Vectors

The Newsletter of the Mathematics Department at Rowan University

Chair's Corner

A belated "welcome back" to all of you. I am now into my second full year as chair, and not a lot has changed. It continues to be a wild ride, with the biggest bugaboo being hiring, both on- and off-cycle. The positive news is that this certainly has been a banner year in hiring.

The increase in three full-time, tenure-track positions is the largest numerical increase in such positions since Fall '96. It was then when Hassen, Nguyen, and Whittinghill arrived "on the coattails of Engineering." With the increase in six new faces (see page 2), we likely have the largest percentage increase in new ¾- and full-time people as well. Hey, let's not forget the adjuncts! We have gone from 26 in Fall 2012 to essentially 40 this fall, covering 55 sections. Many of our adjuncts are grads from our M.A. program. Special thanks go to all those who have helped the Department with the hiring since last fall. I am looking forward to the results of your work!

The number of students just keeps rising, and so does demand on Mathematics. The Fall 2013 Tenth-Day Snapshot has us teaching more student FTEs than any other department, more than the entire College of Engineering and equal to about half of the FTEs for the College of Education. I know we will be hiring more people over the coming years. If Rowan plans to grow, we will have to grow, too.
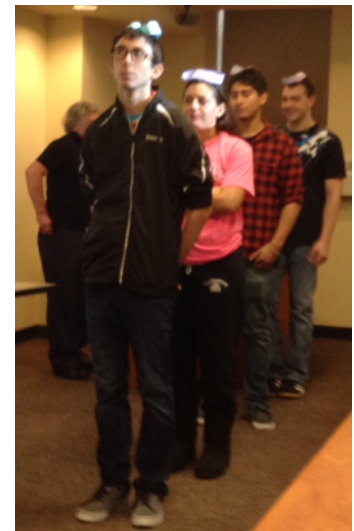
- Dex Whittinghill

ROWAN UNIVERSITY MATHEMATICS LEARNING COMMUNITY WELCOMES 60 FRESHMEN IN FALL 2013

Mathematics Learning Community participants listen to a presentation by Dr. Marcus Wright entitled, "Hat Tricks, Card Tricks, and Information Theory."

The Mathematics Department welcomed 60 new freshmen majors in Fall 2013. Thirty-five of these freshmen are living together in a residential learning community located in Chestnut Hall. Freshmen math majors are also encouraged to take Pre-Calculus, Calculus I, Symbolic Logic, Discrete Math, and Calculus II together in special learning-community sections of these courses. A Fall 2013 lecture series organized by Mathematics Learning Community Director Christopher Simons was designed to introduce participants to the Rowan math major, department faculty, and the field of mathematics in general. Math faculty who have given presentations to the learning community this

Dr. Marcus Wright leads Brian Gensel, Bridgette Alessandrini, and two other students in a Mobius hat trick.

semester include Ron Czochor, Christopher Simons, Janet Caldwell, Tom Osler, Dexter Whittinghill, and Marcus Wright.

A RECORD NUMBER OF NEW FACULTY JOIN THE MATHEMATICS DEPARTMENT

Norman Beil   Nasrine Bendjilali   Ira Fine   Bethany Gummo   Bill Smith   Elizabeth Volz

The Rowan Mathematics Department welcomed 21 new faculty members during the Fall 2013 semester.

Norman Beil re-joins the department as a 3/4-time Assistant Professor of Mathematics. He received his Ph.D. in Applied Mathematics from the University of Virginia and has taught there the past few summers. He is interested in using differential equations to model the compression and recovery of masses of textile fibers. In his spare time, Norman likes to find new places to hike and new restaurants to dine at. He also likes to cook.

Nasrine Bendjilali joins us as a tenure-track Assistant Professor of Biomathematics. She earned an M.S. in Mathematics and a Ph.D. in Applied Mathematics from Lehigh University. She has worked as an associate specialist in the Division of Medical Genetics at the University of California, San Francisco (UCSF) and, most recently, as a postdoctoral fellow at the Center for Cerebrovascular Research at UCSF. Her research interests include genetic factors contributing to risk and development of complex human traits, genome-wide association and candidate gene studies, population genetics, design and analysis of high-throughput genomic data, and multiple hypothesis testing procedures and their application in the biomedical sciences.

Ira Fine '74*95*01 is teaching Contemporary Math as a 3/4-time Select Start instructor during the Fall semester. Ira is unique in that he has a B.A. in Mathematics from Glassboro State College, an M.A. in Mathematics Education from Rowan College of New Jersey, and an M.A. in Mathematics from Rowan University. He is interested in fractal geometry and also how geometry relates to origami.

Ira's website (*http://www.flickr.com/photos/sunmaid1/*) shows over 300 origami models that he has folded.

Bethany Gummo is a newly hired tenure-track Instructor of Statistics. She has a B.S. in Chemical Engineering from Widener University, an M.B.A. from Baldwin-Wallace College, and an M.S. in Applied Statistics from Villanova University. She has sixteen years of experience working for Fortune 500 companies including BP Oil, Rubbermaid, and K-Mart followed by many years working as an independent Internet researcher. Bethany is currently teaching Elementary Statistics, Statistics I, and Statistics II at Rowan and has previously taught at several other area colleges. Her teaching interests include parametric statistics, nonparametric statistics, and multiple regression.

Bill Smith *72 joins us as a 3/4-time Instructor of Math Education. He has a B.S. in Mathematics from Dickinson College and a M.A. in Teaching Mathematics from Glassboro State College. He worked from 1966-2002 in the Haddonfield school district. In addition to teaching mathematics there for 33 years, he also served as Math Department Chair, Math Supervisor, and Director of Curriculum and Instruction. He has served on numerous New Jersey Math Standards panels and as a consultant to several school districts in southern New Jersey.

Elizabeth Volz *12 is teaching Contemporary Math as a 3/4-time Select Start instructor during the Fall semester. She received her Bachelor's degree from Swarthmore College and her Master's degree from Rowan. She has five children, two of whom are current Rowan undergraduate students. Her favorite areas of mathematics include number theory, modern algebra, ring theory, and group theory.

New Faculty... (*Continued from page 2*)

Ik-Jae Lee, who was hired as a 3/4-time assistant professor last year, moved into a tenure-track mathematics instructor position this year. (Ik-Jae was profiled in Vol 6, No. 1 of *Vectors*.)

Fourteen new adjunct faculty also joined the department, including several recent graduates of our Master's degree program. New adjuncts include *Fang-Chi (Chloe) Benson *13, Richard Connor, Adam Davidson *12, Felista Kahora, Jennifer Hoxworth '11*13, Charles Kish, Vincent Mateescu, Shamima Nasrin, Nannimangalam Prabhakar, Brian Reed, David Rowan '11, Wayne Rulon '00*11, Stacie Schade*, and *Maria Tavener *13*.

Adjunct Spotlight: Vincent Mateescu

Vincent received a bachelor's degree in mathematics and music from Rutgers University in 2005. He then earned two master's degrees, one in mathematics education from Rutgers in 2006 and another in mathematics from the University of New Hampshire in 2012. In his limited spare time, Vince enjoys the basics: reading, writing, exercise, and music. He is interested in exploring methods for incorporating music theory into mathematics instruction.

ROWAN UNIVERSITY TO HOST SPRING 2014 MAA-NJ MEETING AND GARDEN STATE UNDERGRADUATE MATHEMATICS CONFERENCE

The Spring 2014 MAA-NJ meeting will be hosted by Rowan University on April 5, 2014.

There will be four special contributed paper sessions at this meeting. Interested contributors should submit a title, 3- to 4-line summary, and one-page abstract in Microsoft Word format to the organizer of the session (listed below) by February 12, 2014. Sessions will include:

1. **History of Mathematics** Organizer: Larry D'Antonio, Ramapo College (ldant@ramapo.edu)

2. **Mathematics, Magic, and Mystery** (2014 Math Awareness topic celebrating the centennial of the birth of Martin Gardner) Organizer: Paul von Dohlen, William Patterson University (vondohlenp@wpunj.edu)

3. **STEM Programs** Organizer: Chengwen Wang, Essex County College (wang@essex.edu)

4. **Statistics: Practice and Pedagogy** Organizer: Dex Whittinghill, Rowan University (whittinghill@rowan.edu)

All papers will be reviewed by the listed organizers and the selection committee.

MAA members interested in leading a Lunch Table Discussion at the Spring 2014 meeting are asked to submit their proposals to Theresa C. Michnowicz, New Jersey City University (tmichnowicz@njcu.edu) by February 1, 2014.

Olcay Ilicasu is chairing the local organizing committee for the Spring 2014 MAA-NJ meeting and is also a co-director of the Garden State Undergraduate Mathematics Conference (GSUMC) that will be held in conjunction with this meeting. Information about the GSUMC and its associated competition can be found at http://sections.maa.org/newjersey/GSUMC.html. Anybody willing to help Olcay with this immense task should contact her at ilicasu@rowan.edu.

KAREN HEINZ HEADS MATHEMATICS AND SCIENCE PARTNERSHIP PROGRAM

Associate Professor **Karen Heinz** was recently awarded a one-year $367,700 grant from the Office of Science, Technology, Engineering, and Mathematics (STEM) at the New Jersey Department of Education to fund the Rowan Mathematics and Science Partnership (MSP) teacher professional development program.

Karen Heinz

The partners in this program are the Rowan University Department of Mathematics and the following southern New Jersey school districts: Cherry Hill, Penns Grove-Carneys Point, Pine Hill, Upper Deerfield Township, Washington Township, Willingboro, and Woodbury. Dr. Heinz is the Project Director.

The primary goals of the MSP program are (1) to increase student achievement in mathematics in grades K-5 by providing a professional development program aimed at increasing their teachers' content knowledge and (2) to increase teachers' understanding of the Common Core State Standards for Mathematics (CCSS-M) that have been adopted by New Jersey and 44 other states.

The program began with a three-week Summer Institute in July 2013. During this institute, twenty-four K-5 teachers took two 3-credit graduate-level mathematics courses (Math 03600: Topics in Elementary Mathematics and Math 01528: Mathematical Modeling and Algebraic Reasoning). These same 24 teachers, along with 3 additional teachers, are currently taking another 3-credit graduate course (Math 01523: Selected Topics in Mathematics: Geometry and Proportional Reasoning). During the Spring 2014 semester, the 27 teachers in the cohort will complete their final graduate course (Math 01523: Selected Topics in Mathematics: Measurement, Data, and Probability).

In addition to increasing the mathematics content knowledge of K-5 teachers, these four courses can be used by the teachers to partially fulfill the requirements for an endorsement to teach middle school mathematics (i.e., the Elementary with Subject Matter Specialization: Mathematics Grade 5-8 Standard Certificate).

ALUMNI NEWS

Brandon Maggio '13 is working full-time at Selective Insurance Company of America as an actuarial assistant in their Personal Lines department.

Ozkan Keskinkaya *13 moved to Fayetteville, NC, where he is teaching Math II (geometry) at 71st High School.

Michael Czahor '13 is a first-year IGERT Ph.D. fellow at Iowa State University. He is studying Wind Energy Science Engineering Policy (WESEP) and Statistics. He is using field data from wind turbines to create statistical models.

Jillian Hixon '13 is student teaching at Hammonton High School this Fall. She is also currently a substitute teacher for the Lenape Regional High School District.

Kyra Patel '13 is enrolled in the Occupational Therapy Master's degree program at Temple University.

Lee Collins *11 married Meghan O'Donnell in October 2013. They met while both were undergraduates at Richard Stockton College. Lee is a tenure-track assistant professor of mathematics at the County College of Morris.

Jonathan Weisbrod '10*12 is a lecturer of mathematics at Burlington County College, where he previously was a graduate-student teaching intern. He has already started up a math team, advised a student research project, and brought students to MAA-NJ meetings. The accompanying photo of Jonathan appeared in the *Philadelphia Inquirer*.

STUDENT AND FACULTY NEWS

Jeffrey Creighton, *Dr. Abdul Hassen*, and *Dr. Hieu Nguyen* are shown here playing volleyball at an end-of-the-year picnic held at Washington Lake Park in May 2013 for the research students of Drs. Hassen and Nguyen.

Nora Buggy and **Phuong-Trang Vu** gave a talk entitled, "Recurrence Relation of Restricted Partition," at the Rowan Mathematics colloquium in November 2013. This talk was based on research they conducted during spring and summer 2013 under the guidance of **Dr. Abdul Hassen**. Their work was supported by the Math Department with CGCE summer funds.

Daniel Bittner and **Long (Winston) Cheong** gave a Rowan Mathematics colloquium talk in November 2013 entitled, "Converging on the Area of the Mandelbrot Set." At the same colloquium, **Brooke Logan** gave a talk entitled, "Scanning for Complementary Code Matrices." All three are research students advised by **Dr. Hieu Nguyen**. These students will also be making poster presentations at the 2014 Joint Mathematics Meeting in Baltimore. Their research was supported by the Math Department with CGCE summer funds.

Dr. Janet Caldwell is a candidate for President-Elect of the Association of Mathematics Teacher Educators (AMTE). The election is being held online during November 2013.

Dr. Olcay Ilicasu is currently serving on the Executive Board of the New Jersey Chapter of the Mathematics Association of America (MAA-NJ). She was the Organizer of Contributed Papers for the Fall 2013 MAA-NJ meeting held at Rutgers University. She is also chairing the local organizing committee for the Spring 2014 MAA-NJ meeting and co-directing the Garden State Undergraduate Conference, both of which will be held at Rowan University in April 2014.

CONGRATULATIONS TO 2013 MATHEMATICS MASTER'S DEGREE RECIPIENTS

Our newest Master's degree graduates include (*shown from left to right*) Jennifer Hoxworth, Tristan Moran, Ozkan Keskinkaya, Maria Tavener, and Chloe Benson. Jennifer, Maria, and Chloe are teaching as adjunct faculty in the Rowan Math Department this Fall.

Upcoming Events

January 15-18, 2014

Joint Mathematics Meeting in Baltimore, MD

April 5, 2014

Spring 2014 MAA-NJ Meeting at Rowan University.
(Abstracts due February 12, 2014)

April 5, 2014

11th Annual Garden State Undergraduate Mathematics Conference and Competition at Rowan University

April 25, 2014

Rowan University STEM Student Research Symposium in the Eynon Ballroom of the Chamberlain Student Center

WOODROW WILSON TEACHING FELLOWSHIP AT ROWAN UNIVERSITY

The Woodrow Wilson New Jersey Teaching Fellowship program at Rowan University is seeking college seniors, college graduates, and career changers with backgrounds in STEM fields (science, technology, engineering, or math) to teach in high-needs New Jersey high schools. Coursework begins in May 2014 and should conclude during the Summer 2015 semester.

Fellows will participate in a full-time, cohort-based program which offers rigorous disciplinary and pedagogical preparation, extensive clinical experience and ongoing mentoring. Training will take place both on Rowan's Glassboro campus and in southern New Jersey school districts (Bridgeton, Millville, and/or Vineland). Upon successful completion of the program, Fellows will receive a Master's degree in STEM Education from Rowan University and, simultaneously, a NJ secondary teaching certificate in Mathematics or Physics. Fellows must commit to teaching at least three years in a high-needs urban or rural NJ school district.

The fellowship program provides a $30,000 stipend, a 57% discount on tuition (and no fees), admission to the Rowan University STEM Education Master's degree program, training on campus and in southern New Jersey high schools, support and mentoring throughout the three-year teaching commitment, and lifelong membership in a national network of Woodrow Wilson Fellows.

A qualified applicant should:
• demonstrate a commitment to the program and its goals;
• have U.S. citizenship or permanent residency;
• have attained, or expect to attain by June 30, 2014, a bachelor's degree from an accredited U.S. college or university;
• have majored in and/or have a strong professional background in a STEM field; and
• have achieved a cumulative undergraduate grade point average (GPA) of at least 3.0 on a 4.0 scale (negotiable for applicants from institutions that do not employ a 4.0 GPA scale).

For more information, application deadlines, or to apply online, see http://woodrow.org/fellowships/ww-teaching-fellowships/new-jersey/. You may also contact the Rowan University Project Director, Dr. Eric Milou (milou@rowan.edu).