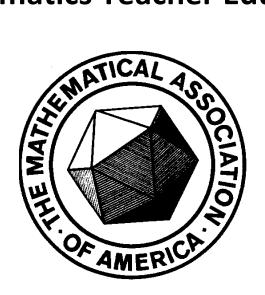
### Joint Meeting of the

### Mathematical Association of America New Jersey Section

#### and the

### New Jersey Association of Mathematics Teacher Educators



Kean University
STEM Building
Union, NJ

Saturday, November 14, 2015

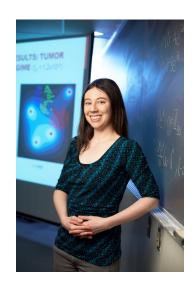
### **Abstracts and Biographies of Speakers**

# Mathematical Oncology: Using Mathematics to Understand Cancer Progression and Treatment

# Jana Gevertz The College of New Jersey

Over the last several decades, much has been learned about cancer through experimental and clinical research. However, the more we learn about cancer, the more it is recognized that cancer is a multi-faceted disease that depends on a large number of nonlinear, multiscale processes. In this talk, I will introduce the field of mathematical oncology – the subfield of mathematical biology that uses mathematics to elucidate how tumor behavior results from these complex multiscale interactions. Although questions that arise in this field are motivated by the biology, a broad range of mathematical techniques are needed to best address these questions. I will discuss how different mathematical approaches (continuous vs. discrete, deterministic vs. stochastic) can be utilized to answer the types of questions that arise in trying to understand cancer dynamics. Examples to be explored will include a deterministic and continuous model of tumor response to cancer-killing viruses, a stochastic hybrid discrete/continuous model of tumor response to vascular-targeting drugs.

Jana Gevertz is an Associate Professor in the Department of Mathematics and Statistics at The College of New Jersey. She has spent her entire academic career in New Jersey – starting with her undergraduate studies at Rutgers University, and then earning her doctorate in Applied and Computational Mathematics from Princeton University. In graduate school, her research was supported by a Burroughs Wellcome Fellowship in Biological Dynamics, as well as the NSF Graduate Research Fellowship in Applied Mathematics. This year she is on sabbatical leave, and not to risk leaving the



state, she is currently a visiting faculty member in the Department of Mathematics at Rutgers University. Her research interests have always been focused on how we can use mathematics to further our understanding of cancer progression and response to treatment. Dr. Gevertz is also very interested in bringing biology applications into the mathematics classroom, and in encouraging biology students to further their studies in mathematics. For this reason, Dr. Gevertz has mentored nine undergraduate students over the last five years (almost half being biology majors) in intensive research experiences. Dr. Gevertz is also very interested in the teaching of undergraduate mathematics. She was a national Project NExT fellow in the Green 09 cohort, and is currently co-directing the statewide program NJ-NExT.

# Fewest Pieces of Cake and Isoperimetric Square Tilings of Rectangles: A Vignette of Mathematical Practices in Action Hyman Bass University of Michigan

I will present a small piece of mathematics that arose from a question about fractions in third grade. I will use this as a context to illustrate mathematical practices in action. Here is the problem: Suppose that s students want to equally share c cakes. What is the smallest number of cake pieces, p(c, s), needed to achieve this fair distribution? We will derive a formula for p(c, s) and describe two different distribution schemes that achieve this, the "linear" and the "Euclidean" distributions. The Euclidean distribution corresponds to the "Euclidean square tiling" of a  $c \times s$  rectangle R, and we shall see that this square tiling is "isoperimetric" in the sense that it has smallest "perimeter" among all square tilings of R. I will describe a generalized version of this problem that is still open.



Hyman Bass is the Samuel Eilenberg Distinguished University Professor of Mathematics and Mathematics Education at the University of Michigan. He has served as President of the American Mathematical Society and the International Commission on Mathematical Instruction and as Chair of the National Academy of Sciences'

Mathematical Sciences Education Board, and of the AMS Committee on Education. He is a member of the U.S. National Academy of Sciences, the American Academy of Arts and Sciences, the Third World Academy of Sciences, and the National Academy of Education. In 2006 he received the U.S. National Medal of Science. His mathematical research spans various domains of algebra, notably algebraic K-theory and geometric group theory. His work in education (largely with Deborah Ball) focuses mainly on mathematical knowledge for teaching, and on the teaching and learning of mathematical practices, such as reasoning and proving, and discerning and developing mathematical structure, in K-16 classrooms.

### **Polynomial Root-Finding and Polynomiography**

### Bahman Kalantari Rutgers University

What are polynomials? What are their applications? Because of the foundational role of polynomials in all of mathematics and the sciences, it is easy to give some story as answer to these questions to anyone posing them. My accidental research interest in the subject of polynomial root-finding eventually led me into introducing the term *Polynomiography* for algorithmic visualization in solving polynomial equations. Through Polynomiography and its fractal and non-fractal images, I have been able to tell new stories on polynomials to diverse audiences, connecting polynomials to math, science, education and art. Formal recognition of Polynomiography and its exploration in academic settings is still minimal – perhaps due to lack of funding, especially in the advancement and promotion of nontraditional creative interdisciplinary innovations. However, its informal recognition continues to grow, attracting not only educators and students in middle and high schools and colleges, but even children and the general public. Polynomiography can play a significance role in promoting STEAM. In this talk I will present some details on the foundation of polynomiography, its uniqueness and distinction from fractals, as well as some experiences that include collaborations with K-12 educators. I will also give a brief account of the following: "A geometric modulus principle for polynomials," "A one-line proof of the fundamental theorem of algebra with Newton's method as a consequence," "Newton-Ellipsoid method and Its polynomiography," "The fundamental theorem of algebra for artists," "Solving a cubic equation by the quadratic formula," "Algorithms and polynomiography for solving quaternion quadratic equation," and "Polynomiography of partial sum of exponential series."



**Bahman Kalantari** is a professor of computer science at Rutgers University. He received his Ph.D. in Computer Science from the University of Minnesota, as well as Masters degrees in Mathematics and Operations Research. His main research areas are theory and algorithms in linear, nonlinear and discrete optimization; computational geometry; and polynomial root-finding. He has introduced the term *polynomiography* for algorithmic visualization of polynomial equations and holds a U.S. patent for its

technology. Polynomiography has received attention in national and international media. He believes polynomiography will democratize polynomials, turning these abstractions into entities that will be appreciated by the general public, will result in novel applications, and will attract the youth to STEM. Because of polynomiography he has also taken a keen interest in fine art, even fashion. He is the author of the book *Polynomial Root-Finding and Polynomiography*. His article, "The Fundamental Theorem of Algebra for Artists" appeared in Princeton University Press publication, *The Best Writing On Mathematics 2014*. He maintains the website www.polynomiography.com.

# Workshop: Finding Surprising Mathematical Connections Presented by Hyman Bass

The unity of mathematics is expressed through its rich network of connections. But the curriculum nicely organizes the subject into topic domains (arithmetic, algebra, geometry, calculus, statistics & probability, etc.) and this sometimes silos student thinking, which can inhibit seeing connections. I want to engage you in some problem solving activities that are designed to foster the discovery and use of (sometimes surprising) connections, across domains, and among different problems.

#### **Abstracts of MAA-NJ General Contributed Paper Sessions**

Organizer: Theresa C. Michnowicz, New Jersey City University

Session 1: Room 3-06

Presider: Kathy Turrisi, Centenary College, turrisik@centenarycollege.edu.

1:30-1:45: Experiential Learning through a Community Outreach of Free Math Tutoring. Kathy Turrisi, Centenary College, turrisik@centenarycollege.edu and Krassi Lazarova, Centenary College, lazarovak@centenarycollege.edu.

ABSTRACT: Centenary College is reaching out to the Hackettstown community by offering free tutoring to local K-12 students. A Math Tutoring Center (MTC) has been established as part of the Downtown Centenary initiative. It offers mathematics help to children after school. Students recommended by their math teachers come and work with Centenary student and faculty volunteers on homework problems and test preparation. Former teachers also volunteer at the center. The outreach is gaining popularity and makes a positive impact on both students and volunteers.

1:50-2:05: **A Flipped Classroom Model and Self-graded Homework**. Frédéric Mynard, New Jersey City University, fmynard@njcu.edu.

ABSTRACT: The intent is to share my experience with a flipped Calculus course using resources I have developed: instructional videos, e-books, and a comprehensive set of resources for self-graded homework. I have also used this technique successfully for other non-flipped courses, and this may be of interest whether one wants to flip the classroom or not.

2:10-2:25: **Developing Writing Assignments for Undergraduate Mathematics Courses.** Carol Manigault, Felician University, manigaultc@felician.edu.

ABSTRACT: This presentation explores some of the writing assignments that have been employed successfully in an undergraduate course at Felician University entitled "Mathematical Explorations: Mathematical Structures I," which is attended primarily by Teacher Education students. It is believed that such assignments can be adapted for use in other mathematics courses on the undergraduate level, as well.

2:30-2:45: **Teaching College Geometry with GeoGebra**. Kenneth R. Myers, Bloomfield College, kenneth myers@bloomfield.edu.

ABSTRACT: This presentation will show how I use Geogebra in a college geometry course. We get to explore several different areas of geometry including Euclidean geometry, transformation geometry, non-Euclidean geometry, tessellations, and fractals. The Geogebra software was easy to learn and teaching it to students was an enlightening experience that I believe would be helpful to other instructors in their teaching.

2:50-3:05: **Designing a Special Topics Course on "Godel, Escher, Bach" – With Help from Lewis Carroll.** Stephen Andrilli, La Salle University, andrilli@lasalle.edu.

ABSTRACT: Teaching a special topics course on Douglas Hofstadter's famous "Gödel, Escher, Bach" (GEB) offers an opportunity to introduce a wealth of mathrelated topics in an intriguing manner to students who are not necessarily mathematics majors. Since GEB is a very complex and intricate work, this talk includes much useful advice for designing and implementing such a course (from having taught from GEB many times over the last 25 years). In particular, incorporating the two Alice books by Lewis Carroll into the course (via Martin Gardner's "The Annotated Alice") adds an illuminating dimension on account of the many links between these works and GEB.

Session 2: Room 3-07

Presider: Chengwen Wang, Essex County College, wang@essex.edu.

1:30-1:45: **A Note On Mathieu's Series**. Mahmoud Affouf, Kean University, maffouf@kean.edu.

ABSTRACT: Mathieu's series have been introduced by Mathieu in his work on elasticity of solid bodies (1890). Several interesting problems, solutions and bounds for the Mathieu series have been established. In this talk, we derive a new expansion of Mathieu's series for a small parameter, which permits us to express the coefficients in terms of Riemann Zeta functions.

1:50-2:05: On the Images of Jordan Polynomials Evaluated over Symmetric Matrices. Alexander Ma, Bowdoin College, ama@bowdoin.edu, and Jamie Oliva, Muhlenberg College, jo248428@muhlenberg.edu.

ABSTRACT: A long-standing open question posed by Lvov and Kaplansky asks whether the image of a multilinear polynomial over a field F forms a vector space when evaluated over the full matrix algebra Mn(F). A natural variation of this question asks whether the image of a multilinear Jordan polynomial evaluated over a Jordan algebra forms a vector space, where a multilinear Jordan polynomial is a multilinear polynomial with respect to the non-associative Jordan operation. We will show that the image of any degree-three multilinear Jordan polynomial evaluated over the Jordan algebras of real and complex symmetric matrices forms a vector space.

### 2:10-2:25: Calculus without Limits: A Visual Approach to the Rules of Calculus. Andrew Grossfield, IEEE, Grossfield@IEEE.org.

ABSTRACT: Of course we all want more of our citizenry to be analytically literate but many of our youngsters who are interested in the STEM disciplines have problems confronting the delta-epsilon arguments that appear in calculus texts and courses. In advanced math courses such as functional analysis and calculus of variations the analog to the derivative is a linear operator that relates variations in the domain to variations in the range. What would happen if the derivative was defined, not as a limit of a quotient, but as a magnifier of domain variations to produce variations in the range? Could the rules of calculus still be reasonably justified? My recent paper "Calculus without Limits: A Visual Approach to the Rules of Calculus" will be presented at the ASEE – CIEC meeting next February.

## 2:30-2:45: **Accumulation Points of Sequences of Folding Sequences.** Matt Sequin, Saint Peter's University, msequin@saintpeters.edu.

ABSTRACT: If you imagine a long strip of paper representing a real line, a dyadic sequence can be produced by folding this piece of paper in half multiple times. This is called a folding sequence. This talk will introduce the concept of folding sequences and describe an ongoing research project that is examining the accumulation points of such sequences.

# MAA-NJ and NJAMTE Fall 2015 Meeting Program

8:30 – 9:30 Registration and Breakfast; outside STEM Building auditorium  9:30 – 9:40 Welcome Address, Kean University; STEM Building auditorium  9:40 – 10:30 Mathematical oncology: Using mathematics to understand cancer progression and treatment, Jana Gevertz, The College of New Jersey. Presider: Karen Clark, The College of New Jersey  10:30 – 10:40 Business Meeting; STEM Building auditorium  10:40 – 11:10 Intermission and Book Exhibits; outside STEM Building auditorium  11:10 – 12:00 Connected mathematical thinking, Hyman Bass, University of Michigan. Presider: Maria DeLucia, Middlesex County College  12:00 – 1:30 Lunch; first floor atrium, STEM Building 1:30 – 2:45 Workshop: Surprising mathematical connections, presented by Hyman Bass, University of Michigan; room 3-17  1:30 – 3:10 Contributed Paper Sessions; rooms 3-06, 3-07, and 3-08  3:00 – 3:30 Intermission and Refreshments; outside STEM Building auditorium (Silent auction bidding ends at 3:35)  3:35 – 4:25 Polynomial root-finding and polynomiography, Bahman Kalantari, Rutgers University. Presider: Emanuel Emanouilidis, Kean University  4:30 – 5:00 Prizes and Awards; Door prizes and silent auction winners (must be present to win); STEM Building auditorium  4:30 – 6:00 NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield Township		
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auditorium (Silent auction bidding ends at 3:35)  3:35 – 4:25  Polynomial root-finding and polynomiography, Bahman Kalantari, Rutgers University. Presider: Emanuel Emanouilidis, Kean University  4:30 – 5:00  Prizes and Awards; Door prizes and silent auction winners (must be present to win); STEM Building auditorium  4:30 – 6:00  NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield	1:30 - 3:10	Contributed Paper Sessions; rooms 3-06, 3-07, and 3-08
3:35 – 4:25  Polynomial root-finding and polynomiography, Bahman Kalantari, Rutgers University. Presider: Emanuel Emanouilidis, Kean University  4:30 – 5:00  Prizes and Awards; Door prizes and silent auction winners (must be present to win); STEM Building auditorium  NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield	3:00 – 3:30	Intermission and Refreshments; outside STEM Building
Kalantari, Rutgers University. Presider: Emanuel Emanouilidis, Kean University  4:30 – 5:00  Prizes and Awards; Door prizes and silent auction winners (must be present to win); STEM Building auditorium  4:30 – 6:00  NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  5:30  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield		auditorium (Silent auction bidding ends at 3:35)
Emanouilidis, Kean University  4:30 – 5:00  Prizes and Awards; Door prizes and silent auction winners (must be present to win); STEM Building auditorium  4:30 – 6:00  NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  5:30  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield	3:35 – 4:25	Polynomial root-finding and polynomiography, Bahman
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(must be present to win); STEM Building auditorium  4:30 – 6:00  NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  5:30  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield		Emanouilidis, Kean University
4:30 – 6:00  NJ-NeXT Workshop: Technology and a new teaching paradigm, presented by Pearson Education; room 3-06  5:30  Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield	4:30 - 5:00	Prizes and Awards; Door prizes and silent auction winners
paradigm, presented by Pearson Education; room 3-06  5:30 Dinner Honoring Speakers; Cathay 22, 124 US-22, Springfield		(must be present to win); STEM Building auditorium
5:30 <b>Dinner Honoring Speakers;</b> Cathay 22, 124 US-22, Springfield	4:30 - 6:00	NJ-NeXT Workshop: Technology and a new teaching
		paradigm, presented by Pearson Education; room 3-06
Township	5:30	<b>Dinner Honoring Speakers;</b> Cathay 22, 124 US-22, Springfield
		Township

Session 3: Room 3-08

Presider: Srabasti Dutta, Ashford University, srabastidutta@gmail.com.

1:30-1:45: **Outreach and Successes: The Math Alliance and its Activities.** Louis Beaugris, Kean University, Ibeaugri@kean.edu.

ABSTRACT: The National Alliance for Doctoral Studies in the Mathematical Sciences aims at increasing the number of mathematically talented U.S. born students who earn their PhDs in mathematics, including students from underrepresented minorities. We will describe the structure, the outreach activities and the successes of the Math Alliance. In particular, we will show how the *Facilitated Graduate Application Process* (F-GAP) and the *Fields of Dreams Conference* help match students with doctoral programs.

1:50-2:05: Extracting Square Roots of Power Series Functions. Lee N. Collins, County College of Morris, ncollins@ccm.edu.

ABSTRACT: We discuss a division-like algorithm used for extracting square roots, described by Newton in his prized Method of Fluxions, published posthumously in 1736. We explore the theory behind the algorithm and its origin in the binomial theorem, and an interesting extension that allows us to extract the square root of any power series function by hand.

2:10-2:25: **Dynamical Closure of Classes of Subshift Languages**. David Buhanan, Centenary College, buhanand@centenarycollege.edu.

ABSTRACT: In this paper we examine subshifts from the perspective of formal languages. Several classes of languages of subshifts are shown to be closed under (dynamical) factor maps. The main theorem is inspired by and extends the well-known result that the class of sofic shifts is closed under factoring.

2:30-2:45: Survival Analysis in Breast Cancer, Parametric and Non-Parametric Models, and Gene Expression Variables. Wayne M. Eby, New Jersey City University, weby@njcu.edu.

ABSTRACT: We will outline the use of non-parametric and parametric survival models in studying survival times, particularly as applied to data on survival for breast cancer patients. We also look at the relation between the hazard and survival functions, and what these represent. In addition we discuss some issues these functions can reveal relating to the progression of the disease. We are

particularly interested in application of the parametric hypertabastic distribution to a set of breast cancer survival data which includes the values of several important gene expression variables for each of the patients. We discuss briefly the value of these gene expression variables as covariates, and what the associated survival analysis can tell us.

#### 2:50-3:05: Recent Uniqueness Results for Complex Valued KenKen.

David Nacin, William Paterson University, nacind@wpunj.edu.

ABSTRACT: In this talk we find all possible four-by-four KenKen of a certain size over a set of complex numbers and show the necessary and sufficient conditions for such a problem to have a unique solution.

#### **Lunch Discussion Tables**

Organized by Theresa C. Michnowicz, New Jersey City University. There will be five discussion tables at lunch:

- 1. Math content for K-12 teachers: What do you think would serve them well?, led by Hyman Bass, University of Michigan
- 2. The challenges and benefits of interdisciplinary teaching and research, led by Jana Gevertz, The College of New Jersey
- 3. Rethinking polynomials and their teaching in K-16 via polynomiography and promoting STEAM, led by Bahman Kalantari, Rutgers University
- 4. **Getting to know each other, MAA-NJ and NJAMTE**, led by Bonnie Gold, Monmouth University
- 5. **NJ-NExT Table: Follow up discussion on active learning, inquiry-based learning and group work,** led by Kaaren Finberg, Ocean County College Those who pre-registered have priority at these discussion tables. We look forward to a set of lively and interesting discussions!

## Report of the Board of Governors meeting August 4 at MathFest 2015 Hieu Nguyen, MAA-NJ governor

The MAA celebrated its centennial at Mathfest in Washington, D.C., with over 2500 participants in attendance, smashing the record for the largest Mathfest ever.

It was announced that the U.S. team consisting of six students won first place at the International Mathematical Olympiad (IMO) held this past June in Thailand. Five of the six students earned gold medals. The last time that the U.S. placed first was 21 years ago. It was also announced that there were two female winners at this year's USA Mathematical Olympiad (USAMO).

The MAA continues to run annual deficits, but declining each year. This is due to declining memberships, which is a trend among all professional societies, and also because the MAA has stopped giving free teaser memberships. Revenue from publications has been flat even though JSTOR access to the Monthly publication is very strong. But JSTOR access is mostly through institutional consortiums and not individual memberships.

Jennifer Quinn, chair of MAA's Governance and Communication task force, presented three models of governance to replace MAA's current model. All models call for establishing a small executive board that would manage MAA's finances and programs and two of the models include a larger general assembly (similar to the current Board of Governors) that would handle policy. A motion was passed to recommend to the task force that any proposed model consist of both a board AND assembly. The MAA centennial fundraising efforts have totaled \$5 million towards its \$7 million goal. The MAA River of Bricks at the Carriage House continues to be available for \$303 per brick.

Some recommendations that were discussed to increase MAA memberships include providing member-only benefits such as an exam questions repository for instructors (with like-and-share features) that was proposed by MAA President Francis Su and a tiered membership fee structure. There was discussion about joint memberships with AMS and SIAM, something that has been considered in the past, but this idea was deemed impracticable due to financial hurdles.

Respectfully submitted, Hieu Nguyen, Governor of MAA-NJ Section

### **Book Sales at the Meeting**

The discounted meeting price for MAA books (35%) also applies to books *not* currently on display. When you order books at the meeting, there are no shipping costs. We will again offer "buy one, get one free."

#### **Future Meetings**

**MAA-NJ.** The Spring 2016 MAA-NJ Section meeting will be held at William Paterson University, Saturday, April 16, 2016. The Fall 2016 MAA-NJ Section meeting will be a joint meeting with EPaDel (the Eastern Pennsylvania/Delaware section) at Villanova University, Saturday, November 12, 2016.

**GSUMC.** The Garden State Undergraduate Mathematics Conference (GSUMC) will be held in conjunction with the Spring Meeting of the NJ Section at William Paterson University. The conference will include poster and oral presentations sessions for undergraduate students, as well as a team mathematics-problem competition. There are many opportunities for faculty to participate in coorganizing the conference. Contact david.trubatch@montclair.edu to volunteer. For additional details see the GSUMC web site: http://sections.maa.org/newjersey/GSUMC.html.

**National MAA Meeting.** The 2016 Joint Mathematics Meeting will be in Seattle, WA, January 6-9.

MathFest. The MAA will hold its 2016 MathFest in Columbus, OH, August 3 – 6.

### Call for Contributed Papers and Lunch Table Discussion Topics for the Spring 2016 MAA-NJ Meeting

There will be two special contributed paper sessions. All papers will be reviewed by the organizers. Please submit a title, three- to four-sentence abstract, and one-page description in MS Word format by February 2, 2016 to the session organizer.

- 1. Preparing Students for College Calculus: Spotlighting Successful Precalculus Programs. Organizer: Tom Hagedorn, The College of New Jersey, hagedorn@tcnj.edu.
- 2. **Statistics: Practice and Pedagogy** (with preference for presentations following the Mathematics Awareness Month 2016 theme: *The Future of Prediction*). Organizer: Dexter Whittinghill , Rowan University, whittinghill@rowan.edu.

MAA members interested in leading a Lunch Table Discussion at the Spring 2016 meeting are asked to submit their proposals to Theresa C. Michnowicz, New Jersey City University, tmichnowicz@njcu.edu, by **February 2, 2016.** 

### Call for Nominations for the MAA-NJ Award for Distinguished College or University Teaching

The MAA-NJ Section Distinguished Teaching Award Selection Committee is seeking nominations for the 2016 award. Please consider nominating an inspiring, respected, or influential deserving colleague for this prestigious award. Nomination information is posted at http://www.maa.org/newjersey. For additional information you may contact Zhixiong Chen (Secretary, MAA-NJ) at zchen@njcu.edu. Nominations are due by November 20, 2015.

#### **Social Media Information**

A message from social media director Grace Cook, Bloomfield College. Check us out!

Email: maanj.socialmedia@gmail.com

Facebook: https://www.facebook.com/maanewjersey

Instagram: https://instagram.com/maanewjersey
Twitter: https://twitter.com/maanewjersey

#### **MAA-NJ Committees**

**Awards Committee:** Carol Avelsgaard, Middlesex County College; Bonnie Gold, Monmouth University; Thomas Hagedorn, The College of New Jersey; Hieu Nguyen, Rowan University; Elizabeth Uptegrove (chair), Felician University; Dexter Whittinghill, Rowan University.

**Nominating Committee:** Larry D'Antonio, Ramapo College of New Jersey; Thomas Hagedorn, TCNJ; David Marshall, Monmouth University; Tatyana Stepanova, Raritan Valley Community College.

**Teaching Award Committee:** Thomas Hagedorn, The College of New Jersey; Bonnie Gold, Monmouth University (chair); Brian Hopkins, Saint Peter's University; Sarita Nemani, Georgian Court University; Diana Thomas, Montclair State University. **Selection Committee for Contributed Papers:** Srabasti Dutta, Ashford University; Theresa Michnowicz (ex officio), New Jersey City University; Kathy Turrisi, Centenary College; Chengwen Wang (chair), Essex County College.

Organizing Committee: MAA-NJ: Zhixiong Chen, New Jersey City University; Karen Clark, The College of New Jersey; Grace Cook, Bloomfield College; Larry D'Antonio, Ramapo College; Kaaren Finberg, Ocean County College; Jana Gevertz, The College of New Jersey; Bonnie Gold, Monmouth University; Thomas Hagedorn, The College of New Jersey; Zachary Kudlak, Monmouth University; Aihua Li, Montclair State University; David Marshall, Monmouth University; Theresa C. Michnowicz, New Jersey City University; Sarita Nemani, Georgian Court University; Linda Ritchie, Centenary College; Tatyana Stepanova, Raritan Valley Community College; Dirck Uptegrove, Alcatel-Lucent; Elizabeth Uptegrove, Felician University; Paul von Dohlen, William Paterson University; Jonathan Weisbrod, Rowan College at Burlington County.

NJAMTE: Maria DeLucia, Middlesex County College.

**Hosting Committee:** Louis Beaugris (co-chair), Reva Narasimhan (co-chair), George Avirappattu, Terry Fung, Susan Hahn, Chihiro Oshima, Eshrat Sahafian, Tom Walsh, Wolde Woubneh, and Pablo Zafra, Kean University.

#### **Notices**

**Congratulations**. Congratulations to past MAA-NJ Governor Bonnie Gold on being awarded the MAA's Meritorious Service Award at MathFest this summer. Past Meritorious Service Award recipients from the New Jersey section:

2010 Amy Cohen	Rutgers University
2005 Barbara Osofsky	Rutgers University
2000 Sr. Stephanie M. Sloyan	Georgian Court College
1995 Theresa C. Michnowicz	New Jersey City University
1990 Henry O. Pollak	Bell Labs
1985 Emory Starke	Rutgers University

**Dinner Honoring the Invited Speakers**. The Section will honor the invited speakers at dinner following the meeting. Everyone is cordially invited.

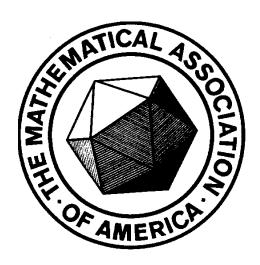
**Acknowledgments**. MAA-NJ and the NJAMTE thank the School of Mathematical Sciences of Kean University for their kind hospitality in hosting the meeting.

We thank Bahman Kalantari and Hyman Bass for donating to the silent auction autographed copies of their books, *Polynomial Root-Finding and Polynomiography* and *I, Mathematician* (a compilation, with Chapter 11 authored by Dr. Bass), respectively.

We also thank Princeton University Press and XYZ Textbooks for their generous donations for silent auction and door prizes.

NJAMTE Call for Papers. The New Jersey Association of Mathematics Teacher Educators invites contributed papers (15 – 25-minute talk plus 10 – 15-minute discussion) at its 2016 meeting on Friday, June 10 at The College of New Jersey. Any talk about research results, professional development, or issues of concern to mathematics teacher educators will be considered. For details, see http://bit.ly/njamte or contact Maria DeLucia at MDeLucia@middlesexcc.edu.

Join the MAA! http://www.maa.org/membership/join\_main.html



#### **MAA-NJ Section Officers**

**Governor** Hieu Nguyen, Rowan University

Chair Tom Hagedorn, The College of New Jersey

**Chair-Elect** Karen Clark, The College of New Jersey

**Vice-Chair for Speakers** Aihua Li, Montclair State University

Vice-Chair for Innovations David Marshall, Monmouth University

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