

## MathFest 2015 – Undergraduate Student Paper Session Award Winners

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The MAA Undergraduate Student Paper Sessions during the Centennial Celebration of the MAA at MathFest 2015 were a great success with 134 presentations featuring 181 presenters. The tradition of recognizing student achievement at an ice cream social was continued. The winners of the various awards are as follows:

The Andersen Prize, awarded in memory of Janet Andersen by the Bio SIGMAA, recognizes an outstanding presentation and work in areas related to mathematical biology. This prize went to **Paul Diaz** and **Eric Jones** of Colorado School of Mines for their presentation “PIC Math: A Modified SEIR Model for the Spread of Ebola in West Africa.”

The Environmental Mathematics SIGMAA Award was awarded to **Becky Chen** of University of Richmond for the presentation “Mathematical Modeling of a 4-by-4 Nematode-bacteria Predator-prey System.”

The SIAM (Society of Industrial and Applied Mathematics) Award was awarded to **Kinardi Isnata** of Duquesne University for the presentation “A Variational Approach for High Dynamic Range Imaging.”

We also presented 24 MAA Outstanding Presentation Awards for students who gave especially noteworthy presentations in any area of mathematics on original or learned topics. The winners of these awards (in no particular order) were:

- **Alex Edwards** and **James M. Beaver** of the University of North Alabama for “Investigating Cardano’s Irreducible Case”
- **Yuliya Semibratova** and **Alex Page** of University of Illinois at Urbana-Champaign for “The Broken Stick Problem in Higher Dimensions”
- **Emma Groves** of Southwestern University for “Cholera as a Global Issue: Measuring the Effects of National Economic and Health Indicators”
- **Asa Rubin** of Trinity College for “Domination in the Generalized Hierarchical Product”
- **Carsten Peterson** of Yale University for “Generalized Numerical Semigroups of Minimal Embedding Dimension”
- **Abigail Edgar** of St. Edward’s University for “Minimum Agreement Proportion in Box Societies”
- **Benjamin Krakoff** of Yale University for “Counting Subrings of  $\mathbb{Z}^n$  & related questions”
- **Nathaniel Mayor** of Harvard University and **Mia Smith** of Williams College for “When are Knots Hyperbolic?”
- **Kristen Lawler** of Marist College for “Lyapunov Function Arguments for Global Stability in Compartmental Epidemiological Models”

- **Robin Belton** and **Madison Hoffman** of Kenyon College for “A Case Study in Placental Imaging”
- **Jonathon Spaw** of Millikin University for “Locating Sets and Numbers for Disconnected Graphs”
- **Caleb Ki, Yen Nhi Truong Vu,** and **Bowen Yang** of Amherst College for “Combinatorial Quantum Modular Forms”
- **Robert Dickens** of University of Maryland – Baltimore County and **Samantha Moore** of University of Northern Colorado for “Packing Three Equal Circles on a Flat Klein Bottle”
- **Caitlin Lienkaemper** of Harvey Mudd College for “Identifying Convex Neural Codes”
- **Gereltuya Erdenejargal** and **Oliver Orejola** of University of Colorado Boulder for “ $C^*$ -Algebra from  $k$ -Graph and 2-Cocycles”
- **Ethan Ackelsberg** of Bard College at Simon’s Rock for “State Transfer in the Corona of Graphs”
- **Emily Hubbard** of Arkansas State University for “Logistic Regression Analysis on the Effects of College Algebra on College Students”
- **Jiyi Jiang** of Hope College for “Classifying Handwritten Digits Without Seeing Them”
- **Tyler Hoffman** of McDaniel College for “Hausdorff Dimension of Generalized Fibonacci Word Fractals”
- **Robert Porter** of Brigham Young University for “Origami Mathematical Applications and Rigid Reachability”
- **Muhammad El Gebali** of The American University in Cairo for “A Combinatorial Interpretation of the LDU Decomposition of Totally Positive Matrices”
- **Logan Tatham** of Brigham Young University for “A Topological Approach to the Existence of Solutions of Calculus of Variations Problems”
- **Justina R. Yang** of Yang Academy for “Exploration of a Quantum Mechanical Particle in a Toroid”
- **Hriday Bharat Thakkar** of Minot State University for “On the Numerical Solution of the Black-Scholes Option Pricing Model”

Congratulations to each of the winners. We also want to say a special thank you to all those that presented and to their advisers for all their efforts – job well done! We hope to see you again next year and hope that you will encourage your classmates to consider presenting at MathFest 2016!

Of course, the awards are not possible without the generous help of volunteer judges. The following people volunteered their time and expertise to judge the undergraduate student paper sessions:

Reyes Ortiz-Albino, J. Lyn Miller, Suzanne Caulfield, Bhamini M.P. Nayar, Barry Spieler, Dan Kemp, Daria Snider, Tyrone Washington, Afshin Ghoreishi, Margaret Robinson, Anthony DeLegge, Colin McKinney, Tzvetalin Vassilev, Dewey Taylor, Shelly Smith, Alison Setyadi, Masahiko Uchida, Elizabeth Wright, Erin Griesenauer, Ron Buckmire, Michelle Ghrist, Abraham Mantell, Christopher O'Neill, Eric Kahn, Brian Heinold, Christopher Davis, Brian

Blitz, Adam Coffman, Chuck Lindsey, Erika Ward, Xiaoqian Xu, Andrea Overbay, Kim Roth, Miranda Bowie, Jeremy Thompson, Tara Davis, Pamela Richardson, Vijay Sookdeo, Brandon Samples, Kristel Ehrhardt, Amy Hlavacek, Meghan De Witt, Chris Sass, Sean Droms, Natalie Hobson, Jennifer Pearl, Jan Hlavacek, Mahmud Akelbek, Ryan Gantner, Bryan Clair, Dora Ahmadi, Rick Cleary, Erin Moss, Tim Flood, Robert Styer, Paula Russo, Andy Miller, Thomas Hill, Edward Aboufadel, Darlene Butler, Eleanor Farrington, Lina Wu, Andrew Martin, Ashley Johnson, Ji Young Choi, Tim Flowers, Kenneth Ross, Michael Schroeder, Benjamin Collins, Cassie Williams, Roger Wolbert, Susan Crook, Carlos Castillo-Garsow, Lee Collins, Glenn Berman, Elijah Allen, Kevin Iga, Allen Butler, Jim Murray, Hema Gopalakrishnan, Eileen McGraw, Joshua Holden, David Clark, Kathy Lewis, and Alejandra Alvarado

Thanks so much to all of you and we hope all of you will help judge again next year.