Fall 2019 Newsletter

Fall Section Meeting at Norfolk State University

The Fall 2019 Meeting of the MD-DC-VA section of the MAA will be held at Norfolk State University on November 8-9, 2019.

Friday: On Friday, the Maryland-DC-Virginia IBL Consortium will run a workshop entitled Building on Strengths, and Building our Community of Inquiry-Based Learning and Teaching. David Clark of Randolph-Macon College will give the banquet address, Samurai, Kissing Circles, and the Geometry of Shinto Shrines.

Saturday: The morning address, Mathematics, Mesh Generation, and 3D Graphics on the Web, and Finding a Career at the National Institute of Standards and Technology, will be given by Bonita Saunders of NIST. The Saturday afternoon address, The Untwisting Number of a Knot, will be given by Kenan Ince of Westminster College.

See pages 4 and 5 for more information.

UPCOMING MEETINGS

- Joint Mathematics Meetings
  January 15-18, 2020 in Denver, CO

- MD-DC-VA Section Spring Meeting
  April 24—25, 2020 at Salisbury University

- MAA MathFest
  July 29—August 1, 2020 in Philadelphia, PA
SECTION REPRESENTATIVE’S REPORT

With a little apprehension and lots of excitement I began my first year of a three-year term as our Section’s Representative to Congress at MAA MathFest in Cincinnati, Ohio this summer. Part of my apprehension comes from the realization that the MAA is in the midst of a dramatic transformation that will culminate in 2022 with MAA MathFest officially becoming the national meeting of the Mathematical Association of America. As a result, the MAA will have a much reduced presence at the Joint Mathematics Meetings after 2021, no longer co-sponsoring the meetings with the American Mathematical Society (AMS). However, certain joint activities may continue, such as the Gerald and Judith Porter Public lecture, Hrabowski-Gates-Tapia-McBay lecture, and the JPBM Communications Award.

In the October/November 2018 edition of MAA Focus, Deanna Haunsperger, MAA past president, and Michael Pearson, MAA executive director, discuss the change. They note that MAA MathFest has doubled in size over the past 20 years. The changes will encourage its continued growth and free up resources to support MAA Sections and programs that have a more immediate impact on our members and the broader mathematical sciences community.

The changes also acknowledge the fact that most MAA members do not attend MAA MathFest or the Joint Mathematics Meetings. Of course, currently they may not attend Section meetings either, but proximity and enticing programs might make attendance a more likely choice. New and expanded Section initiatives will include more support for Section NExT, Section speaker programs (http://maa.org/speakers) that offer access to MAA leadership or outstanding Pólya lecturers, and digital community tools such as MAA Connect. MAA Connect currently features communities composed of MAA Congress members, MAA Section Officers, and others to foster communication within the groups, but it will eventually include MAA Section communities where all members of a section can share ideas and news.

The success of this ‘new’ MAA will depend on the engagement of the members. As a new or ‘seasoned’ member of MAA, the first thing to do is take a good look at the “About MAA” webpage: https://www.maa.org/about-maa.

The new mission: “to advance the understanding of mathematics and its impact on our world” and core values: “community, inclusivity, communication, and teaching & learning” reflect the diversity of the mathematics community. Second, as members and Section leaders we must become more aware of the opportunities and programs that are available. A good way to start is to browse the articles in MAA Focus, the news magazine of the MAA (https://www.maa.org/press/periodicals/maa-focus).

In the Meet a Member column of the June/July 2019 issue, I share my thoughts about making our meetings more welcoming to attendees from all parts of the mathematics community. Also, when you attend a Section meeting, make sure you attend the business meeting. Not only will you get
current information about Section and national activities, you may also make valuable contacts.

An important role of the Section Representative is to be a conduit of information between the Section and the MAA leadership. Through the newsletter and my business meeting report at our Section meeting I will bring information to you. Please feel free to talk to me at our meetings or by email about your concerns and the issues you would like to see addressed at the national level.

Finally, I look forward to traveling back to my hometown in the Hampton Roads area for the Fall 2019 Section Meeting at Norfolk State University on November 8-9, 2019. I hope to see many of you there!

Bonita V. Saunders
MD-DC-VA Section Representative
bonita.saunders@nist.gov

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**VISUAL MATHEMATICS**

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Roanoke College students in Jan Minton’s Spring 2019 Math and Art class installed *Death Trap* in the stairwell of Trexler Hall, an academic building on campus. A variation on string art, this 10 ft tall piece shows 4 parabolas trapped by 54 tangent lines.

*Submitted & taken by Jan Minton.*
In inquiry-based learning and other forms of active learning, instructors get a chance to see student work in progress, ask questions, and give feedback. Many instructors have a lot of practice looking at student work from a deficit perspective: what did the student do wrong? How can I help them correct their misconceptions? (Or, how many points should I take off?) In the first hour of this workshop, we will practice looking at student work from an asset model instead: What does the student know? What can the student do? How can I help them build on that? How can the rest of the class use these ideas and insights? We will look at some interesting examples of student work, and discuss various ways of responding and building on its strengths.

The second hour of this workshop will be devoted to brainstorming and planning activities and events for the Maryland-DC-Virginia Inquiry-Based Learning Consortium. Thanks to a new NSF grant, we have an opportunity to increase our level of peer collaboration activity and support. Some possibilities include classroom observations, small group collaboration on course materials, lesson study, reading groups, etc. What would you like to be involved in? What topics would you like to see addressed in future workshops? We invite everyone who is even a little bit interested to join us and help us plan for the future.

The Maryland-DC-Virginia IBL Consortium was formed in early 2016 as a network of college math instructors with a common interest in inquiry-based learning and teaching. Since then the consortium has organized workshops, panel discussions, and swap sessions at meetings of the MD-DC-VA Section of the MAA, as well as a standalone workshop. We use the term “IBL” broadly, to include ambitious teaching, project-based learning, complex instruction, inquiry-oriented learning, discovery learning, and student-centered teaching. We recognize that IBL can look very different in different contexts, and view our role as supporting instructors in the version that works for them and their students. We welcome those who are new to IBL as well as those who are more experienced. We maintain a website and a Google Group email list; please join us!

FRIDAY WORKSHOP: BUILDING ON STRENGTHS, AND BUILDING OUR COMMUNITY OF INQUIRY-BASED LEARNING AND TEACHING

Fall 2019 Section Meeting Highlights

FRIDAY BANQUET ADDRESS: SAMURAI, KISSING CIRCLES, AND THE GEOMETRY OF SHINTO SHRINES

During the Tokugawa Period (1603-1868), Japan was almost completely isolated from the West, including the products of the Western revolutions in math and science. At the same time, the Japanese witnessed a cultural renaissance in the visual and performing arts, music, fashion, ceremony ... and mathematics. New problems and solutions appeared in Buddhist temples and Shinto shrines across the Japanese landscape. In this talk, we'll explore how wasan ("wa" = Japanese, "san" = mathematics) became so delicately folded into 18th century Japanese culture.

David Clark has been teaching at Randolph-Macon College in Ashland, VA since 2008, when he finished his PhD at the University of California, San Diego. He was a national Project NExT fellow and received his college’s Art Conway Award for teaching. Originally trained in low-dimensional topology, David has recently become interested in statistics education and math history, and in 2017 was awarded grants from the Japan Foundation and Association for Asian Studies to host an international conference in Ashland on Japanese mathematics.
This multilevel talk will discuss my work at the National Institute of Standards and Technology (NIST), but also look at other research projects that may be found throughout the Applied and Computational Mathematics Division and the rest of NIST. We will describe contributions in mesh generation, scientific visualization, and mathematical reference data motivated by the development of the NIST Digital Library of Mathematical Functions and reveal some interesting tidbits from the history of the original handbook, considered one of the most cited mathematical references of all time. This discussion will provide insight into the journey from my original research and dissertation to using that knowledge in my career at a federal research laboratory.

The mention or discussion of other projects in fields such as quantum information theory, materials science, graph theory, cybersecurity and nanotechnology will provide a wider view of the research that goes on at NIST. Some tips for succeeding at such a place and opportunities for internships and postdocs will also be discussed.

**Bonita V. Saunders** is a research mathematician in the Applied and Computational Mathematics Division at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland. She has been an active member of MAA for many years. She served as MD-DC-VA Section treasurer from 1999-2002, served on the Selection Committee for the Elta Z. Falconer Lecture sponsored by AWM and MAA from 2004-2009, and on the MAA BIG Committee from 2012-2017. She is currently MD-DC-VA Section Representative to the MAA Congress, and she was interviewed for the Meet a Member column in the June/July 2019 issue of MAA Focus. In January 2020 she will begin serving on the editorial board for Mathematics Magazine under Jason Rosenhouse.

Bonita received a Ph.D. in computational and applied mathematics from Old Dominion University, an M.S. in mathematics from the University of Virginia, and a B.A. in mathematics from the College of William and Mary. Her research interests include numerical grid generation, visualization of complex functions data, numerical software for special functions, and numerical solution of partial differential equations. In May 2019 she was elected a Fellow of the Washington Academy of Sciences.

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**SATURDAY MORNING ADDRESS: MATHEMATICS, MESH GENERATION, AND 3D GRAPHICS ON THE WEB, AND FINDING A CAREER AT THE NIST**

In Greek legend, Alexander the Great was confronted with the problem of untying a very complicated knot and gave up, instead deciding to cut the knot with his sword. The unknotting number of a knot is the minimum number of times one must cut two strands of a knot, pass one strand through the other, and re-glue the knot in order to untie it. We work with a generalization of the unknotting number due to Mathieu-Domergue which we call the untwisting number, the minimum number of times one must cut a knot and twist all the loose strands around each other in order to untie it. We show that, algebraically (i.e. up to our best algebraic approximation), the unknotting and untwisting numbers are the same, while geometrically they can differ arbitrarily.

**Kenan Ince** (they/them; Westminster College) is a Turkish-American mathematician and poet from Texas living on occupied Shoshone, Paiute, Goshute and Ute territory (so-called Salt Lake City). Their research investigates measures of knot complexity (including a generalization and lower bound on the unknotting number called the untwisting number). Their research interests also include mathematical pedagogy, the mathematics of social justice, the theory of 3- and 4-manifolds, and the mathematics of mechanical games such as Lights Out.
Dear members of the Maryland-District of Columbia-Virginia Section of the MAA,

I hope everyone is having a great semester and that many of you are planning on coming to the upcoming fall section meeting at Norfolk State University (NSU). This is my first year as the section chair and my 10th year at James Madison University. Our MAA section is one of the friendliest professional communities that I have been involved in, and our meetings are full of exciting and interesting math talks and discussions. So many people are involved behind the scenes to make each of our meetings a great success, and perhaps that is why most of us keep coming back to the section meetings. Being involved in the MAA section as the program chair was the most meaningful professional service that I have done so far, and it is my great pleasure and honor to serve as the section chair now.

For several years now, our section has focused on inclusion in our meetings. The spring 2019 section meeting was especially notable, since this was the first meeting that our section hired interpreters to present invited talks, some contributed talks, and student activities such as jeopardy for the deaf and hard-of-hearing faculty and students from Gallaudet University. We appreciate the leadership of David Taylor who was the section chair at that time, the help from faculty members at Gallaudet University, and the support of the MAA headquarters that made this possible. We are currently working with the MAA headquarters to continue and expand the inclusion of deaf and hard-of-hearing faculty and students at our spring 2020 section meeting at Salisbury University.

One of my goals as section chair is to facilitate an environment where section members can have more active collaborations in undergraduate education and undergraduate research. We already have numerous talks and workshops about undergraduate education and research at our meetings as well as undergraduate activities in the spring meetings. But I would like to encourage everyone to take one step further to work with someone or form a group in our section to try new projects in undergraduate teaching and/or undergraduate research just like we may try with colleagues at our own institutions. I will be running a discussion session entitled “How to increase discussions and collaborations in our MAA section” at the upcoming section meeting at NSU, and I am excited to hear your thoughts and to share my own.

Please feel free to contact me if you have any questions or suggestions regarding our section. Looking forward to connecting with many of you!

Minah Oh
MAA MD-DC-VA Section Chairperson
ohmx@jmu.edu
The inaugural MORE (Mathematics - Opportunities in Research and Education) undergraduate workshop was held at Virginia Tech October 26-27, with plenary talks by Michael Young (Iowa State University) and Brandilyn Stigler (Southern Methodist University). Participants enjoyed doing mathematics together at MORE, through related hands-on small group activities led by graduate students and postdocs and even a specially crafted mathematical escape room! Panels on Pathways & Careers and Summer Research Opportunities & Internships as well as lightning sessions with grad students and professional development discussions rounded out the itinerary. MORE is designed to increase the number of females, first-generation undergraduate students, and students from groups traditionally underrepresented in STEM who plan to earn graduate degrees in mathematics and is funded by NSF and NSA as well as the VT Department of Mathematics and College of Science and in collaboration with AWM. The MORE organizing team includes faculty from VT and Clemson: Nicole Bannister, Lauren Childs, Julianne Chung, Lea Jenkins, Gretchen Matthews, and Sean Sather-Wagstaff. For MORE information, see http://intranet.math.vt.edu/MORE/ and watch for MORE again in 2020!

St. Mary’s College of Maryland, the National Public Honors College, will host a research program for undergraduate students again Summer 2020. This is a 7-week program that will bring 12 undergraduate students to the Honors College to engage in mathematical research. This program includes seminars that will prep students for advanced mathematics courses (such as Abstract Algebra and Real Analysis) and includes academic and professional-development activities. One of their goals is to attract underrepresented students to mathematics and another is to introduce research experience to early-career undergraduate students. The expected prerequisites are Calculus II...and that’s it! However, if you have had a class in Vector Calculus, Linear Algebra, or a bridge course like Intro to Proofs, that’s okay.

Find more information about applying here: http://faculty.smcm.edu/sganzell/reu/. Applications are due March 15, 2020. Direct all questions to Professor Sandy Ganzell (sganzell@smcm.edu).
MARYMOUNT UNIVERSITY SEPTEMBER MATH SEMINAR OUTING TO THE MAA CARRIAGE HOUSE

The MAA Carriage House lecture “Untold Stories of Black Mathematicians with Scott Williams” was offered twice: Tuesday, September 10 and, September Wednesday 11th. Sixteen Marymount undergraduate students and four mathematics faculty traveled downtown on the DC Metro to attend this event as part of their weekly mathematics seminar.

In a short post-reflection, the students indicated that they enjoyed the talk, with almost 80% of them saying they would like to attend an event like this in the future. Sample student comments included:

“I enjoyed learning about the stories I don't think I would’ve heard if I had never gone to something like that. The history of black mathematicians in the US (and a little globally) is something that was interesting, especially because it was a close-knit group. Dr. Williams and his colleagues’ success despite massive adversity also makes for an inspiring story.”

“I enjoyed hearing about all that Dr. Williams accomplished even through obstacles like segregation and discrimination. I also enjoyed hearing his advice that gave to us college students. Lastly, I enjoyed getting to talk more and get to know classmates.”

“The history that is not often told is always very interesting. I especially enjoyed hearing about the personal accounts of meeting these people. It really provides a perspective on how recent and impactful these stories are.”

“I found the talk really interesting. Personally, I had no idea that there has been so much discrimination in the field of mathematics and it was insightful to hear some of these hardships first hand.”

“The best part about the talk was definitely learning about just how different people's experiences, especially is STEM fields can be for different people. I find it very introspective and informative when I hear discussion about privilege. Also, like many other aspects of history, I wasn’t aware of just how much the African American community contributed to developments in math. I also found it very inspiring that two people cared enough about educating the people around them that they would dedicate so much of their time and knowledge to the subject.”

Thank you to the MAA for providing opportunities like this for students to experience the larger professional mathematics community early during their undergraduate years. It is also a good way to bond as a department. I commend taking advantage of these out-of-classroom events whenever possible.

(Photo on page 9)
SOUTHEASTERN ANALYSIS MEETING

The 36th Southeastern Analysis Meeting (SEAM 36) will be hosted by Old Dominion University on March 13-15, 2020. The conference will be held at ODU’s Regional Center in Virginia Beach, Virginia, located at Virginia Beach Higher Ed Center

1881 University Drive

Virginia Beach, VA 23453

(N.B.: this is not ODU’s main campus in Norfolk, Virginia.)

The plenary speakers will be

Isabelle Chalendar, Université Paris-Est - Marne-la-Vallée
Dominique Guillot, University of Delaware
Irina Holmes, Texas A&M University
Scott McCullough, University of Florida
Jurij Volčič, Texas A&M University
Yuesheng Xu, Old Dominion University

and there will be parallel sessions for 20-minute contributed talks. Please go to the conference website https://www.odu.edu/math/seam to register, and find information about hotels, travel and abstracts.

Contact: Ray Cheng rcheng@odu.edu.

Photo of students who attended the MAA Carriage House lecture “Untold Stories of Black Mathematicians with Scott Williams”

Left to right: Jacquie Rische, two Marymount students, Maria Markovich
MORE NEWS FROM AROUND THE SECTION

◊ Randolph-Macon College Professor **Adrian Rice** was presented with the Paul R. Halmos – Lester R. Ford Award at MathFest in Cincinnati for his paper "Partnership, Partition, and Proof: The Path to the Hardy–Ramanujan Partition Formula," which was published in 2018 in *The American Mathematical Monthly*.

At the awards ceremony, a citation was read in praise of his article: "The Hardy–Ramanujan partition formula remains one of the most stunning triumphs in the theory of numbers. ... This beautiful article celebrates the centennial of the partition formula, taking the reader on a tour through its historical development. ... Adrian Rice chronicles the story in stages, portraying the famed result not as a singular event, but rather as the culmination of a sequence of refinements and improvements pioneered by the rigorous G. H. Hardy and the enigmatic Indian mathematician, Srinivasa Ramanujan."

This award represents the fourth time that Rice has won a prize for an article he has published in an MAA journal. In 2007, he received the MAA’s Trevor Evans Award for Outstanding Expository Writing for an article he co-wrote with R-MC Mathematics Professor Eve Torrence on the mathematics of Lewis Carroll. He also received the Trevor Evans Award for an article entitled "Gaussian Guesswork (or Why 1.19814023473559220744...is Such a Beautiful Number)" in 2010. And in 2013, he won the MAA’s Carl B. Allendoerfer Award for the paper "Why Ellipses are not Elliptic Curves," which he co-authored with Professor Ezra Brown of Virginia Tech.

◊ Two Randolph-Macon College mathematics majors, **Martha Hartt ’20** and **Maria Cummins ’20**, won awards for presentations they gave on their original research at MathFest in Cincinnati. Hartt and Cummings presented their work in the Pi Mu Epsilon student sessions. The awards for Excellence in Student Exposition or Research are funded by the American Mathematical Society, the American Statistical Association, and the Budapest Semesters in Mathematics and include cash awards and a copy of "100 Years of Math Milestones: The Pi Mu Epsilon Centennial Collection" by Stephan Garcia and Steven Miller.

Martha Hartt presented "A Proof of Bertrand’s Postulate," which was based on research she did under the guidance of Mathematics Professor Adrian Rice. Hart was also awarded the Best Student Paper at the 2019 Spring MD-DC-VA Section Meeting for her presentation on this work.

Maria Cummings presented "Investigations into the Discrete Arithmetic-Geometric Mean," which was based on research she did under the guidance of Professor Chiru Bhattacharya.
MIXED NUMBERS

ACROSS
1 NFL team that plays home games in New Jersey
5 U.S. taxation authority
8 Gregor ___ (Kafka character)
13 Org. for the aged
14 Garfield or Heathcliff, in the comics
15 Picking up one’s dry cleaning, e.g.
17 *English musician who composed the start-up sound for Windows 95
19 ___ Beanie (miniature Beanie Baby toy)
20 Replay effect
21 Dog food brand
23 Rock concert blaster
24 *Lepidopterist’s tool
28 ___ Snicket (fruity pen name of Daniel Handler)
31 Under way
32 The “E” in “Q.E.D.”
33 July’s birthstone
36 ___ Gay (WWII bomber)
39 Be under the weather
40 *Way up a ski slope
42 Many a "Sister Act" character
43 Vintage-inspired
45 Uppity sort
46 Royal decree
47 Utter boredom
49 Enthusiastic assent in Arles
51 *Game in which players stick out one or two fingers

DOWN
1 Quick punches
2 Counterpart of a countess
3 The Andrews Sisters, e.g.
4 Junk email sender
5 Drinker cooler
6 Charged, like a rhino would
7 Committed theft
8 Ignite
9 "We ___ the Champions"
10 G.I.’s field ration
11 Home of the Alamo
12 The Japanese TV show "Sailor Moon," for one
16 Division of a coll., often

55 Letters after CD- or DVD-
56 Actor Michael of "The Lego Batman Movie"
57 Blood of the gods, in Greek mythology
61 Big name in shortening
64 *Unconventional
66 Au : gold :: Ag :
67 Molecule in a double helix form
69 Move furtively
70 Airport gate info
71 Piece that starts in the corner of a chessboard

18 Sentence’s subject, typically
22 Seek divine help from
25 Newbie
26 Motion picture magnate Marcus
27 Hither and ___
28 Shakespeare’s "King ___"
29 Shallowest Great Lake
30 Ingredient in some shakes
34 Pro
35 "Stand by Me" singer ___ E. King
37 Hawaiian shindig
38 Not pro
40 "Mazes and Monsters" author Jaffe
41 Relative of a bassoon
44 Hosp. pros
46 Actress Jenna of "The Office"
48 Open, as a bottle of wine
50 Meter or liter, for example
51 Dungeons & Dragons baddies
52 Actress Roberts of "Everybody Loves Raymond"
53 Wear down
54 Boast about
58 Wonder Woman, for one
59 Estimating words
60 Stink to high heaven
62 "Law & Order: ___” (Mariska Hargitay show)
63 Transparent animation sheet
65 Minuscule amount

Crossword by Neville Fogarty, Assistant Professor of Mathematics, Christopher Newport University

Hint: Check out the last words of the answers to the starred clues!

Forest pi found in Pacific Spirit Park, Vancouver, BC. (MAA Found Math)

Picture taken by Kenneth Vincent.
EVEN MORE NEWS FROM AROUND THE SECTION

◊ Steven Muller Distinguished Professorship awarded to Susan Goldstine

The Steven Muller Distinguished Professorship in the Sciences honors faculty whose accomplishments in the sciences establishes their expertise in a field of research relevant to our understanding of the world we inhabit. The Muller Distinguished Professor in the Sciences contributes to a vital dialog among scientists which is enhanced by the laboratory and field research contributions of St. Mary’s College students.

Goldstine earned her doctorate in mathematics from Harvard University. She joined the faculty of St. Mary’s College in 2004 and now serves as a professor of mathematics. She is also an associate editor of the Journal of Mathematics and the Arts.

Her joint and individual artworks and associated research have appeared in Math Horizons, the Journal of Mathematics and the Arts, the proceedings of the international Bridges Conference, and various mathematical art exhibits in the United States and around the world. Together with computer scientist and artist Ellie Baker, she is the co-author of the 2014 book “Crafting Conundrums: Puzzles and Patterns for the Bead Crochet Artist,” which collects their extensive research on mathematical bead crochet. Goldstine has recently joined the board of directors of the Bridges Organization, which runs the annual Bridges Conference on mathematics and the arts.

◊ Chris Lee was appointed Director of the Teaching Collaborative at Roanoke College beginning in January 2020. Chris has a well-deserved reputation as someone who cares deeply about teaching and excels at it. He has received the Dean’s Award for Exemplary Teaching and presently serves as one of the Faculty Teaching Scholars in the Teaching Collaborative. In recent years, Chris has been active in the scholarship of teaching, making presentations at both national and regional conferences. He is very interested in expanding and deepening conversations about teaching on campus. He looks forward to facilitating conversations and creating opportunities for many faculty members to come together to share ideas, keep up with best practices and learn about the most recent research on teaching and learning.

◊ The math department at the University of Virginia has 5 new faculty members this year: Evangelos Dimou, Evangelia Gazaki, Ken Ono, You Qi, and Christian Reidys, and three new postdocs: Bruno Braga, Anna Pun, and Charlotte Ure.

◊ Dina Yagodich was just promoted to full professor at Frederick Community College, effective this semester. Congrats to Dina!
WHAT’S YOUR ________ NUMBER?

According to Wolfram MathWorld, “The Erdős number is the number of “hops” needed to connect the author of a paper with the prolific late mathematician Paul Erdős.” Many of us have heard of the Erdős number. In fact, one of my colleagues (Karin Saoub) has an Erdős number of 2—she wrote a paper with her advisor Hal Kierstead, who had written a paper with Erdős. Another member of our section from Old Dominion University, Raymond Cheng, has an Erdős number of 3, depicted by the collaboration chain Ray Cheng—Lael F. Kinch—Ralph Jasper Faudree Jr.—Paul Erdős.

A lesser-known number is the Bacon–Erdős number. This is the sum of the Erdős number and the Bacon number. The Bacon number is the number of degrees of separation from actor Kevin Bacon. Note—you have to have been in a movie or film to have a Kevin Bacon number! Karin Saoub was in the movie Mona Lisa Smile as an extra when it was filmed at Wellesley College. So, she was in a movie with Julia Roberts, who was in (perhaps among other movies) Flatliners with Kevin Bacon. Hence, Karin Saoub’s Bacon number is 2. Her Bacon-Erdős number is then 4.

Ray Cheng emailed me recently to let me know that he had a brief non-speaking role in the recently released film American Dreamer, directed by ODU alumnus Derrick Borte. As a result, Ray has a Bacon Number of 3 (following the linkages Ray Cheng—Jim Gaffigan—William H. Macy—Kevin Bacon). Thus, Ray’s Bacon-Erdős number is 6.

Ray also informed me of another ______ number—the Morphy number! Paul Morphy was a chess champion in the 19th century. Ray’s Morphy number is 5, since he played a chess game in 1977 with Erich W. Marchand, who has a Morphy number of 4 (Marchand—Arthur Bisguier—Savielly Tartakower—James Mortimer—Paul Morphy). Ray says, “I may be the only person on Earth with a finite Erdős-Bacon-Morphy number.”

Thanks, Ray, for sharing with us these examples of, as you say, the “small world phenomenon.”

Maggie Rahmoeller, Newsletter Editor

Note: Interested in calculating your own Erdős number? Check out: https://mathscinet.ams.org/mathscinet/freeTools.html?version=2
## TREASURER’S REPORT

### General Fund
Balance, March 4, 2019  $5448.86

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Balance, October 14, 2019  $5089.07

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Balance, March 4, 2019  $1173.74

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Balance, October 14, 2019  $749.99

### Project NExT Fund
Balance, March 4, 2019  $70.00

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<td>Student Activity Supplies &amp; Trophies</td>
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<td>Total Expenses</td>
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Balance, October 14, 2019  $215.00

### Section NExT Fund
Balance, March 4, 2019  $1754.71

<table>
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<td>Section NExT Meals</td>
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Balance, October 14, 2019  $2153.25

### IBL Consortium Fund
Balance, March 4, 2019  $1904.06

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<tbody>
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Balance, October 14, 2019  $1904.06