional pipelines. The report, "Why So Few? Women in Science, Technology, Engineering, and Mathematics (STEM)," outlined eight key research findings that "provide evidence that social and environmental factors contribute to the underrepresentation of women in science and engineering." Some of the barriers to success and advancement for women in STEM professions (including college and university faculty) highlighted in the report include stereotypes, gender bias, societal beliefs, implicit bias, and workplace bias/climate.

In 2016, women only held 17% of the tenured and tenure-track faculty positions and 11% of the full professor positions in PhD-granting mathematics departments, according to the Annual Survey for the Mathematical Sciences

in the US. So why are the numbers still so grim? Why do so many women continue to fall out of the STEM pipeline? What can women faculty do individually and collectively to change the culture for themselves and others?

These are all questions that I have been pondering for some time while reflecting on my own career trajectory and the life stories of some dynamic women in the academy that I happen to know. When we get together or have individual/group discussions about recent achievements, current projects, career progression, and future goals, after the celebratory recaps of our successes, we ultimately end up sharing stories of professional obstacles that appear to have similar themes to what's been found in the literature.

Studies have shown that some of the common barriers that limit career progression for women faculty in STEM disciplines include

- A lack of work-life balance;
- Isolation and/or lack of camaraderie;
- A lack of departmental and/or institutional support;
- A lack of professional development and leadership opportunities;
- A lack of mentoring or sponsorship;
- Less than ideal or hostile work environments; and
- Burn-out.

Why these barriers continue to exist for women in the academy, is a conversation for another day. But many of us, women in the academy, can attest to the fact that during the course of our careers, we have been faced with one or more of these barriers. I would argue that without having good mentorship relationships throughout the progression of one's academic career, these experiences/obstacles could be almost impossible to overcome. While there is always a need for institutional support structures to be put in place by administrators to address any systemic barriers for women faculty that have been identified, we can shift the focus to what we can do as individuals to counteract any of these obstacles that we might face.

I think that it is important for us to realize that individual success is best achieved when one has a network of supporters who are invested in our success. In addition, one piece of advice that I was given early in my career still rings true: You must always be your own advocate! Most people think of self-advocacy as speaking up for oneself, but it also involves knowing who you are and what you need, and how to get those needs met. In this context, I believe that the best way for us to be strong advocates for ourselves is to have a well-defined plan for success independent of and quite possibly in the midst of the common barriers we might encounter along the way. This involves developing and implementing S.M.A.R.T. goals (Specific, Measurable, Achievable, Relevant, Time-bound goals) that clearly articulate our plans for successful career progression; identifying and soliciting the supports and opportunities that we'll need to achieve those goals; and creating an actionable plan for seeking advisement, mentorship, collaboration, and/or sponsorship during critical transition points.

Strong mentoring relationships can change your life. I can attest to this from my own life experiences. I believe that mentorship is absolutely imperative for career progression. They can be the driving force to help you deal with obstacles head-on and are essential when your journey requires you to change course. Mentorship relationships not only affect the mentee and mentor, but they can have profound effects on organizational culture and climate. Some col-

leges and universities are beginning to answer the call and are exploring the best practices for systematically increasing faculty diversity and faculty success through formal mentorship programs (A list of some of the programs can be found here.). In addition, some schools and organizations have developed guides that outline the best practices for developing strong mentorship relationships. In their extensive mentoring guide, Columbia University explores research findings on effective mentoring strategies including the benefits of different mentoring models (traditional, peer, near-peer, group, network, and sponsorship) and the qualities of effective mentors and responsible mentees.

The mentoring guide breaks down the various mentor roles into two categories:

(1) A mentor with technical or instrumental career functions is

- An advisor for overall professional goals and career choices;
- An advisor for development of academic scholarship;
- A facilitator of professional networking within and outside of the institution;
- Sponsor who provides specific strategic opportunities with career relevance; and/or
- Advisor for the development of teaching skills.

(2) A mentor with psychosocial or expressive career functions is

- A promoter of scholarly values and professional integrity;
- An advocate;
- A role model;
- A coach;
- An intellectual challenger;
- A colleague; and/or
- A supporter.

When you begin to explore the list of the different roles that you may need a mentor to take on in your own academic career, it becomes abundantly clear that it is difficult to find all of these attributes in one person. You will need different mentors for different reasons and as you progress through your career the types and numbers of mentors that you'll need in order to maximize success will change over time. When we think of the mentor/mentee relationship, many of us still think of the traditional "hierarchical" model with a "senior" mentor and a "junior" mentee. However, evidence is increasing that peer and near-peer mentoring models, group-based mentoring models, and network-based mentoring models are extremely beneficial for women in the academy. These models have been shown to increase feelings of "belonging" and "fit", thereby decreasing feelings of "isolation" and inducing feelings of empowerment. The Enhancing Diversity in Graduate Education (EDGE) Program is an excellent example of a successful program for women in the mathematical sciences that has each of the mentoring models uniquely woven into the structure of the program.

In her article, "When It Comes to Mentoring, the More the Merrier" Kerry Ann Rockquemore, Founder at National Center for Faculty Development & Diversity (NCFDD), gives pointers for faculty who are "not getting the information, resources, access, connections, sponsorship, and encouragement" they need to be successful in their academic careers. She stresses that we should shift from the "guru-based" mentoring model of searching for an "all-knowing" mentor to building a broad and deep network of mentors/advisors/sponsors who can assist with our various needs. And, she shares a Mentoring Map that faculty can use to assess the areas where they need assistance, determine what mentors they already have to help in certain areas, and identify the areas where they need new mentors to fill the gaps.

I started this article with the question "When Strong Mentoring Relationships are Missing from the Equation, Can Women Maximize Success in the Academy?" I believe the answer is no and I really wanted this to be a call to action for each person reading this: each of us can build a strong network

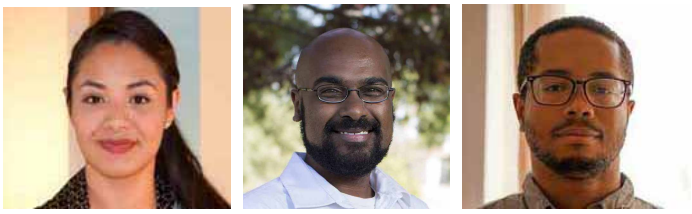
of mentorship relationships of our own to maximize our opportunities for success, and we can also be willing to be a part of someone else's network. I believe that the network-based mentoring model has the ability to transform the academy. I'm in. What about you?

Leona Harris *is an Associate Professor of Mathematics at the University of the District of Columbia, serves on the NAM Editorial Board for the MAA Math Values Blog, and is the Executive Director of the National Association of Mathematicians. She can be reached at* `executive-director@nam-math.org`. □

Introducing the 2020 Class of Karen EDGE Fellows

by Rhonda Hughes

The EDGE Foundation is delighted to announce the 2020 Inaugural Class of Karen EDGE Fellows. The Karen EDGE Fellowship Program was established with a generous gift from Karen Uhlenbeck on the occasion of her 2019 Abel Prize. The Fellowships are designed to support and enhance the research programs and collaborations of mid-career mathematicians who are members of an underrepresented minority group. The 2020 Fellows were selected on the basis of their excellent research pro grams and their plans to use the funds for enhancing those programs through collaboration and travel. The Karen EDGE Fellows for 2020 are Pamela E. Harris, Williams College; Mohamed Omar, Harvey Mudd College; and Bobby Wilson, University of Washington.



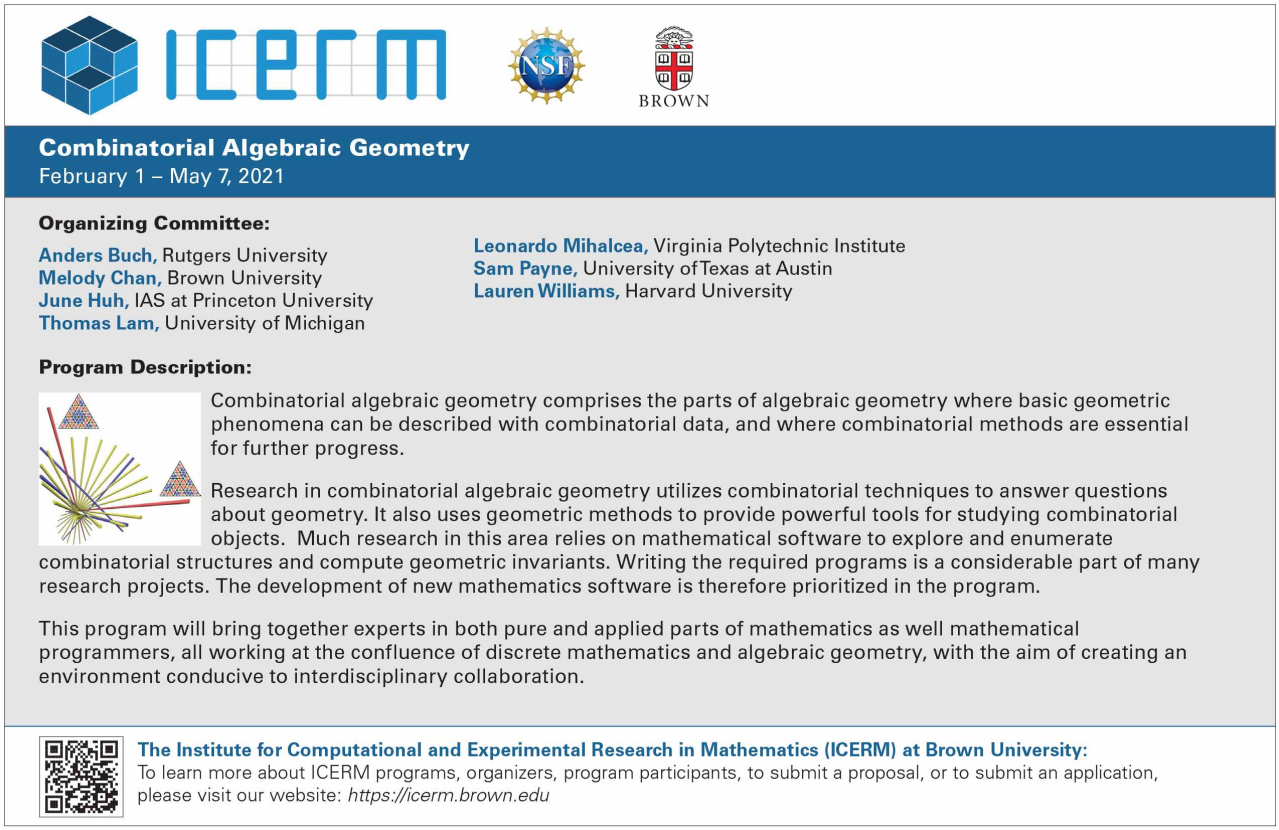
Drs. Pamela Harris, Mohamed Omar, and Bobby Wilson

Pamela Harris received her Ph.D. in Mathematics from the University of Wisconsin Milwaukee in 2012. Since 2016 she has been an Assistant Professor of Mathematics at Williams College. Pamela's research lies in the area of algebraic combinatorics; it exploits a symbiotic relationship between algebra and combinatorics.

Mohamed Omar is an Associate Professor at Harvey Mudd College. He received his Ph.D. from the University of California, Davis. Mohamed's research employs sophisticated mathematical techniques to study foundational questions about networks, including questions about the structure of social networks, abstract networks, and fundamental questions about networks in neuroscience.

Bobby Wilson is an Assistant Professor at the University of Washington. He obtained his Ph.D. at the University of Chicago under the supervision of Professor Wilhelm Schlag. Bobby has been primarily concerned with questions concerning structure theory of measures and the dynamics of dispersive evolutionary equations.

Rhonda Hughes *is the Helen Herrmann Professor Emeritus of Mathematics at Bryn Mawr College and is one of the co-founders of the EDGE program for Women. She can be reached at* `rhughes@brynmawr.edu`. □



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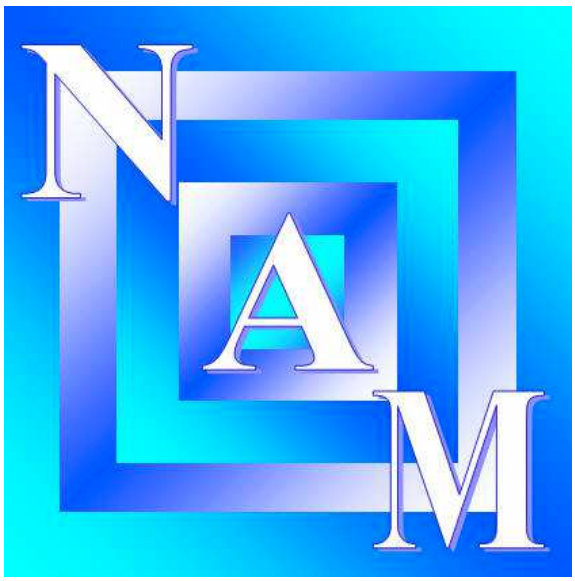

Summer 2020