As of July 1, 2015, the School of Science and Mathematics was officially renamed the College of Science and Technology and simultaneously welcomed the Geography and Applied Engineering, Safety and Technology departments. As Millersville University is now a doctoral-granting institution of higher education, it was determined that its academic units are better represented as “colleges,” and the change aligns Millersville with the majority of the Pennsylvania State System of Higher Education universities. In addition, the department changes reflect a better fit within the new colleges.

School of Science and Mathematics becomes the College of Science and Technology

As of July 1, 2015, the School of Science and Mathematics was officially renamed the College of Science and Technology and simultaneously welcomed the Geography and Applied Engineering, Safety and Technology departments. As Millersville University is now a doctoral-granting institution of higher education, it was determined that its academic units are better represented as “colleges,” and the change aligns Millersville with the majority of the Pennsylvania State System of Higher Education universities. In addition, the department changes reflect a better fit within the new colleges.

Dean Smith retires; College welcomes new dean, Dr. Jackson

The College of Science and Technology bid farewell to Dr. Robert T. Smith, who retired after serving six years as dean and ten years previously as chairperson of the Mathematics Department. The department extends appreciation and best wishes for a long and fulfilling retirement. The department further extends its congratulations to Dr. Michael Jackson (pictured right) on his selection as dean of the college. Dr. Jackson previously served six years as chairperson of the Department of Physics at Central Washington University.

Department welcomes new faculty member: Baoling Ma

Dr. Ma received her PhD in Mathematics from the University of Louisiana at Lafayette in 2012, focusing on dynamical systems that arise in mathematical biology, ecology, and epidemiology. She received her BS in Mathematics and Applied Mathematics in 2007 from Ocean University of China, in Qingdao, China, where she completed a thesis dealing with graph theory and sequence polymerization.

Her current research uses stochastic modeling to study the long-term impact of oil exploration in the Gulf of Mexico on sperm whales. A future project will involve developing a mathematical model to accurately describe the population dynamics of the parasite that causes malaria as it interacts with red blood cells and cells of the immune system. Another project will use matrix population models and structured population models to investigate the risks caused by diseases that threaten endangered plant and animal species.

Dr. Ma was born in a small village in the Shandong province of China, and when she was 7 years old her family moved to Jinan, the capital of that province. Her parents operated a small vegetable and fruit store. She has three younger sisters, two of whom majored in mechanical engineering and engineering management, respectively, and the other in business English. They are all working in China now. She has one very pretty, very smart niece, age three and a half.

Outside of the university Dr. Ma reads all kinds of books, mainly nonfiction. She likes to watch documentaries and listen to Ted talks. “Many of those talks are very cool,” she says. She likes outdoor activities a lot: mountain climbing, hiking, backpacking, canoeing, etc. She has run 5k races two to four times each year in the past several years, and she has participated in Yoga and Pilate classes.

Dr. Ma chose a math major in college mainly because she had always been good at math. When she started to complete interdisciplinary projects in graduate school she grew more excited, saying, “It is really cool to use math modeling techniques, analysis theories, and numerical methods to help people gain insights into complex problems arising from biology, ecology and epidemiology.” She has two aunts, both educators, who were her role models when she was young; one teaches math in an elementary school, the other a mechanical engineering professor at an architecture university. Dr. Ma says, “I dreamed to be a professor myself one day, and here I am now. It turns out that it’s great to have a dream which will come true if you keep thinking about it.”
Dr. Dorothee Blum - Productive Sabbatical Leave

Congratulations to Dr. Dorothee Blum, who was awarded a full year sabbatical for the 2014-15 academic year. During her sabbatical she wrote a textbook for the course MATH 204 (Algebraic Foundations for Middle Level Teachers), titled *Algebraic Foundations and Structures for Pre-Service Middle Level Teachers*. Blum will classroom-test this book during the spring 2016 semester when she teaches the course, and after completing the final draft she will make the textbook available online for anyone who wants to use it.

Blum’s book has 11 chapters that cover a variety of topics including sets of numbers; basic set theory and functions; number sequences and number patterns; basic number theory; counting with permutations and combinations; algebraic properties; infinite and finite algebraic structures such as groups, rings and fields; the ring of polynomials including factoring; and algebraic structures involving 2 x 2 matrices. Dr. Blum presented about this book at the 2015 MathFest, and she used the current draft this past summer with two students who took the course with her as individualized instruction.

Get to know our faculty: Dr. Lewis Shoemaker

How long have you been a professor at Millersville University? 28 years

How did you choose your career path? I earned a math major at Lehigh University, intending to work as an actuary. My senior year I interviewed with a major insurance company and realized that I could not see myself in that position for the rest of my working days. I really enjoyed the several statistics classes I had taken, and so I applied late to graduate school, and I was lucky enough to land an assistantship at Penn State. My love for statistics and teaching grew, and I continued my education until receiving a PhD in 1980. The neat thing about statistics is that you not only use mathematics, but because it cuts across almost all disciplines you get to conduct research in a variety of fields.

How did you select Millersville University as your workplace? I grew up in Lancaster County. I spent one year at Temple University and six years at University of Pennsylvania while living in Philadelphia and New Jersey. The bottom line is, “You can take the boy out of the country but you can’t take the country out of the boy.” I saw an opportunity to return to Lancaster County as part of a reputable Mathematics department, and I took it.

Tell us about your life outside the workplace. My children will tell you, “Dad loves his God and his guns.” I do what I can to spread the good news that we can have a personal relationship with Jesus. I am chairman of the elder board at our church, serve on the advisory board, and teach Sunday school. I am faculty advisor for Intervarsity Christian Fellowship and Reformed University Fellowship here at Millersville. I also serve on the board of directors of New Hope Community Fellowship. I enjoy hunting and enjoying God’s creation. There is nothing like being out in the mountains of northern Pennsylvania and experiencing the total tranquility of the deep forest.

What research topics are you currently pursuing? I am currently investigating the possible connection between the movement of the magnetic poles and global warming. My model shows an extremely strong correlation between the movement of those poles and deviation in average annual global temperature. Interestingly, this all came about because I got lost in the woods while hunting several years ago due to the change in position of the magnetic poles.

What advice would you give to young mathematicians and math educators? I once asked a neighbor kid how she was doing in math. She said “Oh, not too well, but I’ll have my ‘people’ do the math when I get older.” I told her that if she didn’t do well in math, she wouldn’t have any “people”; she would be the “people.” Mathematics and statistics are the driving force in our technologically dependent society. My advice is, “Be the guidance for the ‘people’; don’t be the ‘people.’

Like what you read about the Mathematics department?

Keep our programs strong by supporting our majors with a gift. Visit www.millersville.edu and click on ‘Giving to Millersville’ OR send your gift to Millersville University, Development Office, PO Box 1002, Millersville, PA 17551. Gifts may be designated to the Mathematics Department Scholarship funds, and can be restricted or unrestricted.
MEMU: Mathematics Educators at Millersville University, an NCTM affiliate

By: Christine Persun

Mathematics Educators at Millersville University (MEMU) began as an idea in the spring of 2014. A small group of students met to discuss mathematics education and to organize as an affiliate of NCTM, the National Council for Teachers of Mathematics. After plenty of hard work and dedication from the students and advisors, MEMU became a recognized NCTM Affiliate (charter #432) in April 2015.

The charter members of MEMU wanted to plan a math fair in the Lancaster community. After months of preparation it took place in March 2015 at Wickersham Elementary School in the School District of Lancaster. About forty university students created their own math games and lessons to share with fourth and fifth graders from the elementary school. The games encompassed topics in algebra, geometry and measurement, probability and statistics. Almost 75 students from the elementary school attended the math fair and even brought their parents and siblings (both younger and older). The fair also included refreshments and prizes.

Because younger children came, the MEMU students had to alter some of their games to accommodate what the players had learned so far. This sparked an idea for MEMU: expand on the topics covered so more students from other grades may attend. This would also reinforce information students had previously learned or might introduce insight into a new topic. In October, 2015, MEMU held another math fair, this one geared toward second through fifth graders at Wickersham Elementary.

In its future MEMU will assist with the annual math contest, Math Counts, held at Millersville each spring, and volunteer at local elementary and middle school science fairs. The club members hope to create an environment for students where learning about math is not only educational, but also fun and exciting.

Get to know our math majors: Alanna Clark, BSE

Why did you choose to major in math education? My dad really encouraged me to love learning. When I was little he gave me a new Jump Start educational game for Christmas each year to prepare me for the next school year. I think I first loved math because I loved to write numbers. It’s silly, I know. Now I love math in general, and I love helping others understand it. I know I could have chosen a different path in mathematics, but I wanted to make an impact in young adults’ lives, and what better way than to be a teacher!

Tell us about a good experience you’ve had as a math education major. One of my best experiences has come through the Robert Noyce Scholarship, which has blessed me with many opportunities to be in a classroom. We’ve volunteered in high schools since our acceptance into the program, and we taught in a high-needs school in Philadelphia for two weeks. In addition to classroom experience, we presented at the 2015 PCTM Conference. The Scholarship has definitely helped me feel more comfortable in my teacher skin during my professional block.

How has your perspective on teaching math evolved during your time at Millersville? I used to think that teaching was going to be easy. Wrong. There is so much more that goes into educating students than knowing your content. You need to know how to reach all your students, how to accommodate for certain individuals, how to manage a classroom, and so much more. Seriously, thank the teachers from your younger days for doing all they did, because they were talented!
“Take the set of numbers \{2, 5, 8, 12, 19, 36\}, and combine them by the four basic operations, using each number once, to make 311.” Millersville Math Club president Othelia Sierra reports that this is a common sort of activity for the Millersville Math Club, which meets weekly under the supervision of faculty advisor Dr. Han.

During the past several years the Math Club experienced a sort of death and resurrection. Sierra shares that in October of 2014 the club received a new temporary status from the Student Senate, and its members celebrated the revival last March 14 with a special “Pi a Prof” activity in observation of Pi-Day. Math Professors Fenwick, Han, Robinson, Heitman, and Garber, as well as P.E. Professor Schaeffer volunteered to take a “pie” to the face. The club upgraded to full status in October 2015, with big plans.

One of those plans, Sierra says, is a contribution to the conversation about math anxiety. “Why do people hate math?” she asks. The math club, with the consultation of statistician Dr. Fenwick, is developing a survey that will be administered to Millersville students collecting data on the population’s attitude toward math and the motivation behind that attitude. The club hopes to publish its results. Another big plan is to visit the Museum of Mathematics (MOMath) in New York City. “We want to do math,” Sierra says. “I like math.”

Sierra is proud of her governing board: vice-president Kiersten Smith, secretary Derek Miller, and treasurer Ian Murray. Interestingly, this board is not composed exclusively of math majors, but also incorporates computer science and even meteorology. The Math Club’s purpose—beyond having fun with math and eating (“There’s always food,” Sierra says)—is to forge a link between upper- and lower-classmen in the Millersville mathematics community. Sierra hopes students will share experiences with each other and act as a resource for the younger members. Check out Millersville Math Club

**Get to know our math majors: Justin Eastman, BS**

*Why did you choose to major in math?* I was actually a biology major, but I switched to math after a year. My Calculus 1 course with Dr. Ikenaga reminded me how much I enjoyed math, and I saw many applications of mathematics in the content of my cellular biology course. Thus, I switched to mathematics with the goal of working on biology problems from a mathematics perspective.

*Tell us about a good experience you’ve had in your major.* Over this past summer at Rochester Institute of Technology (RIT) I attended a research experience for undergraduates (REU) modeling cardiac arrhythmias with delay differential equations. I enjoyed diving into the problem and understanding how the model worked. I used experimental data to develop equations that represent processes occurring in the real world.

*How has your perspective on math evolved during your time at Millersville?* I have learned how beautiful mathematics can be. Visual representations of the Fibonacci sequence create elegant patterns, and then there are fractals, a form of chaotic behavior where you see a repetition of the same patterns. The Mandelbrot set is a famous fractal made into multiple YouTube videos by zooming in on one section of the set, and I think it is just amazing.
Congratulations to Dr. Minquan Zhan who was promoted to Full Professor and Dr. Zhigang Han who was promoted to Associate Professor in Aug 2015.

Congratulations to Drs. Ronald Umble and Zhigang Han for the publication of their book *Transformational Plane Geometry* in Dec 2014. Dr. Umble also presented at the Lehigh Geometry-Topology Conference in May 2013 and May 2015.

Congratulations to Drs. Cynthia Taylor and Ximena Catepillán, who published their article “Maya calendars in the Classroom” in *Mathematics Teaching in the Middle School* in Sept 2015 and presented the same topic at both the MAA MathFest and the PCTM conference in Aug 2015. In addition, Drs. Taylor and Catepillán presented “A Graduate Course in Ethnomathematics” at MathFest in 2014. Dr. Taylor also published “What is the best option?” in 2013 and its follow-up, “Solutions: What is the best option?” in 2014, both in *Teaching Children Mathematics*. During 2013–2015, Dr. Taylor published one other article in *Teaching Children Mathematics*, one in *Mathematics Teaching in the Middle School*, two in *Journal of Mathematics Teacher Education*, and one in *Pennsylvania Educational Leadership*.


The department also recognizes Drs. Kevin Robinson and Michael Wismer for their presentation “Ponderings & Reflections: A Data-Driven Statistics Course for Middle-Level Majors” at the Pennsylvania State System of Higher Education conference in April 2015. Dr. Robinson also presented “Statistics—What’s So Hard?” at the association’s conference in April 2013.

The following MU alumni recently began graduate studies:

- Robin Alexander, Ohio State (biostatistics)
- Ben Baer, Cornell (statistics)
- Victor DeCaria, Univ. of Pittsburgh (applied math)
- Joe DiNapoli, University of Delaware (math ed)
- Luke Donato, University of Toledo (math)
- Faheem Giliani, Texas A&M (applied math)
- Guen Grosklos, Univ. of Colorado (applied math)
- Jacob Hikes, West Virginia (aerospace eng.)
- Hunter Kenyon, Georgia Tech (nuclear eng.)
- Jing Li, University of California, Riverside (math)
- Sydney Mace, Syracuse University (math)
- Anthony Mastriana, University of Texas (math)
- Daniel Ozimek, Penn State (math ed)
- Samuel Reed, Bowling Green (math)
- Karen Zianch, Virginia Tech (math ed)

The following MU alumni recently began careers teaching mathematics:

- Noelle Batykefer, MET Charter, Jersey City, NJ
- Jake Bongiovanni, Solanco High, PA
- Sarah Bradley, John Handley High, VA
- Rachel Chioda, Dauphin Co Technical School, PA
- Emily Copenhaver, Francis Scott Key High, MD
- Alexander DiMarzio, Edgewood High, MD
- Jessica Franz, Roanoke City Schools, VA
- Nicole Hartman, Winters Mill High, MD
- Nick Heil, Pine Grove High, PA
- Amanda Hutton, Hand Middle, Lancaster, PA
- Elliott Iula, York Tech, York, PA
- Rebecca Janeshfeskie, Providence, RI
- Meredith Keller, Dundalk High, Baltimore Co, MD
- Jessica Kelly, Shenandoah, VA
- Allison Kibler, Gwynedd Mercy Academy High
- Adam Konsavage, Whitehall High, PA
- Chelsea Leber, North Hagerstown High, MD
- Robert Lehman, North Carroll High, MD
- Michael London, Central Bucks High
- Devin McMullen, West York Area Middle
- Jacob Miller, John Handley High, VA
- Anthony Nicoletta, Gillingham Charter, PA
- Alan Peterson, Millersburg High, PA
- Samantha Ruane, Cocalico Middle, Denver, PA
- Kristina Schultz, NJ
- Matthew Small, Waynesboro High, VA
- Alicia Smith, Signal Knob Middle
- Shaina Smolowe, Manheim Township High
- Ashley Sparks, Jane Long Middle, Bryan, TX
- Mikayla Tollefson, Joppatowne High, MD
- Samantha Ulrich, NE High, Cecil Co, MD
- Amanda Valent, Reynolds Middle, SDol
- Randon Weaver, ELCO High
- Allison Zellner, Edgewood High, MD

**Did we miss you? Has something new happened?**

Send updates to Millersville University Mathematics Dept Alumni

Millersville University is an Equal Opportunity/Affirmative Action institution. A member of Pennsylvania’s State System of Higher Education.