Vectors

The Newsletter of the Mathematics Department at Rowan University

MATH DEPARTMENT CONGRATULATES STUDENT AWARD RECIPIENTS

The Rowan Mathematics Department recognized our top students during the annual Awards Luncheon held on April 27. Numerous students were also honored for their participation on the Rowan Math team and for conducting undergraduate research (see related articles).

Long (Winston) Cheong was awarded the Scholarship for Outstanding Junior Mathematics Major.

Alyssa Gautieri received the John Sooy Award. This scholarship honors an outstanding junior pursuing a double major in mathematics and education.

Brooke Logan '15 was honored with the James M. Shafer Excellence in Mathematics Medallion Award. She also received the Senior Recognition Award on the basis of her mathematical achievements both inside and outside the classroom.
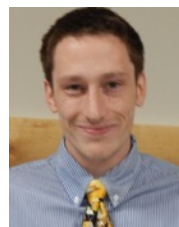
Students received certificates recognizing their accomplishments. Here, Department Chairperson Dexter Whittinghill congratulates James Zulker.

ROWAN UNIVERSITY MATH TEAM FINISHES AN ACTIVITY-FILLED YEAR

Congratulations to all of the Math Team members who represented Rowan at competitions during the past academic year.

Long (Winston) Cheong, Jennifer Crawford, Alexander Drumm, and *Brooke Logan* participated in the prestigious [William Lowell Putnam Mathematical Competition](#) in December 2014.

We also fielded two teams at the New Jersey Undergraduate Mathematics competition hosted by Monmouth University on April 11. Team 1, comprised of *Stanimir Genov, Brooke Logan,* and *Jeffrey Maurer*, finished 13th overall. Team 2 – *Long (Winston) Cheong, Jennifer Crawford,* and *Dante Gates* – finished in 12th place. *Jennifer Crawford, Dante Gates*, and *Brooke Logan* also gave oral presentations at the Garden State Undergraduate Mathematics Conference held in conjunction with this competition.

Math Team members who volunteered as tutors in the Mathematics Learning Center during this past academic year included *Christian Beauvais, Melissa Canavan, Long (Winston) Cheong, Donna DiMatteo, Nicholas Felker, Keith Ferrante, Stanimir Genov, Stephanie Gomez, Brooke Logan, David Miller, William Neuhaus, Ashley Shepp, Aaron Sorin, Freha Tahir, Racquel Thompson, Phuong-Trang Vu, Yong Xian Wu,* and *James Zulker*.

Other Math Team events this spring included a game night and the annual bowling night. The team also reached the championship round of the Rowan SGA March Madness competition on Facebook and ran a booth at the Philadelphia Science Carnival on the Parkway in May.

Students interested in joining the Math Team should drop by the Math Learning Center or contact one of the newly elected 2015-2016 officers: *Ashley Shepp (president), Stephanie Gomez (vice president), Angel Ramos (senator), Jeffrey Maurer (treasurer),* or *Stanimir Genov (secretary)*.

RowanSGA
March Madness
CHAMPIONSHIP

Math Team

MATH TEAM

STUDENTS INDUCTED INTO THE NEW JERSEY XI CHAPTER OF PI MU EPSILON

New members of the New Jersey Xi Chapter of Pi Mu Epsilon include (front row, from left to right): Jacqueline Prior, Olivia Liedtka, Valerie Gambino, Jessica Simber, John Kumpf; (back row, from left to right): Danny Lamberson, Edward Hodan, Mitchell Ciecierski, Kyle Pasquino, James Rosado, and Kyron Johnson.

We proudly inducted 23 students into the New Jersey Xi chapter of Pi Mu Epsilon (PME) at Rowan University on April 27. PME, the National Honorary Mathematics Society, is dedicated to promoting mathematics and recognizing students who successfully pursue mathematical understanding.

Our new inductees include *Mitchell Ciecierski, Tara Craig, Russell D'Agostino Jr., Tia Drew, Alexander Drumm, Adrian Echevarria, Ghazal Eghbali-Afshar, Valerie Gambino, Edward Hodan, Kyron Johnson, John Kumpf, Danny Lamberson, Olivia Liedtka, Gina Marino, Kyle Pasquino, Bridget Pipitone, Jacqueline Prior, Israt Retomoni, James Rosado, Ashley Shepp, Jessica Simber, Salvador Teves,* and *Annemarie Webb.*

Inductees who have not yet graduated are invited to serve in leadership roles as PME strives to organize new events next year.

PME membership qualifications include the following:

- Undergraduate students who have completed at least the equivalent of two semesters of calculus and two additional courses in mathematics, at or above the calculus level, all of which lead to the fulfillment of the requirements for a major in the mathematical sciences. In addition, such students must have maintained a grade point average equivalent to that of at least 3.0 on a 4 point scale, both for all courses that lead to fulfillment of requirements for a major in the mathematical sciences, and also for all courses that lead to fulfillment of requirements for an undergraduate degree.

- Graduate students whose mathematical work is at least equivalent to that required of qualified undergraduates, and who have maintained at least a B average in mathematics during their last school year prior to their election.

- Members of the faculty in mathematics or related subjects.

- Any persons who have achieved distinction in a mathematical science.

Contact the faculty advisor, Marcus Wright (*wright@rowan.edu*), for more information about our PME chapter.

ALUMNI NEWS

Eric Jones '10 will be starting a tenure-track mathematics position at Rowan College at Gloucester County this fall. He will primarily be teaching in the Rowan Choice Program on the Rowan University campus.

Jonathan Weisbrod *12 was named Liason Coordinator for MAA-NJ. Also, he married *Carole Bryan* in June 2015.

Courtney Quinn '13 has been offered an Early Stage Researcher position at the University of Exeter. She will be studying time delays in climate models as she works towards her Ph.D.

Brooke Logan '15 will begin a Ph.D. program in mathematics at Rutgers University this fall.

FACULTY NEWS

Richard Connor organized a trip to the National Museum of Mathematics (MoMath) for his Calculus I class in April 2015. They attended a talk by John Allen Paulos entitled, "A Mathematician Reads the Newspaper (and Its Descendants."

Laura Schultz was a Table Leader at the June 2015 Advanced Placement (AP) Statistics reading held in Kansas City. She also had the honor of giving a presentation during Best Practices Night.

Chris Lacke was named to the 2015 Wall of Fame for Teaching Excellence at the Rowan Faculty Center.

STUDENT NEWS

Long (Winston) Cheong will be participating in a REU in Mathematics and Computational Science at Fairfield University this summer. His research relating to Hennings and Chern-Simons Witten three-variant manifolds will be mentored by *Dr. Steve Sawin*.

Dante Gates and **Dr. Hieu Nguyen** presented a poster entitled, "An Outside Analysis of the Mandelbrot Set," at the 2015 Rowan STEM Symposium.

Jennifer Crawford and **Dr. Hieu Nguyen** presented a poster entitled, "Basis Polynomials of the Prouhet-Thue-Morse Sequence," at the 2015 Rowan STEM Symposium.

Isaac Muck (*pictured below*) presented a poster at the 2015 Rowan STEM Symposium entitled, "Similarity Functions in Practical Use with a Partitioning Around Medoids (PAM) Algorithm." Isaac also presented his research at the 2015 New Jersey Big Data Alliance Symposium. His faculty advisors were *Drs. Vasil Hnatyshin* (computer science) and **Uma Thayasivam**.
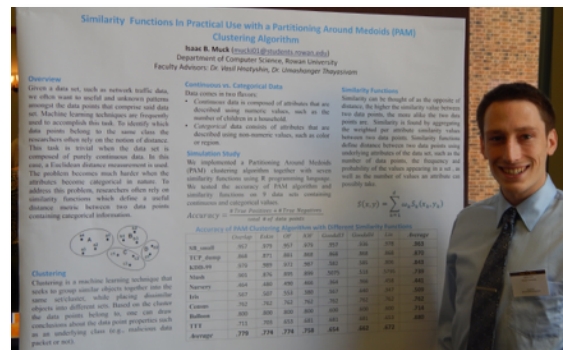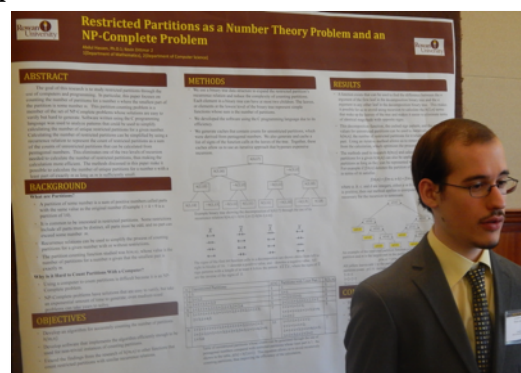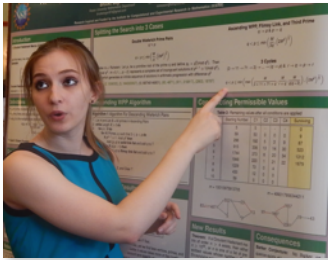
Kevin Dittmar (*shown below*) presented a poster entitled, "Restricted Partitions as a Number Theory Problem and an NP-Complete Problem," with **Dr. Abdul Hassen** at the 2015 Rowan STEM Symposium.
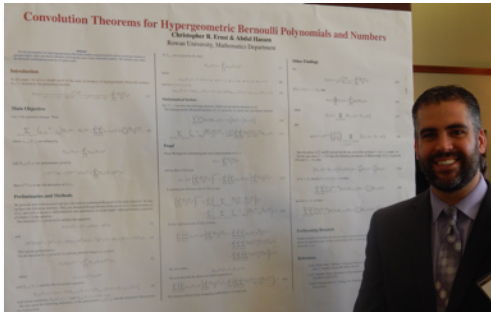
STUDENT NEWS, CONTINUED
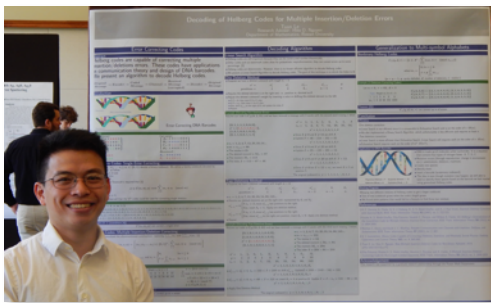

Brooke Logan presented a poster entitled, "Possible Dimensions for Circulant Hadamard Matrices," at the 2015 Rowan STEM Symposium. Her research was mentored by *Dr. Michael Mossinghoff* of Davidson College.

Graduate student **Christopher Ernst** *(pictured below)* and **Dr. Abdul Hassen** presented a poster entitled, "Convolution Theorems for Hypergeometric Bernoulli Polynomials and Numbers," at the 2015 Rowan STEM Symposium.
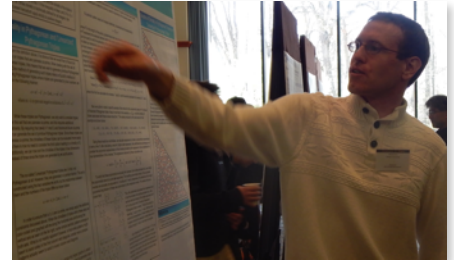

Graduate student **Tuan Le** *(shown below)* presented a poster entitled, "Decoding of Helberg Codes for Multiple Insertion/Deletion Errors," with **Dr. Hieu Nguyen** at the 2015 Rowan STEM Symposium.
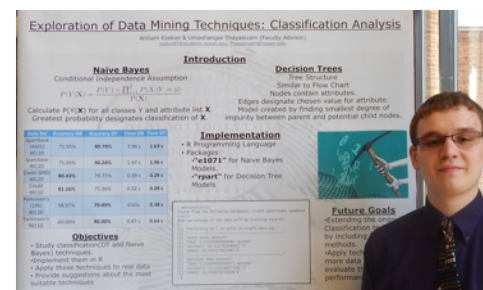

Graduate student **James Rosado** *(pictured at right)* gave a poster presentation with his faculty research mentor **Dr. Tom Osler** at the 2015 Rowan STEM Symposium entitled, "A Marriage of Taylor and Fourier Series to Generate Definite Integrals."

Graduate student **Christopher Walker** presented a poster entitled, "Periodic Chiral Patterns in Pythagorean and Linearized Pythagorean Triples," at the 2015 Rowan STEM Symposium. His research advisors were **Drs. Christopher Simons** and **Marcus Wright**.

William Ezekiel and **Dr. Uma Thayasivam** presented a poster entitled, "Exploration of Data Mining Techniques: Classification Analysis," at the 2015 Rowan STEM Symposium.
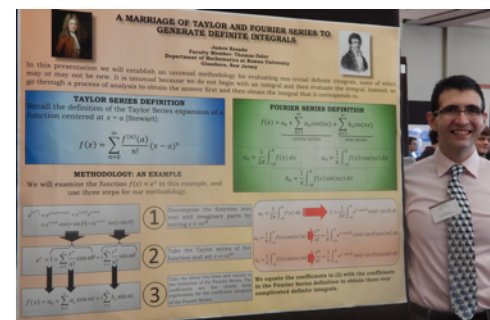

Scott Boyce presented a poster entitled, "Random Forest Implementation with Microsoft Excel Integration," at the 2015 Rowan STEM Symposium. Scott also presented his research at the 2015 New Jersey Big Data Alliance Symposium. His research was supervised by *Drs. Vasil Hnatyshin* (computer science), **Uma Thayasivam** (math)*, and *Serhiy Hnatyshyn* (Bristol-Myers Squibb).
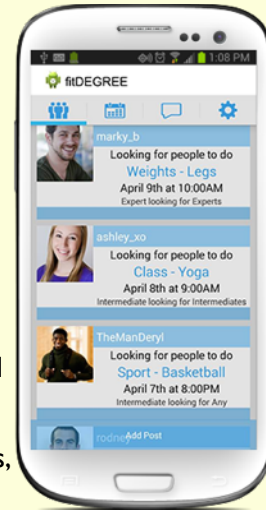
Student Spotlight: Nick Dennis

Nick Dennis won first place in the 2015 William G. Rohrer Business Plan Competition for *fitDEGREE*. He was also a finalist in this year's Elevator Pitch Competition.

What better motivation is there for living a fit lifestyle than having a partner to keep you accountable? However, what happens when you can't find a friend to give you that motivation? Nick pondered this question during summer training at the Rowan Recreational Center when the employees were asked to brainstorm ideas for getting more foot traffic through the Rec facilities, and what started as a simple concept turned into an award-winning business plan. *FitDEGREE*, "The Social Network for the Fitness Community," makes exercise a fun and social experience by providing users a digital space to find a partner or group within their own college, gym, or zip code. Nick's *fitDEGREE* mobile app is scheduled to debut this fall.

Nick plans to graduate in December 2015 with a B.S. in Mathematics, a concentration in Statistics and Operations Research, and a minor in Business Administration. In his spare time, Nick is studying for his actuarial exams and training as a CrossFit athlete.

CONGRATULATIONS TO FALL 2014 UNDERGRADUATE DEANS' LIST HONOREES

The following students majoring in Mathematics were named to the Undergraduate Dean's List in Fall 2014 in recognition of achieving a GPA of 3.45 or higher for at least 12 credit hours. Those students whose names are in boldface type were also named President's Scholars of Excellence for achieving a perfect 4.0 GPA in Fall 2014.

Brigette Alessandrini, **Christopher Bailey**, Jessica Beal, Michele Borgesi, Michael Bornstein, Melissa Canavan, Long (Winston) Cheong, **Nicole Chermark**, Heather Cicero, Mitchell Ciecierski, **Jason Cornog**, Nicole Croge, **Russell D'Agostino**, Erin D'Ascenzo, Michael Davies, Nicholas Dennis, Christopher Diem, Matthew Dieterle, **Amanda Dixon**, Marc-gregory Dixon, Aljeanette Downing, **Alexander Drumm**, Adam Fincke, Derek Foglein, Carlina Fuscellaro, Valerie Gambino, **Riley Gartland**, Dante Gates, Alyssa Gautieri, Mary Gehring, Norman Gibson, **Kathryn Gordon**, **Alexandra Grote**, Amanda Halloran, Sean Halloran, Amber Howarth, Kimberly Johnson, Glen Kartalis, Nicholas Kides, **Charles Kiersznowski**, John Kumpf, Alana LaMorte, Stephen Lang, Jacob Larson, Steven Layton, Ashley Lesch, Brooke Logan, Adrianna Macaro, Kathleen Macintosh, Gina Marino, Kelsey Miller, Tara Miller, **Michael Moore**, Jessica Moratelli, Johnathan Morris, Isaac Muck, Allie Nickerson, Daniel Offenbacker, Raymond Okuda, Zachary Ozalis, Marcus Patterson, Ashley Payne, Miranda Pellicciotti, Antonio Pugliese, Tisa-Nicole Riccardi, Amber Roscetti, **Meg Ruesch**, Meghan Ryan, Omar Samkough, **Nicole Santoro**, Ashley Santos, **Robert Scalley**, Jessica Simber, **Devon Sozio**, Cynthia Sternotti, Taylor Sternotti, **Victoria Sucharski**, Caitlyn Szymczak, **Amy Timko**, Sarah Trumbull, Stephanie Van Twuyver, Mark Ventrella, Corey Vollmer, Courtney Waring, Annemarie Webb, Megan Welch, Ryan West, Sarah White, and Carolann Zavorskas.

Got News?

Please send any photos or news items to the newsletter editor (schultzl@rowan.edu) for inclusion in the next issue of *Vectors*.

HIGHLIGHTS FROM THE SPRING 2015 SOUTH JERSEY MATH ALLIANCE MEETING

The Rowan Math Department hosted our annual spring South Jersey Math Alliance (SJMA) meeting on May 18. Presentations focused on relating the new Common Core standards to math and statistics education. Attendees included high school teachers from several area school districts, as well as Rowan students and faculty. **Bill Smith** *(shown at left)* opened the meeting with an interactive session entitled, "Classroom Practices to Help Students Develop CCSSM Behaviors." After lunch, **Laura Schultz** led a session entitled, "Using Simulation to Enhance Conceptual Understanding of Statistical Inference." **Jay Schiffman** concluded the meeting with a session entitled, "Engaging Problems that Illustrate Many of the Standards for Mathematical Practice."

Upcoming Events

August 8-13, 2015
Joint Statistical Meetings in Seattle, WA

August 5-8, 2015
MAA MathFest in Washington D.C.

September 1, 2015
Start of Fall 2015 classes

October 12, 2015
Spring 2016 course registration begins

November 14, 2015
Fall MAA-NJ Meeting at
Kean University

January 6-9, 2016
Joint Mathematics Meetings in Seattle, WA
(Abstract Deadline: September 22, 2015)

SPRING ALUMNI EVENT CELEBRATES LARRY HOWE

The Rowan Mathematics Department hosted its first-ever Spring Alumni Event on June 11. Alumni and faculty gathered to celebrate the many accomplishments of Professor Emeritus **Larry Howe** during his 44-year career at Rowan University. Attendees gathered for a buffet dinner in the Eynon Ballroom of the Chamberlain Student Center. Proceeds from this event will go to support our Junior Scholarship fund. Larry is pictured to the right with *Elizabeth Volz *12*.

SCENES FROM THE 2015 GRADUATION BREAKFAST RECEPTION

CONGRATULATIONS TO THE CLASS OF 2015

We welcome the following students to the ranks of Rowan Mathematics Department alumni. Honors as of April 2015 are designated in parentheses as follows: *summa cum laude* (cumulative GPA between 3.85 and 4.00), *magna cum laude* (3.65 - 3.849 GPA), and *cum laude* (3.45 - 3.649 GPA). The list of candidates below also includes students who received their degrees in either August or December 2014.

The following students are candidates for the **Master of Arts (M.A.) degree in Mathematics**: *David Evans Jr., Christopher Walker, Christopher Walsh, Sky Pelletier Waterpeace, Mary Youch*, and *James Zulker*.

Candidates for the **Bachelor of Science (B.S.) degree in Mathematics** include: *Nicholas Bolton* (magna cum laude), *Melissa Canavan* (summa cum laude), *Michael Davies, Nicholas Dennis, James Dixon* (cum laude), *Adrian Echevarria, Brendan Gysbers, Brooke Logan* (summa cum laude), *Isaac Muck, Gina Williams*, and *Carolann Zavorskas* (magna cum laude).

Rounding out our graduates are the following candidates for the **Bachelor of Arts (B.A.) degree in Mathematics**: *David Achinstein, Ghazal Afshar, Evan Bader, Christopher Bailey, Adrienne Barrett* (summa cum laude), *Danielle Blazer, Alicia Boncardo* (magna cum laude), *Carol Boyd, Kyle Bunyard, Se Hyun Chon, Kristie Ciaston, Jordan Clarke, Jason Cornog* (summa cum laude), *Tara Craig, Nicole Croge* (magna cum laude), *Charles Cummings, Russell D'Agostino, Amanda Dixon* (cum laude), *Katherine Emmerling* (magna cum laude), *Keith Ferrante, Adam Fincke* (cum laude), *Norman Gibson* (magna cum laude), *Kathryn Gordon, Bruce Graham Jr., Alexandra Grote* (cum laude), *Zachary Haupin, Eric Hoffmann, Julio Interiano, Charles Kiersznowski* (summa cum laude), *Adrianna Macaro* (cum laude), *Kathleen MacIntosh* (cum laude), *Nicholas Martino, Paul Menders, Samantha Minnella, Michael Moore* (magna cum laude), *Jessica Moratelli, Alejandro Muñiz, Andrea Myers, Adrianne Novak, Patrick O'Donnell, Raymond Okuda, Ashley Payne* (cum laude), *Brandon Peter, Jacqueline Prior, Tisa-Nicole Riccardi* (cum laude), *Meg Ruesch* (summa cum laude), *LeighAnn Ruroede, Lindsey Russo* (cum laude), *Nicole Santoro* (magna cum laude), *Robert Scalley* (magna cum laude), *Brittney Schaffer, Cynthia Sternotti, Victoria Sucharski, J. Scott Summerill* (cum laude), *Dolwyn Underwood, Brittni Van Ostenbridge, Jessica Van Ostenbridge, Mark Ventrella*, and *James Young*.

Commencement photos © by Stephanie Maksin / NJ.com

ALUMNI SPOTLIGHT: MICHAEL RADIN '95

Dr. Michael Radin is currently an Associate Professor of Mathematics at the Rochester Institute of Technology. After graduating from Rowan with majors in Mathematics and Geography in 1995, Michael went on to earn a Ph.D. in Mathematics from the University of Rhode Island in 2001. He fell in love with teaching during his first semester of college while helping other students in his pre-calculus class and soon started working at Rowan's tutoring center. In addition to teaching, Michael has organized sessions on difference equations and applications at AMS meetings and also given presentations at other conferences in the U.S., Canada, and abroad. He has spent several sabbatical leaves and summers teaching at Aegean University on the island of Samos in Greece and also at the University of Latvia. While in Latvia, he gave presentations on the American education system to several schools and helped organize a city-wide, American-style math Olympics in Riga.

Having been born in Moscow before coming to the U.S. as a child in 1983, Michael speaks both Russian and English fluently. He loves to travel and spend time outdoors biking, hiking, skiing, and kayaking. He also enjoys taking landscape photographs and writing poems about nature.

The sea's waves the sunset displays
whose hazy colors they portray.

The waves move as bouncing lights
while the sunset's mood they invite.

The shapes of clouds are branching veins
and the sunset's spirit they retain.

The clouds split as fading streams
and paint the sunset with solar beams.

The waves and clouds conclude the day
whose memories forever stay.

Photograph of the Gulf of Riga and poem by M. Radin '95

ALUMNI SPOTLIGHT: WILLIAM EPPRIGHT III '78

Bill Eppright graduated from Glassboro State College in 1978 with majors in Mathematics and Criminal Justice and went on to earn a Master's degree in Forensic Science from George Washington University in 1986. He began his career with the FBI in 1978 as a fingerprint examiner and subsequently held positions as a budget analyst, cryptoanalyst/ mathematician, and computer analyst before becoming a Special Agent in 1986.

Bill was instrumental in the creation of the FBI's first Evidence Response Team. Over his illustrious career, he has participated in numerous high-profile crime scene investigations and testified at the subsequent trials for cases including the Branch Davidian standoff, the Oklahoma City bombing, the American Embassy and Khobar Towers bombings in Africa, the Wedgewood Baptist Church mass shootings, the Space Shuttle Columbia disaster, and the 9/11 terrorist attacks. He also has served as a Special Agent Bomb Technician, Division Bombing Investigations Coordinator, HAZMAT team member, and certified fingerprint instructor and was assigned to the Dallas/Fort Worth International Airport Resident Agency. He is also a certified General Police Instructor, and he served as a National Academy Counselor for the 182nd session of the FBI's National Academy Program. Bill is currently an adjunct professor at Columbia College teaching advanced courses in terrorism and forensic pathology and writing a book reflecting on his more than 35 years of federal law enforcement experience.

2014-2015 MATHEMATICS DEPARTMENT COLLOQUIUM SERIES

Jay Schiffman coordinated another successful Mathematics Department Colloquium series. As summarized in the table below, presentations were made by department faculty, undergraduate and graduate students, and invited guest speakers. Anyone interested in giving a colloquium presentation during the 2015-2016 academic year should contact Jay Schiffman (schiffman@rowan.edu).

Date	Speaker	Title of Presentation
9-15-14	Dr. Tom Osler, Rowan University Math Department	*A Product of Nested Radicals for the AGM*
9-22-14	Professor Jay Schiffman, Rowan University Math Department	*Exploring Five Integer Sequences Related to the Collatz Problem*
9-29-14	Dr. Hieu Nguyen, Rowan University Math Department	*A New Proof of the Prouhet-Tarry-Escott Problem*
10-13-14	Brooke Logan, undergraduate student, Rowan University Math Department	*Raising the Bound on the Circulant Hadamard Matrix Conjecture*
11-10-14	Chris Walsh, graduate student, Rowan University Math Department	*Fastest Way to Orbit a Charged Black Hole*
11-17-14	Dante Gates, undergraduate student, Rowan University Math Department	*An Outside Analysis of the Mandelbrot Set*
12-3-14	Jennifer Crawford, undergraduate student, Rowan University Math Department	*A New Class of Basis Polynomials Derived from the Generalized Prouhet-Thue-Morse Sequence*
2-9-15	Dr. Sungwook Kim, postdoctoral fellow, National Institutes of Health, Biostatistics Research Branch	*Optimal Experimental Design for Systems of Bivariate Failures Under a Bivariate Weibull Function*
2-11-15	Edward Dougherty, Ph.D. candidate, Virginia Tech Program in Genetics, Bioinformatics, and Computational Biology	*Biomathematics of Transcranial Brain Stimulation*
2-13-15	Dr. Qiwei Sheng, postdoctoral fellow, Washington University Computational Bioimaging Laboratory	*A Family of Differential Approximations of the Radiative Transport Equation and its Applications to Inverse Optical Problems*
2-16-15	Dr. Ioannis Gkigkitzis, East Carolina University Math Department	*Regulating Quantitative Trials, Cancer Therapies, and a Framework for Designing and Analyzing Cellular Decision-Making Strategies*
2-18-15	Mohammad Rahman, Ph.D. candidate, University of Texas Health Science Center in Houston	*Sparse Structural Equation Models for Integrated Genomic and Epigenomic Analysis: Application of Cardiovascular Disease*
2-23-15	Professor Jay Schiffman, Rowan University Math Department	*Exploring a Fascinating Integer Sequence*
2-25-15	Dr. Charalampos Papachristou, University of the Sciences Department of Mathematics, Physics, and Statistics	*A Confidence Set Inference Method for Identifying Quantitative Traits*
3-23-15	Dr. Hieu Nguyen, Rowan University Math Department	*The Digital Binomial Theorem*
3-30-15	Tuan Le, graduate student, Rowan University Math Department	*Decoding the Helberg Codes for Multiple Insertion/ Deletion Errors*
4-13-15	Dr. Tom Osler, Rowan University Math Department	Iterations for the Lemniscate Constant
4-20-15	James Glazar, senior at Gloucester Catholic High School	Optimizing JCREW Jamming in a Simple Game
5-4-15	Dr. Driss Drissi, Kuwait University Math Department	What is the Invariant Subspaces Problem?