CHAIRPERSON’S MESSAGE

Dear alums, colleagues, students and friends,

It is once again time to report on the goings-on of the Mathematics Department. There have been a lot of changes in the faculty. Two of our longtime faculty members – Shirley Ober and Paula Saintignon – retired at the end of the 2018-2019 academic year. We will miss them immensely. You will find more information on their careers elsewhere in this newsletter. Lynne Yengulalp will be on leave from UD for the 2019-2020 year; she is joining her husband in North Carolina. If all goes well for them, she will not be back. While we wish Lynne all the best for the future, we are sad to lose a valued colleague, dedicated teacher and friend.

We are growing again; I am happy to report that we made two hires last spring. George Todd is joining us as assistant professor this fall. He received his PhD from the University of Arizona in 2015, and he has held a visiting assisting professor position at Union College since then. His research area is number theory. Lisa Wellinghoff earned an MS in Statistics from Wright State University in 2001. She will join the department as a lecturer. Lisa has over 15 years of teaching experience at Wright State University.

We filled the two lecturer positions vacated by Shirley and Paula this summer, and Sukanya Basu and Esmaeil Parsa will join our department as lecturers this fall. Sukanya has a master’s degree and PhD from the University of Rhode Island. Esmaeil has a master’s degree from the University of Tehran, and he just finished his PhD at the University of Montana. We will also have two one-year lecturers to help with our staffing needs: Chris Lammlein and Samy Metry.

We will seek to fill two more positions in the upcoming year, for an assistant professor in partial differential equations and one for a lecturer in mathematics. If you know of anyone who will be on the job market, please alert them! I will be happy to send you our ads when they are ready.

The growth of the department over the last twenty years has been remarkable. When I joined UD in 1998, the incoming class was the largest to date, with 1835 students. That year, the Mathematics Department had 22 full-time faculty. Fast forward to Fall 2019, when we will have 30 full-time faculty, and the enrollment goal for the incoming first-year class is about 2200. This
growth is a testament to the growth of the student body as a whole, particularly in the STEM fields.

During the summer of 2018, we have been able to renovate and completely redesign the Schraut Lecture Hall (SC 323), which was showing its age. We are excited about the new classroom, which accommodates a variety of teaching styles while still providing enough space for large classes. Photos of the new room and a description of the space can be found elsewhere in the newsletter. We thank George Morrison ('82) and his wife Sarah for making a generous contribution to the renovation fund for the Schraut Lecture Hall.

This summer, we are renovating one of our classrooms on the first floor. We swapped rooms with the Physics Department, and our new classroom will be a little larger than the previous room. Plans for a summer 2019 renovation of the main Mathematics Office had to be abandoned due to lack of funds. The redesign would have made the office more functional, improved traffic flow and physically separated the two faculty offices in the suite from the main Math Office. I will continue to advocate for this renovation.

As you peruse this newsletter, you will find that our students and faculty have been active. The Math Club is alive and well. Our majors have embraced the capstone requirement that the university introduced a few years ago, and are pursuing interesting projects that vary from statistics modelling to history of mathematics to group theory. They are interested in working on challenging mathematics, and a good number of them participate in the annual Putnam competition. Our faculty continue to produce quality research and engage in the professional community. They are good citizens of the department and the university, who are invested in the success of our students and our programs and who participate in university governance. I am proud to report on the many activities and achievements of our students and faculty.

I hope you find the newsletter fun and informative. As always, I welcome your updates, comments and suggestions; email me at wiebke@udayton.edu.

Wiebke Diestelkamp

About this newsletter:
You can navigate this newsletter by clicking the links in the Table of Contents (TOC). Clicking on “Back to TOC” will take you back to the table of contents. Other links in the newsletter take you to related items within this document or to related websites. This newsletter reports on the activities of those associated with the Department of Mathematics. Faculty news reported in this newsletter is from the calendar year 2018; news of students and their activities covers the academic year 2018-2019 and the summers preceding and following that period. There is no time restriction on alumni news.

Photographs are courtesy of Aparna Higgins, Pete Hovey, Muhammad Usman, Lynne Yengulalp and Wiebke Diestelkamp. Photographs may not correspond with the text near which they appear.
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Thank you!

Thank you for your generous support of the Department of Mathematics and its activities. Your support helps us to fund conference travel for our undergraduate and graduate students, to host events such as Undergraduate Mathematics Day, the Biennial Career Seminar, the Integration Bee, and the High School Mathematics Competition, and to support the Putnam Competition and the Math Club. The photographs scattered throughout this newsletter give you a glimpse of some of these events.

We are deeply grateful to all of you who contribute to the department.

The University Development Office reports that the following people made donations to the Department of Mathematics during 2018:

Ronald L. Beisel ('63) and Kathleen Beisel
Marcia J. Boyle ('74) and David A. Bryan
Robert E. Buck, Jr., PhD ('69), and Patricia K. Buck
Gregory Campbell, PhD ('70), and Patricia F. Campbell, PhD
Joseph J. Chmiel, PhD ('69), and Dr. Joan Chmiel
Kennon R. Copeland ('75) and Linda Copeland
Paul W. Eloe, PhD, and Laura Schneider Eloe ('84)
Marla Prenger Gross ('90) and Gary Gross
Donna M. Koler
Charles Mott, PhD ('61) and Alicia Fernandez-Mott
Jane E. Pendergast, PhD ('74), and Mark P. Hale, Jr.
Donald J. Kavalunas ('65) and Crystine C. Kavalunas
Timothy J. Rice ('88) and Angela Jacobs ('10)
Thomas J. Santner, PhD ('69), and Gail DeFord Santner ('69)
Carroll R. Schleppi and John R. Schleppi, PhD
Barbara Kieltyka Schwallie ('81) and David F. Schwallie (81)
Leonard M. Sieradski, Jr. ('59) and Floral A. Sieradski
Robert W. Springer ('77)
Susan Miller Thompson, PhD ('81)
Mark A. Turella ('80)
Donald R. Wojciechowski ('72) and Karen S. Wojciechowski

The following corporations provided gifts:

American Endowment Foundation
Fidelity Charitable Gift Fund
Network for Good
Owens-Illinois Charities Foundation
The **Kenneth C. Schraut, Ph.D., Memorial Scholarship** was established in honor Dr. Schraut, longtime chair of the Mathematics Department. We thank the following donors for their generosity and support.

- William S. Cash, PhD ('65)
- Richard J. Fox, PhD ('63), and Joyce E. Fox
- Richard L. Iannarino ('71) and Leslie Kirchmer Iannarino ('72)
- Robert A. Nero ('68) and Mary Strozdas Nero ('70)
- James R. Peters ('74) and Debra K. Peters
- Ronald J. Steinkirchner ('76) and Pamela Strevell Steinkirchner ('76)
- C. Eugene Steuerle, PhD ('68)

The following corporations provided gifts:

- Greene County Community Foundation
- Network for Good

The **Kenneth C. Schraut Memorial Fund** was established in support of the annual Kenneth C. Schraut Memorial Lecture.

- Paul A. Bajorek ('73) and Carol Wawrzyniak Bajorek ('73)
- Joan Kilsheimer Wiggenhorn, PhD ('70), and James T. Wiggenhorn ('70)

In addition to the contributions listed above, George G. Morrison III ('82) and Sarah Morrison contributed a sizable amount to fund the renovation of the **Schraut Lecture Hall** (Science Center Room 323).

**Mathematics Scholarships**
The names of mathematics scholarships established by alums and the undergraduate students who were their recipients for 2018-2019 are listed below.

- **Arnold P. and Rose M. Schoen Scholarship**
  Cathrine Erbacher

- **Kenneth C. Schraut Memorial Scholarship**
  Amelia Pompilio and Kathryn Quinn

- **Bill and Barbara Scharf Scholarship**
  Mary Ghiloni

- **Katherine Koffel Bruning Scholarship**
  Mary Ghiloni
CONGRATULATIONS!

Our faculty and alums received several kudos this year.

Faculty awards

Lynne Yengulalp was the recipient of a 2018 Faculty Excellence Award from the Southwest Ohio Council for Higher Education (SOCHE). The citation states “Lynne combines group work, lecture, and technology to create a lively student-centered learning environment. She has advanced testing processes in the department and serves as an excellent mentor for math students. She also engages the community, working with middle school children to help them enjoy math.”

Catherine Kublik and Jon Brown won the 2018 and 2019 Dr. Kenneth Schraut Faculty Research Award in Mathematics at the University of Dayton, respectively. Established by Doc Schraut's daughter, Marilyn Szorc, the award provides $1200 to be used by the recipient in their research.

The Dr. Kenneth Schraut Faculty Research Award in Mathematics at the University of Dayton is designed to aid faculty members of the Mathematics Department in their research. Established by Doc Schraut's daughter, Marilyn Szorc, the award provides $1200 to be used by the recipient in their research. Applications are due in February of each year, with the Chair selecting the recipient (in consultation with the Dean) in March.

Recipients are:
2014 Lynne Yengulalp
2015 Catherine Kublik
2016 Alan Veliz-Cuba
2017 Muhammad Usman
2018 Catherine Kublik
2019 Jon Brown

MathEvents

Biennial Alumni Seminar

The 28th Biennial Career Seminar, coupled with the 19th Annual Kenneth C. Schraut Memorial Lecture, was held on Saturday November 3, 2018, in the Science Center. The format of the day’s events followed those formats of the past two decades. We gathered in the late morning to meet old friends, introduce current students to alumni, and enjoy light lunch and registration. The Schraut Memorial Lecture was delivered first, in the early afternoon. This year, Benjamin Wilson, Vice President of Math Club, chaired the Schraut Memorial Lecture.
Immediately following, Peter Kawiecki (’18, ’19), President of Pi Mu Epsilon, moderated the Career Panel in which the panelists share their experiences and wisdom to the current student body and frankly, to the faculty members. We closed the event with “break-out sessions” giving the students the opportunity to talk further with panelists and alumni. Attendance was quite good with more than 100 participants, and the “break-out sessions” seemed to have added life this year.

This year’s Schraut Memorial Lecturer was Kennon Copeland (’75), Senior Vice President of Statistics and Methodology at the National Opinion Research Center at the University of Chicago. He spoke on “Measuring Flu Vaccination Rates.”

Alumni Career Panel:
- Craig Birkemeier (’11), Mathematics Faculty, Sinclair Community College
- Christopher Cabanski (’07), Biostatistician, Parker Institute for Cancer Immunotherapy
- Katherine Campbell (’15), Pension Actuary, Aon Hewitt
- Kennon Copeland (’75), National Opinion Research Center, University of Chicago
- Matthew DeVilbiss (’16), Graduate Student, University of Illinois at Chicago
- Marla Gross (’90), Statistician, P & G (retired), Tutor
- Kaitlyn Jones (’17), Analyst, The Perduco Group
- Matthew Keck (’06), Director, IT Architecture for Nationwide Insurance
- Catherine Kublik, Mathematics Faculty, University of Dayton
- Nicholas Kuprowicz (’96), Senior Aerospace Engineer, Air Force Research Laboratory
- Scott Mitter (’01), Mathematics Teacher, Fairmont High School
- Maura K. Moran (’77), Partner, Cambridge Technology Law
- Martin Morris (’15), Capital Markets and Structured Solutions Analyst, Arch Capital Group
- Zi Ouyang (’13), Medical Physics Resident, Cleveland Clinic
- Robert Phipps (’01), Property & Casualty Actuary, Westfield Insurance

You can access the entire program at https://www.udayton.edu/artssciences/academics/mathematics/events/alumni-seminar/index.php.

Special thanks go to Kennon Copeland for accepting our invitation and delivering the Schraut Memorial Lecture, and to the Career Panelists for their contributions, noting their generosity with time and resources (as we do not offer travel support). We also thank Thomas Santner (’69) for joining the statisticians during the “break-out sessions,” and we thank Frank and Marilyn Szorc for joining us. And we thank our generous alumni whose support helps to sponsor the annual Math Events.
Many thanks also go to Dr. Shawn Swavey, the Brother Leonard A. Mann, S.M. Chair in the Sciences at UD, who generously supported the event and provided the opening remarks. And, of course, we thank Jon Brown and Paul Eloe, who co-organized the event.

**Save the date: Undergraduate Mathematics Day**

This biennial conference will be held on **Saturday, November 2, 2019**. We welcome contributed talks by students (high school, undergraduate, and graduate). Dr. Tommy Ratliff of Wheaton College will give the Schraut Lecture, and Dr. Rachael Kenney ('99, ’00) of Purdue University will deliver a second plenary lecture. Jon Brown and Dan Ren are the organizers of this MathEvent. See [http://go.udayton.edu/mathevents](http://go.udayton.edu/mathevents) for more details.

**Math Department Fall Poster Session**
December 6, 2018

This is a new event, created to allow students to showcase their work at the end of the fall semester. Undergraduate students may present posters on their capstone project, honors thesis, summer research or other project. Graduate students are encouraged to present their current work as well. The inaugural poster session was organized by Jon Brown and Catherine Kublik.

**Posters by undergraduate students:**

A Cross-National Study of Whole Number Addition by Mary Ghilioni (Dean’s Summer Research Fellowship Project). Advisor: Becky Krakowski.


The 9-Point Circle Theorem by Kate Quinn (Capstone Project). Advisor: Becky Krakowski.

Tuning a Radio with Calculus by Nathaniel Rosenwald (Calculus Class Project). Advisor: Jon Brown.


**Posters by graduate students:**


Collocation Methods for PDEs by Lijun Lin (Math Clinic). Advisor: Muhammad Usman.
## FACULTY UPDATES

### Full-time faculty (with date of appointment)

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Appointment</th>
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<tbody>
<tr>
<td>Atif Abueida</td>
<td>2000</td>
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<td>Nick Axmaker, 2018-2019</td>
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<td>Jonathan Brown, 2014</td>
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<td>Arthur Busch, 2006</td>
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<td>Ying-Ju (Tessa) Chen, 2017</td>
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<td>James Cordeiro, 2017</td>
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<td>Wiebke Diestelkamp, 1998</td>
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<td>Shannon Driskell, 2003</td>
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<tr>
<td>Paul Eloe, 1980</td>
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<td>William (Brink) Harrison, 2009</td>
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<td>Aparna Higgins, 1984</td>
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<td>Peter Hovey, 2001</td>
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<td>Muhammad Islam, 1985</td>
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<td>Rebecca Krakowski, 2000</td>
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<td>Catherine Kublik, 2013</td>
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<td>Andres Larrain-Hubach, 2016</td>
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<td>Ruighua Liu, 2004</td>
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<td>Joe Mashburn, 1981</td>
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<td>Shirley Ober, 1977</td>
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<td>Maher Qumsiyeh, 2008</td>
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<td>Youssef Raffoul, 1999</td>
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<td>Sasith Rajasooriya, 2018-2019</td>
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<td>Dan Ren, 2013</td>
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<td>Paula Saintignon, 1983</td>
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<td>Muhammad Usman, 2007</td>
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<td>Alan Veliz-Cuba, 2015</td>
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### Adjunct Faculty

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<td>Bob Bennington</td>
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<td>Steve Buerschen</td>
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<td>Will Mitchell</td>
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<td>Karen Connair</td>
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<td>Jacob Daniel</td>
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<td>Mark de Saint-Rat</td>
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<td>Bob Flavin</td>
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<td>Mark Hoffman</td>
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<td>Sue Holloway</td>
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<td>Chris Lammlein</td>
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<td>Samy Metry</td>
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<td>Will Mitchell</td>
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<td>Jose Philip</td>
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<td>Les Steinlage</td>
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<td>Sam Wright</td>
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<td>David Yoder</td>
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In addition, the Department of Mathematics employs over thirty students (undergraduate and graduate) each semester to help in delivering our courses. Most of these students are teaching assistants to faculty, but some of the graduate students teach their own classes, usually MTH 114 Contemporary Mathematics, a course for liberal arts majors.

### Retired faculty (with date of retirement)

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Retirement</th>
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<tbody>
<tr>
<td>Tom Gantner, 2001</td>
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<td>John Kauflin, 2005</td>
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<td>Harry Mushenheim, 2005</td>
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<td>Jerry Neff, 1999</td>
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<td>Richard Peterson, 1998</td>
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<td>Carroll Schleppi, 2001</td>
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<td>Gerry Shaughnessy, 2012</td>
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<td>Lester Steinlage, 2016</td>
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<tr>
<td>Ralph Steinlage, 2001</td>
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<tr>
<td>Jerry Strange, 1999</td>
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## FACULTY ACTIVITIES

Department faculty members are active in all aspects of their work as productive researchers, as caring educators, as mentors for students, and as members of the university and our profession. Here is a snapshot of faculty activities for the calendar year 2018.
Jonathan Brown was awarded the Dr. Kenneth Schraut Faculty Research Award for 2019. He spent a week in October 2018 in residence at the American Institute of Mathematics (AIM) to work with A. Fuller, D. Pitts and R. Reznikoff on their project “Coordination of graded C*-algebras.” The research was funded through the AIM SQuaREs grant they had won the previous year. Jon organized the participation of American researchers in the Young Mathematicians in C*-algebras conference held at KU Leuven in Belgium. He also supervised the capstone project of Chloe Beckett (’19).

Ying-Ju (Tessa) Chen recruited a team of five undergraduate students to participate in the DataFest at the Miami University in April 2018. She participated in the Wakonse Conference on College Teaching May 2018 and became a Wakonse fellow. Tessa was Co-PI on a funded grant from the University of Cincinnati Education and Research Center Pilot Research Project Training Program (Leonard, R. (Principal), Chen, Y.-J. (Co-Principal), Megahed, F. (Co-Principal), Cavuoto, L. A. (Co-Principal), Grant, "ASSURED: Analytical Support System for Understanding Risk Exposure to Drivers). She co-authored the article “Information Approach for a Lifetime Change-Point Model Based on the Exponential-Logarithmic Distribution” (with Ning, W.), Communications in Statistics - Simulation and Computation (2018). Tessa presented the poster “A data analytic framework for physical fatigue management using wearable sensors” at the Joint Research Conference on Statistics in Quality, Industry and Technology. She attended the Statewide Users Group Conferences at the Ohio Supercomputer Center in April and October, and the Women in Statistics and Data Science Conference in October 2018. She also supervised the capstone project of Kaity Jones (’19) and Sarah Hartness (’19).

James Cordeiro attended the Joint Mathematics Meetings in January 2018. He gave a contributed talk entitled “Ergodicity of a Level Dependent Quasi-Birth and Death (LDQBD) Process via the Generalized Inverse” at the 9th International Workshop on Applied Probability in Budapest, Hungary. He worked with undergraduate student George Zavakos (MTE) on the project “Using Hidden Markov Models to Predict Equity Prices,” and with Jack McCarthy (CPS) on the project “Inventory model with batch demands and unreliable service in a Markovian environment.”

Wiebke Diestelkamp was elected to a two-year term as the physical & life science representative of the Dean’s Executive Council. She also chairs the Science Subcouncil of the College of Arts & Sciences. Wiebke continues to serve on the Science Center Renovation Committee, which is charged with developing plans for the renovation and redesign of spaces in the Science Center that more adequately serve the teaching and research mission of the sciences. She served on the College of Arts & Sciences Lecturer Promotion Policy Working Group. This committee produced a first draft of a lecturer promotion policy for the College, in response to the creation of a path to promotion to senior lecturer and principal lecturer by the Academic Senate.
Wiebke again served as a reviewer for the University of Dayton STEM Catalyst grant program, an initiative to invest in and support faculty and student STEM research at the University of Dayton. She consulted on music therapy research projects with Beth Schulz and James Hiller in the Department of Music. Wiebke served as referee for a special issue of PRIMUS: Problems, Resources and Issues in Mathematics Undergraduate Studies. She was selected as consultant for new Project NExT Fellow (New Experiences in Teaching), and she continued to mentor a woman early career faculty for the Mentoring Network of the Mathematical Association of America.

Shannon Driskell was on sabbatical during the 2017-2018 academic year and returned to teaching in Fall 2018. While on sabbatical, she and Jonathan Brown analyzed data they had collected from two different courses for elementary preservice teachers’ on their mathematical mindsets. They presented their preliminary results in February at the Association of Mathematics Teacher Educators Annual Conference and are writing a manuscript to share their results. As a Co-PI, Shannon also continued to support the Engineering and Science Foundation of Dayton funded grant: Using Engineering Design to Increase Literacy and STEM Interest among Third Graders. She continued research on the use of digital curricula in teaching mathematics in Grades K-5 and published the results: Driskell, S. O., Rhine, S., & Harrington, R. (November 15-18, 2018). Developing a Research Agenda of K–8 Teachers’ Implementation of Digital Curricula. In T. E. Hodges, G. J. Roy, & A. M. Tyminski (Eds.), Proceedings of the 40th Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education. Shannon also presented with Mr. David Herick, a local fifth grade teacher, at the 2018 Ohio Council of Teachers of Mathematics: Herick, D., & Driskell, S. O. (2018, October 11). Living Tiny in Math Class: The Tiny House Project to Support Geometric Concepts.

Paul Eloe enjoyed his first year with no administrative duties since, he thinks, 1989, and focused on classroom teaching, research with master’s candidates and research with professional collaborators. This past year he has supervised the research of Ebtsam Alrasheedi (MAS 2018) and Nouf Alsomali (MFM) who has applied for graduation in August 2019. For the past two summers, Jagan Mohan Jonnalagadda, Birla Institute of Technology and Science Pilani, Hyderabad, spent time in Dayton as a Visiting Scholar at the University of Dayton to collaborate with Paul. Several co-authored article appear in print, several are under review and there are still some manuscripts in preparation. In the fall term 2018, Jeffrey Neugebauer ('06, '08) was in Dayton as a Visiting Scholar at the University of Dayton. Paul and Jeff began their collaborations in 2014 and so, this past fall was both very productive and enjoyable.

Aparna Higgins presented the twentieth edition of an MAA minicourse “Directing Undergraduate Research” at the San Diego Joint Mathematics Meetings in January. She was a judge at the student poster session at those meetings. She attended the UD alum gathering in San Diego – two alums, three faculty, and one friend of UD had dinner and great conversation. Aparna had a wonderful time crafting an invited plenary address for the fall meeting of the Ohio Section of the MAA. Her talk was entitled “Adding (Repeatedly) and Finding Averages (Repeatedly).” The talk was based on two papers that had appeared in MAA journals, and was
designed to show that investigating simple questions can provide unexpectedly deep results. Aparna continues to experiment with projects/papers and homework journals in her courses.

Aparna serves as a consultant to a Project NExT Fellow from the 2018-19 cohort. Aparna held twice-weekly two-hour training sessions for the Putnam Competition starting in mid-October, and she enjoyed working with the students who attended. Although attendance was not a requirement for participation in the Putnam Competition, there was a core group of students who attended almost every session. Five of our thirteen participants earned a non-zero score on the Putnam Competition.


Muhammad Islam co-authored (with Jeff Neugebauer (’06, ’08)) an article entitled “Asymptotic stability of functional equations by fixed point theorems,” published in Communications in Applied Analysis, 22(4), 611-621, 2018. He presented an invited talk entitled “Fractional Differential Equations of Riemann-Liouville Type and Caputo Type”, in a special session at the American Mathematical Society Sectional meeting, Ohio State University, Columbus, Ohio, in March 2018. Islam served on a number of PhD committees in the School of Engineering. He worked with Emily Seals (’18) and Leah Squiller (’19) on their respective capstone projects.

Becky Krakowski worked with Sarah E. High (MME 2018) or her Math Clinic Project (“The Effects of Student Teams Achievement Divisions (STAD) Cooperative Learning on Mathematics Achievement”). She also directed the Math Clinic project of Jenna Maksiymiak (MME 2018) entitled “Flipping the High School Mathematics Classroom: Effects on Student Academic Success and Attitude.” Becky also directed the capstone projects of Ethan Trapani (’19), Kate Quin (’19), Lauren Morgan (’19) and Bobby Mumma (’19). Becky also directed the research project “A Cross-national Study of Whole Number Addition and Subtraction” by Mary Ghiloni, who won a Dean’s Summer Research Scholarship for 2018. Mary presented her work at the Mathematics Fall Poster Session and at the Stander Symposium.

Catherine Kublik was awarded the Dr. Kenneth Schraut Faculty Research Award for 2018. She co-authored two articles: (1) Kublik C. and Tsai R., An extrapolative approach to integration over hypersurface in the level set framework, Math. Comp. 87 (2018), pp.2365-2393; and (2) Eloe P. and Kublik C., When numerical analysis crosses paths with Catalan and generalized Motzkin numbers, J. Integer Seq. 21 (2018) Article 18.8.4. She received an ISE summer fellowship, and (with Alan Veliz-Cuba) mentored Zeyu Wang (’18) on the project “Differential Equations in Coral Restoration.” She was invited to present a talk at the Workshop on Advanced Developments for Surface and Interface Dynamics - Analysis and
Computation at BIRS (Banff International Research Station) in Banff, Canada (June 2018) and at the AMS Fall Eastern Meeting in Newark, DE (Sep 2018). She also gave a colloquium talk at Wittenberg University. Catherine continued to advise the Math Club.

Andres Larrain-Hubach participated in the International Congress of Mathematicians in Rio de Janeiro in August 2018 and in the conference “Current Developments in Mathematics” at Harvard University in November 2018. He directed Noelle Rizzo’s ('19) capstone project, and he gave a talk in the UD Math Club.


**Dan Ren** published two articles: (1) Optimal Stopping for the Last Exit Time, Bulletin of the Australian Mathematical Society, 99(1), 148-160; (2) Optimal Asset Allocation with Stochastic Interest Rates in Regime-Switching Models, with Cheng Ye and **Ruihua Liu**, Int. J. Theor. Appl. Finance, 21 (2018), no. 5. Dan gave a colloquium talk at Worcester Polytechnic Institute in March 2018, and she attended the workshop “A Symposium on Optimal Stopping” at Rice University in June 2018. She directed the capstone project of **Yitian Wang** (’19) and supervised the Math Clinic project of **Peter Kawiecki** (MFM 2019).


Lynne Yengulalp published the article “Polish factorizations and subcompactness” (with Jila Niknejad and Vladimir Tkachuk) Bulletin of the Belgian Mathematical Society, volume 25, issue 3, pages 439 - 452, 2018. She received a 2018 Award for Faculty Excellence from the Southwest Ohio Council for Higher Education. She is the PI on a $49,000 NSF conference grant for the 34th Summer Conference on Topology and its Applications, to be held in Johannesburg, South Africa.
Lynne will be a Visiting Assistant Professor at Wake Forest University in Winston-Salem, NC for the 2019-2020 academic year while she is on a leave of absence from UD. Lynne will likely stay in Winston-Salem permanently after the leave, joining her husband, Serhan, who started a new job there.

Faculty Retirements

Bob Flavin and Les Steinlage (’65, ’69) “retired for good” at the end of the 2018-2019 year. The next academic year will be the first one since 1961 (!) that Les is not associated with the university as a student or teacher. Bob cannot quite claim that, but he has given twelve years of part-time service to our department. Both have been very popular teachers in the course sequence for business students (MTH 128 Finite Mathematics and MTH 129 Business Calculus), and they will be greatly missed by all.
Shirley Ober and Paula Saintignon ('82) retired at the end of the 2018-2019 academic year. They have been invaluable members of the department for many years. They will be greatly missed!

CITATION
On the occasion of her RETIREMENT
Shirley J. Ober

Shirley Ober graduated summa cum laude with a BS in Mathematics Education from Edinboro University of Pennsylvania in 1970 and obtained an MA in Mathematics from the State University of New York at Buffalo in 1972.

She started teaching part-time for the University of Dayton in 1977, and she became a full-time lecturer in 2000. She has regularly taught in the mainstream calculus sequence.

Shirley was instrumental in developing the MTH 137/138 Calculus with Review sequence that incorporated aspects of precalculus in a one-year calculus I course. The sequence became a required course sequence for engineering technology majors. Other engineering students who lacked the proper preparation for calculus were placed in the sequence as well. Together with the necessary precalculus refresher, the two courses deliver the material in MTH 168, allowing students who need more calculus to proceed to MTH 169 and beyond. Shirley has been in charge of MTH 137/138 ever since, helping faculty who teach the course for the first time, including adjunct faculty.

The School of Engineering has relied on her to be assigned to sections that are geared toward students who are identified as needing additional resources. Certain “permission only” sections of MTH 137, MTH 138, MTH 168 and MTH 169 have been designated for those students, and Shirley has routinely been assigned to these sections.

Shirley is an effective teacher. She expects her students to work hard, but she is also always available outside class to provide help during office hours. She routinely receives very good teaching evaluations, and students clamor to be in her courses.

During her years at the university, Shirley was honored by the Sigma Chi Fraternity with the Iota Theta Teacher Appreciation Award for Excellence and Leadership. She was also honored by the Society of Women Engineers with the Distinguished Engineering Educator Award. This award
recognizes an engineering educator who has made contributions to the engineering profession. Shirley also served as adviser to the Frisbee Golf Club for three years.

Shirley Ober has made invaluable contributions to the teaching mission of the department and the university. She will be greatly missed, both by her colleagues and her students.

CITATION
On the occasion of her RETIREMENT
Paula Saintignon

Paula Saintignon graduated Summa Cum Laude with a BS in education from Bowling Green State University in 1978. She taught for two years at Valley View High School in Germantown, OH, before entering the University of Dayton to pursue a master’s of science degree in mathematics. She obtained the MS in 1982, graduating with a 4.0 GPA.

She then held a position at the University of Dayton Research Institute, where she developed mathematical models and wrote software for digital human modelling.

Paula returned to the Department of Mathematics at UD in 1983, first as an instructor and then as a lecturer. She has taught a wide variety of courses, ranging from college algebra and courses for business majors to a variety of calculus courses, to differential equations and linear algebra.

With a colleague in the Department of Mathematics, she obtained grants through the Fund for Educational Development to develop and implement a mathematics placement test for incoming students at UD. The test was administered to incoming students for ten years.

Most recently, Paula has served as the coordinator for the calculus sequence for life science students for a number of years. She maintains the syllabus and assists faculty when they teach the courses for the first time.

Paula is one of the most popular teachers in the Department of Mathematics. Her classes always fill up quickly, even when they are scheduled at 8:00 AM. Her students find her challenging but fair, and they appreciate that Paula always works hard to help students live up to their potential. She is genuinely interested in her students’ success, and she makes herself available outside class when her students need extra help.

Paula has made invaluable contributions to the teaching mission of the department and the university. She will be greatly missed, both by her colleagues and her students.
Capstone requirement for graduation:

Every student at UD must fulfill a capstone requirement. Although the capstone experience varies from department to department, it should provide students the opportunity to integrate and use the knowledge and skills they have gathered in their major courses, and to be able to reflect on their vocations. In our department, each student works with a faculty member on a project that they then present in some forum. Projects vary greatly – the list below lists capstones that were completed in the 2018-2019 academic year.


“Median Housing Prices in the Boston Area” by Danny Jeffrey Fleming (’19). Advisor: Pete Hovey.


“Ferrari’s Solution of the Quartic Equation” by Lauren Ashley Morgan (’19). Advisor: Becky Krakowski.


“The 9-Point Circle Theorem” by Kate Quinn (’19). Advisor: Becky Krakowski.


Department colloquium
Every Thursday, the faculty and graduate students gather for a department colloquium. Our speakers include graduate students presenting their Math Clinic projects, our own faculty, and visiting faculty (who are sometimes alums!). The complete schedule is at https://udayton.edu/artssciences/academics/mathematics/events/colloquium/index.php

Renovation of Schraut Lecture Hall
In the summer of 2018, the Schraut Lecture Hall received a much needed update. We changed the orientation and removed the tiers to allow for movable tables. There are three large chalkboards in the front, and whiteboards on one side and in the back of the room, allowing for work to be displayed in various places. We have two large screens (in the front and on the left and right sides), which leaves ample board space free to use while the screens are down.

There are a number of small, portable whiteboards that can be used to display the results of group work (or as Jeopardy!-style separators during tests). There are two large built-in closets on one side. They hold all the materials to run a student-centered mathematics education class for preservice teachers.

We are very grateful to George Morrison (‘82) and his wife Sarah, who made a sizeable donation toward the renovation of this classroom in honor of Doc Schraut.

UNDERGRADUATE STUDENT ACTIVITIES
Our undergraduates keep busy all year with many extra-curricular mathematics-related activities.

UD Math Club and Pi Mu Epsilon Chapter
The UD Math Club meets jointly with our Pi Mu Epsilon chapter during the year. An exception is the annual Pi Mu Epsilon dinner at which new members of this national honorary society are inducted into the Ohio Zeta Chapter (our Chapter!). We refer to this combined student group as “The Math Club” for convenience.
The officers for the academic year 2018-2019 were:
President: Amelia Pompilio ('19)
Vice-President: Ben Wilson
Treasurer: Christian Hemsath
Secretary: Mary Ghiloni
Pi Mu Epsilon President: Peter Kawiecki ('18, MFM '19)

Math Club meetings are held about once a month. There is a short talk; there are games; there is pizza and pop. Above all, it is a meeting of energetic students and faculty, all of whom are interested in mathematics. Speakers in 2018-2019 included Christian Hemsath, a UD major who spoke on his summer research regarding Bender’s Theorem (from the TV show Futurama), our own Jon Brown (Game Theory) and Andres Larrain-Hubach (Homotopy in Topology). In addition, talks were presented by Markus Rumpfkeil, a UD engineering faculty member, who talked about computational fluid dynamics and aerospace engineering, and Amy Magnus from the Air Force Research Laboratory who gave a talk on artificial intelligence.

You can follow the UD Math Club on Instagram: @UDMathClub

The faculty advisor for the Math Club was Catherine Kublik, who has served in that capacity for five years. While she thinks it is time for this change, Catherine very much enjoyed being involved in the Math Club. The club has thrived during her tenure, with regular, well-attended monthly meetings that feature talks by UD faculty and students and outside speakers, as well as mathematics-themed movies, games or puzzles. Catherine is most proud of recruiting a more diverse set of high schools for the High School Math Competition. Institutions that were recruited to the competition during her tenure include Fairmont, Oakwood, Stebbins, Springboro and Dayton STEM School. She put a lot of effort into all aspects of the competition, but she emphasized the recruitment of new high schools. She says that “It was rewarding to see all these high school students come and have fun doing mathematics together.” What she liked best about her role as faculty advisor was “listening to all the wonderfully varied math talks at the math club meetings, talking to the high school teachers at the High School Math Competition, and seeing their (and the students’) enthusiasm for the event.”

Becky Krakowski will take over as Math Club advisor in the fall of 2019.
Pi Mu Epsilon Induction

The Dayton chapter of Pi Mu Epsilon held its annual induction ceremony on April 2, 2019. Eight new members were inducted:

- Jason Bassil
- Matthew Dies
- Christian Hemsath
- Wyatt Lee
- Kate Rustige
- Paul Scheeler
- Thomas Sebelski
- Benjamin Wilson

A dinner with the inductees, current members of Pi Mu Epsilon and faculty was followed by the formal induction and a talk by Tessa Chen entitled “A Two-Stage Machine Learning Approach to Predict Heart Transplantation Survival Probabilities over Time with a Monotonic Probability Constraint.”

Lynne Yengulalp has been the advisor to UD’s Pi Mu Epsilon chapter. Since Lynne is not likely to return to UD, she has relinquished this role, and Andres Larrain-Hubach is the new Pi Mu Epsilon advisor.

High School Mathematics Competition

On Saturday, March 2, 2019, the UD Math Club held the 23rd Annual High School Math Competition. Thirty-nine students from seven different high schools participated in this year’s competition. Represented were Carroll High School, Dayton Regional STEM School, Fairfield High School, Fairmont High School, Oakwood High School, Springboro High School and Stivers School for the Arts.

The winning team was $T^3$ with 1000 points, scoring the maximum number of points possible. The team Infinity + 1 claimed second place with 950 points. Both teams hailed from Oakwood High School. In third place was Phenominators from Carroll with 900 points.

The officers of the Math Club did a great job organizing the event, ordering all the food and helping during the event itself. While they graded the team’s answers, Lynne Yengulalp gave a hands-on talk entitled “Picture hanging puzzles,” which was a great hit with the students.

Features of the High School Mathematics Competition

- Team competition, with the teams moving from station to station.
- Each station represents a topic (say, geometry).
- At each station, three problems at three levels of difficulty and, consequently, three levels of points obtainable.
- The team must turn in a solution to at most one of those problems.
• A team may not return to that station during the rest of the competition.
• The maximum number of points is 1000. The team with the most points wins. In case of ties, the team with the earlier finish time wins.
• Math Club members write the problems and solutions, and department faculty check them for clarity of questions, correctness of solutions and assignment of difficulty level.
• Math Club officers organize the event and order the food
• Math Club members serve as proctors, runners and graders.

Here are the 2019 questions from the Counting category:

**Easy (25 Points)**
James is picking out an outfit to wear for the cold weather. He needs to wear either his red coat or his blue coat. His red coat is not quite as warm as his blue coat, so if James wears the red coat, he will also need to wear one of his 4 scarves. If he wears his blue coat, he cannot wear a scarf because it would make him too hot. No matter which coat he chooses, James will also need to wear one of his 3 hats to keep his ears warm. How many different winter outfits can James choose from?

**Medium (50 Points)**
There are ten restaurants near Sam’s house, all of them serve breakfast, lunch, and dinner. One day, Sam decides to go to a different restaurant near his house for each of his three meals. He is not too picky and doesn’t care about which restaurant he visits for any particular meal, so he will let his picky brother Alex, who has decided to come along, choose the order when it is time to leave. Sam’s only preference is that he doesn’t want to eat at Marion’s Pizza and Dewey’s Pizza on the same day because he gets tired of pizza easily. How many ways can Sam choose three out of the ten restaurants to visit?

**Hard (100 Points)**
A certain combination lock has 3 places to input a digit from 0 to 4 (inclusive). However, something is broken inside the lock’s internal mechanism, so some 3-digit codes cannot be inputted. A code can be inputted if the second digit is greater than or equal to the first digit, and the third digit is greater than or equal to the second digit. For example: 000, 123, 144, 224 are valid, but 010, 432, 231 do not work. How many valid codes are there?

**Honors Student Symposium**
The symposium provides a venue for students in the University Honors Program to present the results of their research in a professional conference setting to an audience of peers and faculty from across the University. The symposium was held on March 22, 2019.

Lauren Geiser, who is double-majoring in mathematics and biology, presented “Steady States of Gene Networks with AND/OR Gates.” Her thesis advisor was Alan Veliz-Cuba.
The Putnam Competition

The seventy-ninth annual William Lowell Putnam Mathematical Competition was held on Saturday, December 1, 2018. Thirteen UD undergraduates participated in the Putnam competition. (Students with an asterisk earned a positive score.) The Department of Mathematics (funded by generous alumni donations) paid for lunch at Milano’s (on Brown Street).

| Jason Bassil* | Zayne Parsons | Paul Scheeler* | Thao Truong* |
| Sergio Calderon | Amelia Pompilio | Michael Simpson* | Zeyu Wang |
| Nathan Makowski | Zachary Rowland* | Matthew Spangler | Benjamin Wilson |
| Duong Nguyen |

The competition is an individual competition, with six questions in the morning and six more in the afternoon. This is a difficult commitment for the students – three hours in the morning, and three more hours in the afternoon – on a Saturday less than a week before the semester ends. We are very proud of these students. Several of the students attended Putnam “prep sessions,” this year. These voluntary sessions were held for a two-hour period every Monday and Friday starting in mid-October. Aparna Higgins ran these sessions. Interested students worked with her on old Putnam problems and learned some mathematics and some writing techniques along the way.

Internships and undergraduate research

Chloe Beckett (’19) had an internship at Merchants and Bonding Company in Cleveland.

Elizabeth Boeke (’19) worked as the Air Force Research Laboratory as a data engineer.

Danny Fleming (’19) completed an internship at Medical Mutual of Ohio in Cleveland in the summer of 2018. He worked in the Cash Control department.

Mary Ghiloni was awarded a Dean’s Summer Research Fellowship for 2018. Under the direction of Becky Krakowski, she worked on a project entitled “A Cross-National Study of Whole Number Addition.”

Sarah Hartness (’19) completed a Co-op during the spring and summer 2018 at Conger Construction Group.
Christian Hemsath served as a research fellow in the dean's summer scholarship program at UD in the summer of 2018, working with Lynne Yengulalp on research into topological spaces and game theory.

Kaity Jones ('19) had an internship at Pension Design Group in Wilmington, OH, in the summer of 2019. This was the second summer during which she interned at this company.

Leah Squiller ('19) completed an internship at Applied Optimization in Fairborn, OH.

Math In Moscow

Amy Pompilio ('19) spent the Spring 2019 semester in Russia, as a participant in the Math in Moscow program (https://mathinmoscow.org/). She thoroughly enjoyed herself and is recommending the program to everyone. Here is her reflection on the program: “I’ve heard it said before that you can do anything with a math degree, but I didn’t expect that mine would take me all the way to Moscow, Russia! For my spring 2019 semester, I attended the Math in Moscow study abroad program for math majors and had the learning experience of a lifetime. The best way to describe Math in Moscow is “immersive.” The program takes place at the Independent University of Moscow, which teaches mathematics and mathematics only. There were equations and geometric figures painted all over the walls, and the whole building was constantly buzzing with the sounds of math classes taught in both Russian and English. While I was there I took advanced linear algebra, non-Euclidean geometry, complex analysis, and topology. No two classes were the same, and each one met once a week in a three-hour block. I had never been in a math class that long before, but the class length was one of the elements that made the semester so immersive and special. We always had ample time for hands-on learning and tangential discussions about the material. The program was definitely challenging, but being surrounded by a cohort of motivated math students made the work exciting and fun (plus, it hardly even felt like "work" when we were all hanging out in the study room solving problems together). I can’t wait to see future UD students attend this program and show their stuff -- this program showed me how well UD prepared me for a math career of my own!”

The Twenty-First Annual Nebraska Conference for Undergraduate Women in Mathematics
January 25 – 27, 2019

The Department of Mathematics sponsored Amy Pompilio and Leah Squiller to attend this prestigious, popular and empowering conference. Both found the experience very worthwhile.

Amy writes “The Nebraska Conference for Undergraduate Women in Mathematics was such an empowering experience. Being surrounded by women who all share the same passion is a rare
opportunity, and we learned so much in a few short days. The conference showcases all kinds of careers in math, and offers insight into what those careers look like at every stage. While the conference definitely has a huge focus on exceptional undergraduate research, I think the biggest takeaway from the conference is the wisdom that gets passed down to each cohort of undergraduate women who have the opportunity to attend. We got the chance to meet amazing women faculty from across the nation and hear about their work. It was so fun to meet new people and make new friends knowing that someday, we might be colleagues! It was an honor to represent UD at the conference as well. When we told people that out of 6 students in Real Analysis back home, 5 of us were women, they were shocked. I feel lucky to have had an undergraduate career where that was my everyday experience.”

Leah added “The Nebraska Conference was the first conference that I attended, and I expected to feel intimidated by all of the incredible women there, but they could not have been more approachable and welcoming. It was an excellent opportunity to meet other women in the same position as you and realize the similarities between you. In addition, it allowed us to make connections within the math community that could lead to opportunities in the future. I feel very lucky and grateful that we were given the opportunity to attend.”

Student Awards

Waldemar J. Trjitzinsky Scholarship
Each year, the American Mathematical Society (AMS) awards Waldemar J. Trjitzinsky Scholarships of $3,000 each to undergraduate students majoring in mathematics. Institutional members of the AMS are chosen at random and asked to select a student deserving of the award. The scholarships are funded by a 1988 bequest in memory of Waldemar J. Trjitzinsky and are intended to assist students who lack adequate financial resources.

We are very pleased to announce that the Department of Mathematics at the University of Dayton has been selected to receive one of these scholarships for the 2018-2019 academic year. The recipient of the award will be Mary Ghiloni, a junior who is pursuing degrees in mathematics and in adolescent to adult education at UD.

Mary is a member of the Ohio Zeta chapter of Pi Mu Epsilon and the secretary of the Math Club. In the summer of 2018, she received a Dean’s Summer Research Scholarship. She researched the curriculum of Finland, Singapore and the United States and looked in depth into how these countries develop the concept of addition and subtraction through their textbooks under the guidance of Becky Krakowski. Mary is passionate about both education and Mathematics and hopes to become not only a teacher, but a mentor to her students.

You can read the news item released by the AMS about the 2018 Trjitzinsky Scholarships at http://www.ams.org/news?news_id=4610

**Awards determined by the faculty of the Department of Mathematics**

The Mathematics awards are presented at the Senior Banquet each year. The Senior Award of Academic Excellence in Mathematics in recognition of exceptional achievement and high academic standing in mathematics went to **Leah Marie Squiller**. The Award for Excellence in Support of Mathematics in recognition of exceptional achievement in support of mathematics was awarded to **Amelia Isabella Pompilio** and **Michael Markell Simpson**. The Sophomore Award for Excellence in Mathematics in recognition of exceptional achievement and high academic standing in mathematics went to **Jason Bassil, Christian S. Hemsath** and **Julia M. Weber**.

**Other awards received by Mathematics majors**

**Amy Pompilio** ('19) received a Cordell F. Hull International Fellowship. These fellowships, administered by the Honors Program, are awarded to support transformative international learning, leadership and service experiences for Honors students.

**Noelle Elise Rizzo** ('19) was awarded the 2019 Dr. Margaret P. Karns Award for Academic Excellence and Service in Global and Local Issues; the Margaret Mary Edmonds Huth Memorial Award of Excellence to the Outstanding Senior in Anthropology; and the Maureen O’Rourke Marianist Student Award.

**THE STANDER SYMPOSIUM**

April 24, 2019

Every year, many mathematics students (and students in mathematics courses) participate in this “alternative day of learning,” which is a campus-wide event that celebrates academic excellence. The day is named after Bro. Joseph W. Stander, S.M., who was a long-time faculty member in our department, and then served as Provost at UD. The Integration Bee, the poster sessions, the presentation sessions, and the Celebration of the Arts are some of the activities that are popular with our students.
The Poster Sessions at the Stander Symposium

Graduate student presenters:


Undergraduate student presenters:


Preston Reed Boorsma: “Distance Between Graphs,” advised by Aparna Higgins.

Danny Jeffrey Fleming: “Median Housing Prices in the Boston Area,” advised by Pete Hovey.


Engels Imanol Diaz Gomez, Jeffrey Allen Lott, Nicole Meek: “Computational Mathematics to Study a Model of Complications Due to Diabetes,” advised by Muhammad Usman.


Lauren Ashley Morgan: “Ferrari’s Solution of the Quartic Equation,” advised by Becky Krakowski.


Staci Seitz: “Patience, Young Grasshopper: Analyzing the fungal composition of the grasshopper gut microbiome,” advised by Yvonne Sun and Chelse Prather (Biology).

Jack Norman Smith: “Education's Effect on Income Inequality in OECD countries’’ advised by Pete Hovey.


Presentation of Talks at the Stander Symposium by undergraduate students:


The 18th Integration Bee

The Integration Bee starts with a pizza lunch in the atrium of the Science Center, which allows faculty and students to mingle. Registration of the teams (which may have at most two players each) takes place during lunch. The activity then moves to (newly renovated!) Chudd Auditorium. The Integration Bee is conducted in rounds, with several problems in each round so that not all teams participate at the same time. Winning teams move on to the next round; others may stay to cheer their friends on.

In 2019, ninety-four students in 48 teams competed in the bee. The winning team was "Sine of the Times" consisting of Elizabeth Mintus and Susan Trotter. Elizabeth and Susan were MTH 169 students, one in Catherine Kublik’s section and one in Shirley Ober’s class. They submitted a correct answer just a hair quicker than the second-place team,
"Channel 4 Newsroom," consisting of Ryan Goettemoeller and Michael Lipps, both MTH 169 Students in Shirley Ober's sections.

The integration bee was organized by Art Busch and Maher Qumsiyeh. Paula Saintignon and Shirley Ober managed the registration desk. Several faculty served as judges and "runners" during the competition. We extend a special thank-you to Vicki Withrow, who always sees to all the logistics before, during and after the integration bee and even cleans up after us, so that the atrium looks very nice again before the winners are even determined.

The 2019 Honors Symposium

The annual symposium provides an opportunity for the honors students who write an honors thesis to present their theses to the University community, family and friends.

Lauren Geiser (MTH/BIO) presented her thesis “The Number of Steady States of Gene Networks with AND-OR Regulation and Chain Topology.” Her advisor was Alan Veliz-Cuba.

DEGREES CONFERRED

Our congratulations, and best wishes for successful careers, go to our graduates.

Undergraduate Degrees

UD has two commencement ceremonies each year, in December and May. We list the students who graduated during this past academic year with a major in mathematics. Three degree programs are offered: Bachelor of Arts in Mathematics, Bachelor of Science in Mathematics, and Bachelor of Science in Applied Mathematical Economics. Students who major in mathematics sometimes have another major. Some students even earn dual degrees. Several graduates are designated as “University Honors,” (awarded to selected students for having successfully completed a series of special honors seminars and an honors thesis), and others as “Core Program,” (awarded to selected students for having successfully completed an integrated academic curriculum program in religious studies, philosophy, English, history and the social sciences). Other designations are “Dayton Civic Scholars,” (awarded to selected students for having successfully completed a special social science sequence focused on a career in public service), “Berry Summer Thesis Institute Fellows,” (awarded to selected students for having successfully completed the Berry Summer Thesis Institute, which provides a 12-week, on-
campus program of intensive disciplinary research and scholarship opportunities, and
professional development and leadership workshops, along with community service
opportunities), and “Berry Thesis Fellows” (awarded to selected students for having successfully
completed the Berry Summer Thesis Institute and an Honors thesis). “Global Flyers Fellows” is
awarded to selected students for having successfully completed a Global Flyers program as a
thesis fellow in Oxford, England. “DC Flyers Fellows” is awarded to selected students interested
in exploring careers in public service through 10-week internships in our nation’s capital.

Tamier Bao (Bachelor of Science in Mathematics, December 2018).

Elizabeth Nicole Boeke (Bachelor of Science in Mathematics, May 2019).

Caroline Ann Dallman (Bachelor of Science in Applied Mathematical Economics, December
2018).

Daniel J. “Danny” Fleming (Bachelor of Science in Applied Mathematical Economics, May 2019). Danny also earned minors in Finance and Actuarial Sciences. He is working at Medical Mutual of Ohio in Cleveland, his
hometown. He passed Exam P in and plans to take Exam FM in August 2019.

Lauren Nicole Geiser (Bachelor of Science in Biology, 2nd Major in Mathematics, May 2019).
Magna Cum Laude. University Honors with Distinction.

Kaity Jones (Bachelor of Science in Applied Mathematical Economics, May 2019). Kaity has
obtained a graduate assistantship and will pursue the Master of Financial Mathematics at UD,
starting in the fall of 2019.

Junyu Lin (Bachelor of Science in Mathematics, December 2018).

Lauren Ashley Morgan (Bachelor of Science in Mathematics, May 2019).

Amelia Isabella Pompilio (Bachelor of Science in Mathematics, August 2019). Magna Cum
Laude. University Honors. Amy is going to pursue a PhD in pure mathematics at the University
of Illinois at Chicago.

Robert Joseph Mumma (Dual degree: Bachelor of Science in Mathematics, Bachelor of
Science in Education – Adolescence to Young Adult Education, May 2019).

Kathryn Elizabeth Quinn (Dual degree: Bachelor of Arts in Mathematics, Bachelor of Science
in Education – Adolescence to Young Adult Education, December 2018). Summa Cum Laude.

Noelle Elise Rizzo (Bachelor of Arts in International Studies, 2nd Major in Mathematics, May

Leah Marie Squiller (Bachelor of Science in Mathematics, May 2019). Magna Cum Laude.
**Ethan Thomas Trapani** (Bachelor of Science in Education – Adolescence to Young Adult Education, 2nd Major in Mathematics, May 2019).

**Zeyu Wang** (Bachelor of Science in Mathematics, December 2018).

**Bin Zhou** (Bachelor of Science in Mathematics, May 2019).

**Master’s Degrees:**

Our department offers three Master’s degree programs: Master of Financial Mathematics (MFM), Master of Science in Applied Mathematics (MAS), and Master of Mathematics Education (MME). We list the students who graduated during this past academic year with a Master’s degree from our department, along with the title and advisor of their Mathematics Clinic, if we know these. UD has two commencement ceremonies each year, in December and May. (August graduates are invited to participate in the December ceremonies.)

**Hind Mohammed Alasmari** (May 2019) earned the MAS degree. She worked with **Youssef Raffoul** on a Math Clinic project entitled “Boundedness and Stability in Volterra Integro-differential Equations.”

**Ebtsam Alrasheedi** (December 2018) earned the MAS degree. She worked with **Paul Eloe** on a Math Clinic project entitled “Applications of fixed point theorems to boundary value problems at resonance.”

**Sarah Elizabeth High** (MME December 2018) worked on a Math Clinic project entitled “The Effects of Student Teams Achievement Divisions (STAD) Cooperative Learning on Mathematics Achievement” under the direction of **Becky Krakowski**.

**Didier Hirwantwari** (December 2018) earned the MAS degree. He worked with **Maher Qumsiyeh** on a Math Clinic entitled “Bootstrapping Transfer Function Models.”

**Limin Jin** (MFM May 2019) worked with **Ruihua Liu** on a mathematics clinic project report entitled “A tree-based method to price European and American options with stochastic volatility or stochastic interest rate.”

**Peter Kawiecki** (MFM May 2019) worked with **Dan Ren** on a math clinic project entitled “Optimal Stopping in Stock Price Bubbles: an alternative method.”

**Abigail Elizabeth Kramer** (MAS May 2019) worked with **Muhammad Usman** and wrote a mathematics clinic project report entitled “Numerical solution of coupled diffusion systems for special pattern formations.”
Pin-Ju Lee (MFM December 2018) worked with Carl Chen (Department of Economics & Finance) on a Math Clinic project entitled “Portfolio Formation, Crash Risk and Stock Synchronicity.”

Lijin Lin (May 2019) earned the MFM degree. She worked with Muhammad Usman and wrote a mathematics clinic project report entitled “A Comparison of Numerical Solutions of the Black-Scholes Model.”

Jenna Maksymiak (MME August 2018) worked with Becky Krakowski on her Math Clinic project, entitled “Flipping the High School Mathematics Classroom: Effects on Student Academic Success and Attitude.” Jenny was accepted to the PhD program in Mathematics Education at UGA, and began her studies there in the fall of 2018.

Maha Abdullah N Reshedi (December 2018) earned the MAS degree. She worked with Muhammad Usman on a Math Clinic project entitled “A comparison of numerical and analytical solutions of differential equations and systems.”

Zhaopu Teng (December 2018) earned the MAS degree. He worked with Muhammad Usman on a Math Clinic entitled “Numerical solution of 2D Vasicek PDE model.”

Seyedomid Shirdelan (MFM August 2018) worked with Paul Eloe on a mathematics clinic project entitled “A new approach for estimating the prepayment rate in residential mortgage loans.”

Johnathon Davies Spilker (May 2019) earned the MAS degree. He worked with Tessa Chen and James Cordeiro and wrote a math clinic project entitled “Comparison of Hidden Markov Model Algorithms and their Applications.”

Ruiqi Wang (May 2019) earned the MFM degree. She worked with Carl Chen (Department of Economics & Finance) and wrote a math clinic project entitled “Analysis of hedge fund crash risk.”

Xichen Yan (May 2019) earned the MFM degree. He worked with Carl Chen (Department of Economics & Finance) and wrote a math clinic project entitled “Analysis of Mutual Funds Performance Persistence Using Alternative Performance Measurements.”
ALUMNI NOTES

In Memoriam:

Patrick "Pat" Luby (BA Mathematics 1952), passed away on April 16, 2019. While at UD, he worked at UDRI, doing manual calculations. He went on to receive an MS and a PhD in Agricultural Economics from Purdue University. After a two-year stint on the faculty at Purdue, he moved to Wisconsin and took a job at the Oscar Meyer Corporation, where he worked until his retirement in 1992. Pat is survived by his wife Peggy, four children and several grandchildren. An extensive obituary can be found at https://tinyurl.com/yyfadt9s

Dennis Wackerly (BS Mathematics and BS Computer Science, 1967) passed away on April 21, 2019. Dennis received a master's and a PhD degree in statistics from Florida State University. He had a long and fruitful career at the University of Florida, where he was on the faculty for 35 years. He retired in 2007. Dennis is survived by his wife Joan and two sons. Those of you who took or taught MTH 411 and MTH 412 here at UD will likely recognize his name as one of the authors (with Mendenhall and Scheaffer) of *Mathematical Statistics with Applications*. We have used the text for many years and are still using it today. An obituary can be found at https://tinyurl.com/y623gncb

Reports from Alums

Michelle Connor ('14) will be married in April 2020. Michelle, who graduated with an MA in Music Theory from Tufts University, and her fiancé work at the Massachusetts Institute of Technology. Michelle is grateful for all the knowledge that UD has taught her to excel in her career.

George Eckerd ('07) is pursuing the PhD program in economics at Georgetown University in DC. During the summer of 2019, he will work for the JPMorgan Chase Institute in New York, conducting financial market research on the bank’s unique institutional client trading activity data set.

Jeffrey Neugebauer (BS 2006, MS 2008) is on the faculty at Eastern Kentucky University. He enjoyed a sabbatical during the fall term 2018 as a Visiting Scholar at the University of Dayton. He spent a great deal of his time conducting joint research with Paul Eloe and with Muhammad Islam.


Olanrewaju (Lanre) Oriowo (MFM 2008) will start a PhD program in Curriculum and Instruction with a concentration in Mathematics at the University of North Carolina Charlotte in the fall of 2019.

Joseph (Joe) Coyle (MAS 1993) has been serving as chair of the Mathematics Department at Monmouth University) since July 2017. He was promoted to the rank of full professor in the spring of 2018.

Courtney Castle (‘11) earned a PhD from Boston College in Measurement, Evaluation, Statistics, and Assessment in 2018. She then started a job at the Woodrow Wilson Academy of Teaching and Learning in Cambridge, MA, overseeing assessment and licensure of prospective high school mathematics and science teachers.

Julie Niederhoff (‘99) earned a PhD in Operations and Manufacturing Management at Washington University in St, Louis. She then joined the faculty at the Whitman School of Management at Syracuse University. She earned tenure and promotion to the rank of Associate Professor in May 2018. Her most recent publication was "Humans are not machines: impact of queuing design on service time," Management Science, 2018 (with Shunko, M., Rasokha, Y.). Another article was accepted for publication in March of 2019.

Elizabeth Nehring (MME 2015) is now the developmental Math Lab Manager and Director of Math Placement Assessment at Eastern Washington University in Cheney, WA. She is very grateful for Becky Krakowski’s patience and support in helping her get the MME degree, and she thinks of the university fondly.

Kevin Kelley (‘84) retired in 2017 after a 33-year career in Software Engineering with IBM, Loral, and Lockheed Martin. He writes: “Although my direct use of mathematics in that career was limited to some trigonometry, basic statistics, and Boolean algebra, I always felt that my math education gave me a leg up on other software people who didn’t have that rigorous background.”

Bob Bolz (‘66) retired over eight years ago from Lockheed Martin Aeronautics Company, where he spent almost 25 years in aerospace management. He remains involved in a number of initiatives at the University of Dayton, and he has served on the College of Arts & Sciences Advisory Board for many years.

Emily Seals (‘18) reports that she started her first job as reporting specialist for SafeAuto in Columbus one week after graduating from UD. Her first promotion to analyst came after only seven months on the job. In this new position, she is involved in creating/updating reports to help drive business decisions for both HR and the CEO of the company. She writes “As a graduate of applied mathematics and economics, I have been blessed by SafeAuto to explore deeper analytical thinking and economic outcomes through my first year here. None of this would have been possible without the University of Dayton and all the staff that supported me through my undergraduate education. I'm always happy to provide any help/mentoring/feedback to fellow flyers.”
William (Willy) Balbach (BS ‘10, MAS ‘12) has been working since 2017 at Willis Tower Watson in Chicago. His area is health and benefits consulting.

Brandon Thornton (MAS 2016) has been promoted to Associate Professor at Austin Community College. He is engaged to be married in the fall of 2019.

Marla Prenger Gross (‘90) writes “After working as a statistician at P&G for nearly 20 years, I decided I needed a change from the pace of corporate America. Ever since then, I have been working for a company called Wyzant, tutoring people of all ages in a variety of mathematics and statistics. I still live in Cincinnati, with my husband (Gary) & dog (Bella).”

Adam Volk (’16) has just completed his third year at the University of Nebraska-Lincoln where he is pursuing a Ph.D. in mathematics. He recently passed his comprehensive exams. He will be participating in the Graduate Research Workshop in Combinatorics for the second year in a row. This year’s workshop will be held in Kansas for two weeks in the second half of June. He will be teaching for the Johns Hopkins Center for Talented Youth, at their Seattle location, for three weeks starting in late July.

This newsletter was edited by Wiebke Diestelkamp. The department’s Senior Administrative Assistant, Vicki Withrow, helped gather information and check data. Thanks to all who contributed information to this newsletter.

Please write to us at math@udayton.edu with your news items, or with changes in your contact information, or to alert us to alums who you believe may not be on our mailing list. All errors and typos are Wiebke’s responsibility. Please write to her at wiebke@udayton.edu with corrections.

Thank you, Aparna!

Many thanks to Aparna Higgins, who has edited the newsletter for the years 2015, 2017 and 2018. Aparna is responsible for the current format of the newsletter. Among other innovations that make the newsletter fun and informative to read, she started to include photos and links that point to different parts of the newsletter or to web pages that are mentioned in the document. She also introduced the tradition of having a clickable Table of Contents, which vastly improved the navigation of the newsletter.