

Summer 2016 Research



Karel Marshall (3rd from the left, front row and inset) (senior BS Mathematics, PME, J. N. Andrews Scholar) spent the summer doing an REU at North Carolina State University, working under Tien M. Nguyen and Andy Guillen of the Aerospace Corporation and Hien Tran from NCSU. The project on which she worked is “War-Gaming Applications for Achieving Optimum Acquisition of Future Space Systems,” a project concentrating on ways to reinvigorate war gaming and defense practices. The objective of the REU project was three-fold: (1) implement the Aerospace Corporation’s war-gaming models

in MATLAB and enhance their computation speed, (2) generate optimum Program and Technical Baseline solutions and their corresponding acquisition strategies, and (3) provide simulation results for a notional space system acquisition. The proposed project exposed Karel and her REU teammates to game theory, probability and statistics, non-linear programming and mathematical modeling components, and a team approach to problem solving. The participants will present the results of their research at the Joint Mathematics Meetings in Atlanta in January 2017.

From June 5 to August 13, 2016, **Christa Spieth** (senior Mechanical Engineering/Mathematical Studies, PME) worked under Dr. Yuanlin Zhang at the Computer Science Department of Texas Tech University in an NSF-backed REU, concentrating on the topic of declarative approaches to knowledge-intensive applications. In her REU, Christa learned skills that will help to prepare her for a career as an engineer who can apply computing to solve current problems. In addition to learning simple and easy-to-use declarative programming, she had the opportunity to apply these newly acquired skills to solve challenging problems involving cyber security, energy, health care, intelligent agents, and space exploration. She also had the opportunity to conduct research on making declarative programming systems more powerful at the language and reasoning level and to visit well-known labs at Texas Tech, local hospitals, a NASA-sponsored research lab, and various cyber-security, energy, healthcare, and space-exploration companies.

This summer **Timothy Robertson** (senior BS Math, PME) worked with Dr. Shandelle Henson and Dr. Suzanne Robertson, an assistant professor of Mathematics and Applied Mathematics at Virginia Commonwealth University, helping them to research the derivation of age-structured systems of Delay Differential Equations (DDE) from age-structured PDEs. Timothy conducted a literature review, searching specifically for papers that derive/use correct DDE models and/or incorrect ODE models.





Working under the mentorship of Dr. Henson, **Christiane** and **Dorothea Gallos** (sophomore BS Mathematics majors) researched bifurcations in a discrete time model involving glaucous-winged gull hens. The twins proved mathematically that the system with which they were working lost stability at the unique critical point when the gulls started laying eggs only every second day.

Erik Vyhmeister (senior BS Physics/BS Mathematics, PME) spent his summer at an NSF-sponsored REU at the University of Illinois at Urbana-Champaign, researching graphene kirigami with Dr. SungWoo Nam, whose research focuses on multifunctional engineered nanomaterials and devices, research for which he won the NASA Early Career Faculty (ECF) award this past August. The principle behind the work is that both origami (*ori*, fold, *kami*, paper) and kirigami (*kiru*, cut) can fashion beautiful and complex three-dimensional structures. Nam and other scientists and engineers are now adapting these techniques to use with different two-dimensional materials, one being graphene, to create microscale structures that have tunable mechanical properties.

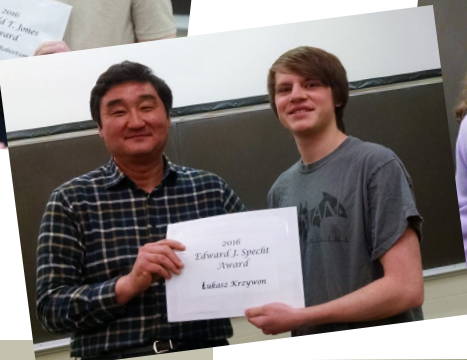


This summer, when he wasn't enjoying the beautiful scenery, **Dillon Zimmerman** (senior BS Chemistry [ACS]/Mathematical Studies, PME) worked with the hydrogen pipeline safety group in Boulder, Colorado, at the National Institute of Standards and Technology (NIST), running theoretical computational simulations on various iron-based steels using a program called VASP to determine how hydrogen atoms diffuse through each microstructure. The overall goal was to find which steels were better able to handle hydrogen gas since the gas tends to cause embrittlement. Knowing what microstructures provide a better system can help companies know how to make future steels which are more resistant to hydrogen embrittlement.



2015-16 Named Scholarship Winners

At the annual Mathematics Awards in March, 58 students received a record 72 awards for excellence in their mathematics courses, including the four given to Whitney Watson for Calculus II and III, Intro to Linear Algebra, and Math Modeling for Biology (see p. 4 for her story). The named scholarship winners were (*left to right*) **Timothy Robertson** (senior BS Mathematics, PME), the Harold T. Jones scholarship for excellence in mathematics; **Łukasz Krzywón** (senior BS Mathematics/BS Physics, PME), the Edward J. Specht award for excellence in mathematics and physics; **Brian Shockey** (2016 BSE Engineering [Mechanical]/Mathematical Studies, PME), the Louis Ulloth award for having a positive influence in science and mathematics; and **Karel Marshall** (senior BS Mathematics, PME), who is the first winner of the new Harold Buhalts Boyd and Jean Stewart Boyd Scholarship for students who have shown excellence in mathematics and science while working throughout their school years.



2015-16 Graduates

Emily-Jean Banks (BS Chemistry [ACS]/BS Mathematics, PME, J. N. Andrews Scholar) is working toward her PhD in Chemistry at Penn State University where she has a graduate fellowship.

Joshua Kim (BS Computing [Computer Science]/Mathematical Studies, PME) is working at Whirlpool in St. Joseph, MI, doing Web development.

Julie Logan (*below left*) (BS Mathematics/BA Spanish, PME, J. N. Andrews Scholar) is working at Andrews for Grounds while taking more upper-division math courses and applying to graduate schools for 2017-18.

Rufaro Musvosvi (*right*) (BSE Engineering [Mechanical]/Mathematical Studies, PME) works in Mishawaka at SHIELD Restraint Systems as an Application Engineer, serving as an interface between the customer and the engineering team. Eventually she hopes to go to graduate school to obtain a master's degree in engineering.

Robbie Polski (*below right*) (BSE Engineering [Mechanical]/BS Physics/Mathematical Studies, PME, Sigma Pi Sigma, Sigma Xi) got married three weeks after graduation, then went to Protection Island for part of the summer to do research with his new bride, **Ashley Reichert** (BS Biology [Biomedical]). He is now attending CalTech, concentrating in applied Physics, and Ashley is attending USC's medical school.

Brian Shockey (*far left*) (BSE Engineering [Mechanical]/Mathematical Studies, PME, Phi Kappa Phi) is working as a design engineer for United Technologies, Pratt & Whitney, at their headquarters in East Hartford, Connecticut.

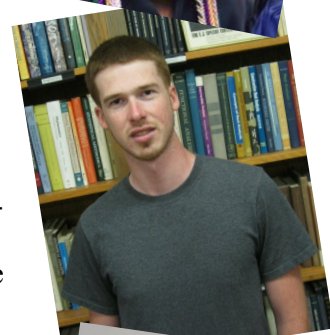
Isabel Stafford (BS Physics/Mathematical Studies, PME, Sigma Pi Sigma) worked at Garrett Labs in Niles until she got a job as a production editor for the American Mathematical Society in Rhode Island.

Samuel Wagner (*right*) (BS Mathematics Education/Secondary Certification) finished his student teaching and degree requirements in December 2015. He is currently living in South Carolina, substitute teaching while looking for a full-time job as a dean of men.

Jonathan Wheeler (*left*) (BS Physics/BSE Engineering [Electrical and Computing]/Mathematical Studies, PME, Sigma Pi Sigma, Sigma Xi, J. N. Andrews Scholar) and his wife, **Mateja (Plantak)** (2015

BS Math Ed/2016 MAT Mathematics), worked at summer camp before moving to California where Jonathan is pursuing his MS in Electrical Engineering at Stanford while Mateja is teaching in the Bay Area. You can follow him on his personal blog at jamwheeler.com.

Juliette (Young) Dayen (BS Mathematics Education/Secondary Certification: J. N. Andrews Scholar) worked at Camp Lawroweld this summer and now is employed full time at Pine Tree Academy as the registrar and teacher of two mathematics and two English courses. This summer she married Joshua Dayen, the head boys' dean.



Remembering (and Missing!) Whitney Watson



The Watson family with Dr. Henson and Dr. Hayward at WayAnne's graduation. Whitney is on the far right, next to her mother.

The Department of Mathematics and her many friends at Andrews University are still mourning the passing of **Whitney Watson** (sophomore BS Math/BS Music major, JN Andrews Scholar), second daughter of Drs. James Watson and Marilene Wang and sister of **WayAnne Watson** (2015 BS Music/Premedical). Not quite nineteen years old, Whitney died peacefully during the night after a climb on Mt. Whitney with her father on December 14, 2015.

Born and raised in Southern California, Whitney was a bright student and a hard worker who excelled in school and in music yet had time for fun and her

hobbies of running, sewing and gardening with her grandmother, volunteering, and cooking vegan food—especially desserts. She began violin at age five, and following in her sister's footsteps, she spent her last two years of high school at Fountainview Academy. After graduating, she spent a month doing medical mission work at Aeon Health Center in Malaysia, and, after joining her sister at Andrews University, Whitney volunteered at ASAP Ministries, which supports mission work in Southeast Asia. The recipient of a full four-year scholarship, Whitney began her studies at Andrews as a pre-med math major, soon adding a music major.



"She was doing a double major, practicing viola two hours a day, piano an hour a day, exercising at least an hour a day, acing all her 21 credits, tutoring, grading, playing in a string quartet and orchestra, and reading Homer's *Odyssey* in her spare time," says her sister, WayAnne. "And everyone still recognized her loyalty, diligence, and dedication. She was the one who would show up for everything, prepared and collected."

"Her gentle participation in class and her exceptional written work consistently revealed a brilliant mind and a boundless curiosity about the world, her place on it, and her moral and ethical obligations to others," says Monique Pittman, chair of the J. N. Andrews Honors program at Andrews University.

In a *Student Movement* article from January 20, 2016, Becky St. Clair's (Media Communications Manager of the Division of Integrated Marketing & Communications at Andrews University), wrote of Whitney: "Andrews University could have used Whitney as a poster child for its wellness initiative. A determined, driven and energetic young woman, Whitney was known for the healthy choices she made each and every day. She exercised at least an hour every day, chose the healthiest foods in the cafeteria, and slept 9-11 hours every night. Her hobbies included skiing (which she picked up when she was just 22 months old), mountain climbing, bicycling, backpacking, camping, and running."

In Whitney's obituary, her family notes these active hobbies as well: "Just like her family, she loved skiing, food, and travel and filled what would be the last year of her life with adventure and friends and family. On the morning of December 14, 2015, she and her beloved daddy began climbing her namesake mountain—the trip about which she had dreamed ever since she was a little girl. After a challenging but rewarding hike, she enjoyed spending time with Dad, eating dinner at Outpost Camp, and then settled down for the night there at an elevation of 10,400 feet, a routine altitude for the veteran skier. Then she fell asleep, quiet and calm, for the last time on earth. While her death leaves us devastated, we remember the joy and peace of Christ that flowed out of her heart and look forward to the soon day when her Heavenly Father will wake her up and take us home to be together for eternity."



Whitney and Dr. Moore at the 2015 Awards Ceremony—receiving her award for discrete mathematics.

Refereed Journal Articles (names in italics are student coauthors)

- Kang, J. H.** 2016. Growth conditions for uniqueness of smooth positive solutions to an elliptic model. *Communications in Applied Analysis*, 20:575-584.
- Kang, J. H.** (2015). "Smooth Positive Solutions to an Elliptic Model with C^2 Functions." *International Journal of Pure and Applied Mathematics*, 105.4:653-667.
- Moore, R. C.** (2016). "Mathematics Professors' Evaluation of Students' Proofs: A Complex Teaching Practice." *International Journal of Research in Undergraduate Mathematics Education*. doi:10.1007/s40753-016-0029-y (published online, print version to appear).
- Robertson, T., & Kang, J. H.** (2016). "A General Elliptic Nonlinear System of Multiple Functions with Application." *International Electronic Journal of Pure and Applied Mathematics*, 10.2: 139-150.
- Robertson, T., & Kang, J. H.** (2016). "A General Elliptic Nonlinear System of Two Functions with Application." *International Electronic Journal of Pure and Applied Mathematics*, 10.2:115-125.
- Suceava, B., Carriazo, A., **Oh, Y. M.**, & Van der Veken, J., eds. (2016). "Recent Advances in the Geometry of Submanifolds, Dedicated to the Memory of Franki Dillen (1963-2013)." *Contemporary Mathematics*, 674.
- Sandler, A. G., Megna, L. C., Hayward, J. L., Henson, S. M., Tkachuck, C. M., & Tkachuck, R. D.** "Every-other-day Clutch-initiation Synchrony in Ring-billed Gulls (*Larus delawarensis*)." To appear in *Wilson Journal of Ornithology*.

Talks

- Atkins, G., presenter, with **Reichert, A., Henson, S. M.**, and Hayward, J. L. "The Effects of the Copulation Song and Other Disturbances on the Frequency and Synchronization of Reproductive Behaviors in Gulls (*Larus glaucescens*)." Michigan Academy of Science, Arts & Letters Conference, Biology Section, Saginaw Valley State University, University Center, MI, March 4, 2016.
- Dass, S.**, presenter, with **Henson, S. M.**, and Hayward, J. L. "A Mathematical Model of Animal Behavior." Michigan Academy of Science, Arts & Letters Conference, Mathematics Section, Saginaw Valley State University, University Center, MI, March 4, 2016.
- Henson, S. M.**, plenary speaker, with J. M. Cushing and J. L. Hayward. "The Effects of Climate Change on Marine Birds: Rising Sea Surface Temperature, Cannibalism, and Reproductive Synchrony, Part II." World Conference on Natural Resource Modeling, Resource Modeling Association, Flagstaff, AZ, June 14, 2016.
- Henson, S. M.**, plenary speaker, with J. M. Cushing and J. L. Hayward. "The Effects of Climate Change on Marine Birds: Rising Sea Surface Temperature, Cannibalism, and Reproductive Synchrony, Part I." World Conference on Natural Resource Modeling, Resource Modeling Association, Flagstaff, AZ, June 14, 2016.
- Henson, S. M.** "Effects of Warming Seas: Cannibalism and Reproductive Synchrony in a Seabird Colony." Michigan Academy of Science, Arts & Letters Conference, Mathematics Section, Saginaw Valley State University, University Center, MI, March 4, 2016.
- Kolpacoff, V. L.**, presenter, with **Henson, S. M.** "The Effect of Gross Domestic Product on HIV Infection Rate." Michigan Academy of Science, Arts & Letters Conference, Biology Section, Saginaw Valley State University, University Center, MI, March 4, 2016.
- Henson, S. M.** "Effects of Warming Seas: Cannibalism and Reproductive Synchrony in a Seabird Colony." 5th International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems, University of Western Ontario, London, Ontario, Canada, October 4, 2015.
- Kang, J. H.** "A General Elliptic Nonlinear System of Two Functions with Application." Mathematical Association of America, Hillsdale College, Hillsdale, MI, April 1, 2016.
- Moore, R. C.**, Byrne, M., Hanusch, S., & Fukawa-Connelly, T. "Is Grading Papers an Effective Teaching Practice?" 14th Annual Teaching and Learning Conference, Andrews University, Berrien Springs, MI, April 2016.
- Moore, R. C.**, Byrne, M., Hanusch, S., & Fukawa-Connelly, T. "Proof Grading: Is It Worth Your Time and Effort?" Michigan Academy of Science, Arts and Letters Annual Conference, Mathematics Section, Saginaw Valley State University, University Center, MI, March 4, 2016.
- Moore, R. C.**, Byrne, M., Fukawa-Connelly, T., & Hanusch, S. "Interpreting Proof Feedback: Do Our Students Know What We're Saying?" 19th Annual Conference on Research in Undergraduate Mathematics Education, Pittsburgh, PA, February 2016.
- Moore, R. C.**, Byrne, M., Fukawa-Connelly, T., & Hanusch, S. "Interpreting Proof Feedback: Do Our Students Know What We're Saying?" Joint Mathematics Meetings, Seattle, WA, January 2016.
- Moore, R. C.** "When Mathematicians Grade Students' Proofs, Why Don't the Scores Agree?" Michigan Academy of Science, Arts & Letters Annual Conference, Mathematics Section, Andrews University, Berrien Springs, MI, March 13, 2015.
- Oh, Y. M.** "Riemannian Submersion Invariant and Geodesics." Michigan Academy of Sciences, Arts & Letters, Mathematics Section. Saginaw Valley State University, Saginaw, MI, March 4, 2016.
- Oh, Y. M.** "Riemannian Submersion Invariant and Theta-slat Submanifolds." Michigan Academy of Science, Arts, and Letters Conference, Mathematics Section. Andrews University, Berrien Springs, MI, March 13, 2015.
- Robertson, T.**, presenter, with **Kang, J. H.** "A General Elliptic Nonlinear System of Two Functions with Application." Michigan Academy of Sciences, Arts & Letters Conference, Mathematics Section, Saginaw Valley State University, Saginaw, MI, March 4, 2016.
- Robertson, T.**, presenter, with **Kang, J. H.** "Conditions for Positive Solutions of the General Elliptic Model." Joint Mathematics Meetings, Seattle, WA, January 14, 2016.
- Weldon, L. M.** "Academic Mindsets." Michigan Academy of Sciences, Arts & Letters Annual Conference, Andrews University, Berrien Springs, MI, March 13, 2015.



Department News

In Memory of Vivian Hatcher

After Vivian Hatcher, the wife of Professor Emeritus Ted Hatcher, died this summer, alumni gave the department of Mathematics money to purchase something in her memory. The Department decided that some large, framed artwork for our hallway would be a beautiful memorial to the Hatchers, so Dr. Moore browsed through the works of Kevin J. Gross, an artist in Goshen, IN, who had presented an eigen*Talk in February 2015 on his use of fractals in art. The two prints that we chose are “Embraced by the Vines of Life” (*top*) and “Genesis.” (To see more images, you can look through the galleries at <http://spiritfireimages.com/> or on Facebook under the name Spirit Fire Images, LLC.)

Dr. Moore to Retire in June

This fall **Dr. Robert C. Moore** announced that he will retire from full-time teaching in June 2017. Dr. Moore—who has taught the mathematics education methods course, geometry, and discrete mathematics to our majors as well as Calculus I

and MATH 145—has taught at Andrews since 2006, when he came from Southern Adventist University (SAU) to serve as department chair, a position he held until August 2011 when Dr. Henson took over. His students consider him to be a helpful teacher, and Dr. Moore has received several awards for his excellent teaching, including the Daniel A. Augsburg Excellence in Teaching Award at Andrews in 2010 and the Distinguished Service Medallion and the Presidential Award for Teaching Excellence at SAU in 2006.

Dr. Moore completed his BA in Mathematics at Southern Adventist University in May 1975 and spent the next three years teaching mathematics at Fletcher Academy in Fletcher, NC, before going to the University of North Carolina, Chapel Hill, to complete his Master’s in Mathematics in August 1979. He then returned to Southern until May 1986, serving as chair from 1984-86, and in 1986, he moved to the University of Georgia, Athens, completing his EdD in Mathematics Education in August 1990. His dissertation is *College Students’ Difficulties in Learning to do Mathematical Proofs*, a topic in which Dr. Moore still has interest. He then returned to Southern, teaching there until he came to Andrews in 2006, except for two stints as a visiting professor at Montana State during the 1993-94 school year and the summer term in 1996.

Dr. Moore is a member of the Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education (RUME), benefiting from the mentorship of its internationally distinguished members, especially Tim Fukawa-Connelly with whom Dr. Moore studies mathematicians’ proof grading practices, trying to determine if students utilize and understand instructor comments.

In his retirement Dr. Moore will continue to pursue his hobbies of running, beekeeping, and gardening, but his colleagues, his mathematics education advisees, and his many students will miss him very much!



Alumni News

Sereres Johnston (2009 BS Mathematics/BS Physics, PME) finished her PhD in Physics at the University of Massachusetts and has begun work at the Argonne National Laboratory in Illinois.

Daniel Moskala (2010 BS Mathematics, PME) took his first actuarial exam shortly after graduating, starting his first job, and getting married. He had no idea of the amount of effort that necessary to finish all ten actuarial exams. Of his experience he says, “Studying well into the night after a full workday became my normal routine. Five years later, I passed my last exam. In the end, it was well worth it. Through the actuarial exam process I developed the expertise necessary to succeed in my career. I’m now a manager of the Actuarial Department at CIG, a West Coast Property & Casualty Carrier and I get to live with my wife, Katie, and new puppy, Lola, in beautiful Monterey, California.”

Olen Netteburg (2001 BS Mathematics Education/German Studies) and his wife **Danae** are doctors at Bere Adventist Hospital in Chad. To read about their experiences and to contribute to their ministry and send notes of support, check out his blog: <http://missionarydoctors.blogspot.com/>



Future Mathematician!

(left) **John Musselman** (2013 BS Mathematics Education/ Secondary Certification, PME) and his wife, **Ellen**, had a baby boy in February. John is the mathematics teacher at Blue Mountain Academy. (Check out their creative pregnancy announcement at <https://www.youtube.com/watch?v=RS4sYRE2-7Y&sns=em> .)

This summer, **Saharsh Dass** (2016 Biology [Biomedical], mathematics minor, J.N. Andrews Scholar, member of the Seabird Ecology Team) attended the Public Health and Math Modeling conference at Harvard. He said that his background in the math modeling class and the research project he completed with Dr. Henson while at Andrews made him feel confident enough to ask questions on the research presentations. A few weeks later he interviewed at the University of Pennsylvania for a Clinical Research Assistant position in the Cardiovascular Medicine division and is now working in that position, doing research with the Principal Investigator and taking two classes a semester at U. Penn. He is contemplating doing a master's in bioengineering to complement the image analysis work that he is doing at his new position. The program has options to include coursework in biology, biostats, math modeling, and image analysis, which fit neatly into Saharsh's long-term goals to work in public health.



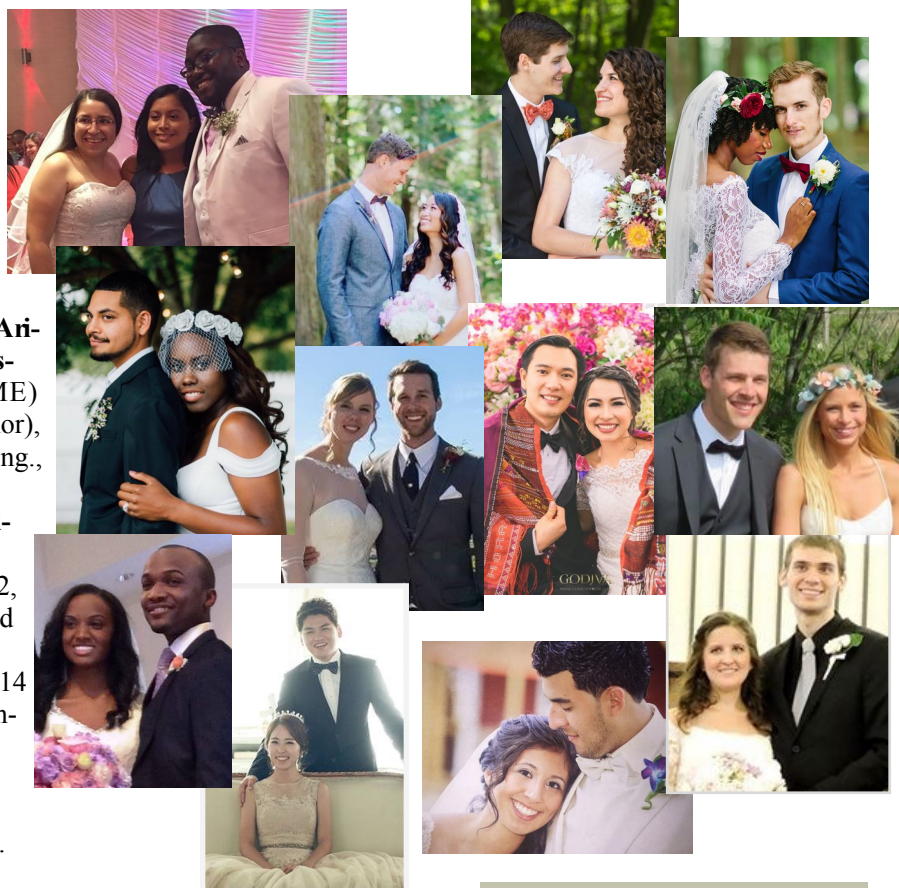
After spending two years teaching high school mathematics in Egypt, **Joelle Acre** (2014 BS Mathematics/BS Biology, BBB, Phi Kappa Phi, PME) has returned to the States and is teaching at the newly renovated and expanded Holland Adventist School. She will teach the mathematics and science classes for grades 6-10 and teach a Bible class for grades 9 and 10.



Weddings

Here are a few of our new couples:

(top row) **Sandra (Prieto)** (2011 BSE Elec. and Computer Eng., math minor, PME) and **Eric Gordon**, Aug. 7, 2016; **Andrew Kutzner** (2014 BS Biology [Biomedical], math minor, Phi Kappa Phi, PME) and **Jenny (Park)**, July 17, 2016; **Robbie Polski** (2016) and **Ashley (Reichert)**, May 22, 2016; **Eric Sigg Scott** (2011 BS Comp. Science/BS Math, J. N. Andrews Scholar, PME) and **Arianna (Lashley)**, Aug. 14, 2016. (2nd row) **Nina Lassonnier** (2014 BSE Mech. Eng., math minor, PME) and **Rob Fuentes** (2013 BSE Mech. Eng., math minor), Oct. 2, 2016; **Timothy Iuliano** (2015 BSE Mech. Eng., math minor) and **Kimmy**, Oct. 10, 2016; **Jan Peter Hutaaruk** (MS Math and Science, PME) and **El-len (Missah)**, June 16, 2016; **Brandon Baptist** (2015 Math Ed., PME) and **Natalie Peralta**, June 12, 2016. (3rd row) **Dejean Brown** (2012 BS Math) and **Shereé (Occenad)**, Nov. 1, 2015; **Ye Lim Seo** (2015 BS Math, PME) and **Sunny Yuetae Kim** (2014 MDiv), June 2015; **Ada (Alvarez)** (2014 BBA Management/Math Studies, PME; 2016 MBA) and **Irving Gonzalez**, Aug. 9, 2015; **Jonathan Wheeler** (2016) and **Mateja (Plantak)** (2014 BS Math Ed/ Physics Studies, PME; 2016 MAT), May 31, 2015.



Andrews University

Department of Mathematics

Programs

BS in Mathematics
BS in Mathematics Education
Mathematical Studies Major
Mathematics Minor
Mathematics Education Minor
Minor in Mathematics of
Economics and Finance
Behavioral Neuroscience
Mathematics Track

PME Michigan Gamma Chapter

*Lukasz Krzywon, President
*Stephanie Nieman, Vice President
*Meylin Tremols-Castillo, Secretary-Treasurer
*Prof. Joon Hyuk Kang, Advisor

eigen* Mathematics & Physics Club

*Jesse Snelling, Mathematics President
*Jacob Willard, Physics President
*Kimberly Park, Poster Secretary
*Lukasz Krzywon, Secretary

Mission Statement

Through teaching, research, and service, the Department of Mathematics seeks to provide leadership by:

*Preparing a diverse student body with the mathematical understanding, problem-solving skills, and dispositions that enable career excellence;

*Increasing mathematical and scientific knowledge through publication and presentation and engaging undergraduates in research;

*Supporting the broader mathematics education community and mentoring others for generous service through a committed Christian life.

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Front row (left to right): Daniel Castang, Jonathan Penrod, Jesse Snelling, and Nathan Verrill. *Back Row (left to right):* Dorothea Gallos, Christiane Gallos, Stephanie Nieman, Meylin Tremols-Castillo, Zachariah Swerdlow, Thomas Winard, Christa Spieth, and Timothy Robertson

2016 Pi Mu Epsilon Inductees

At the March 31, 2016, induction ceremony in the Whirlpool Room in Chan Shun Hall, the Michigan Gamma Chapter of Pi Mu Epsilon inducted twelve new members. The new 2016-17 PME officers are **Lukasz Krzywon** (right) (senior BS Mathematics/BS Physics), president; **Stephanie Nieman** (far left) (senior BS Mathematics education



[Secondary Certification]), vice-president; and **Meylin Tremols-Castillo** (senior BS Mathematics Education [Secondary Certification]; BA Spanish for K-12 Education), secretary/treasurer. **Timothy Robertson** (senior BS Mathematics) gave the keynote talk entitled "Existence of Solutions to a Time-dependent, Nonlinear Population Model," a report on his latest original research at that time.



Who's Who 2015-16

Of the fifty Andrews University students listed in *Who's Who for 2015-16*, ten were Mathematics majors, two were minors, and five were members of Dr. Hen-son and Dr. Hayward's Seabird Ecology Team. The majors are **Emily-Jean Bankes**, **Lukasz Krzywon**, **Julie Logan**, **Rufaro Musvosvi**, **Robert Polski**, **Brian Shockey**, **Isabel Stafford**, **Jonathan Wheeler**, **Juliette Young**, and **Dillon Zimmerman**. The minors are **Michael Hess** and **Eui Bin You**. And the members of the Seabird Ecology Team are **Saharsh Dass**, **Mindy McLarty**, **Ashley Reichert**, **Zachary Reichert**, and **Sumiko Weir**.

Editor's Note:

I would like to compile a list of careers that our former majors so that I can tell new students what they can do with their math majors. Please email your career titles and brief job descriptions for future mathematicians to math@andrews.edu. Thanks!