THE MATH AND COMPUTER SCIENCE DEPARTMENT SUFFERED A GREAT LOSS

On August 30, 2019, Dr. Iyad Ajwa, Professor of Computer Science, passed away after a battle with cancer. Services for Dr. Ajwa were held the same afternoon at the Al Noor Mosque in Columbus, Ohio. He is greatly missed in the department and at Ashland University.

Dr. Ajwa joined Ashland University as an Assistant Professor in 1997 and was devoted to our institution. He was a beloved teacher having been nominated twice for the prestigious Taylor Teaching Award. Dr. Ajwa was the recipient of a prestigious Fulbright Award for the 2013-2014 academic year during which he taught and conducted research at Umm Al-Qura University in Saudi Arabia. In 2005-06 he was granted a Senior Study Leave to teach at Abu Dhabi University. Dr. Ajwa's scholarly record includes numerous peer-reviewed articles, grants and contributed papers. He served as Chair of the Department of Mathematics and Computer Science (2014-2019) and recently developed the curricula for two new majors: cyber security and software design and development. The entire academic community joins the entire Ashland University community in mourning his loss. Please keep Dr. Ajwa's wife, Nadia, and sons, Ismaeil and Omar, in your prayers.

We continue to remember him with great fondness.

Dr. Gordon Swain Distinguished University Teacher of Mathematics

Dr. Gordon Swain was honored with the 2019 MAA Ohio Section Award for Distinguished College or University Teaching of Mathematics at the MAA Ohio Section Spring Meeting, held April 4-5, at the University of Akron.

Dr. Christopher N. Swanson Received the Meritorious Service Award

Dr. Christopher N. Swanson received the Meritorious Service Award in Recognition for his outstanding service to the Ohio Section of the Mathematical Association of America.

Dr. Swanson received the award at the Mathematical Association of America's MathFest Conference held July 31 to Aug. 3 in Cincinnati, Ohio. To see the citation for this award, click here.

The Ohio Section's nomination of Dr. Swanson noted that he has been actively involved at the national and sectional level, serving as president of the Ohio Section for two years, serving as co-coordinator for Ohio NExT (a professional development program for new math faculty) for 12 years, serving on the Committee on Student Members for eight years and presenting multiple invited national MAA panel discussions and Ohio NExT workshops.

Dr. Swanson joined Ashland University faculty in 1999. He will be serving as chair of AU’s Department of Mathematics and Computer Science in the upcoming academic year. He previously served, for 12 years, as the University’s Honors Program Director.
Dr. Gordon Swain was on study leave during the Spring 2019 semester. During that time, he has been working on answering the following problem, “Suppose the equation
\[ f_1(x)yg_1(z) + f_1(x)zg_2(y) + f_2(y)yg_3(x) + f_3(y)zg_3(x) = 0 \]
for all elements \(x, y, z\) in a given prime ring. What does this imply about the functions \(f_i\) and \(g_j\) and about the prime ring itself?” The aim is to show that if the functions are non-trivial, then they have a ‘linear’ form, and the ring is very similar to a matrix ring.

While researching, he stayed in Ashland. He did come to his office from time to time and still completed duties within the department.

Validation by Education Experience (VEE) Requirement Approval
Math 318 has been approved as meeting the VEE requirement in Mathematical Statistics and is listed in the VEE directory. Students can now complete all three of the current VEE Requirements at Ashland University.

“The VEE requirement is jointly sponsored by the Society of Actuaries (SOA), Casualty Actuarial Society (CAS) and Canadian Institute of Actuaries (CIA). There are three VEE topics: Accounting and Finance and Mathematical Statistics.

COMPETITIONS AND CONFERENCES:

2018 William Lowell Putnam Competition
The 79th annual William Lowell Putnam Mathematical Competition was held on Saturday, December 1, 2018. Alec Baldosser, Kyle Puhl and Aaron Arnold participated. They worked on six problems from 10 a.m. – 1 p.m. and then six more problems from 3 p.m. to 6 p.m. Typically, approximately 50% of the people who enter this competition nationwide and in Canada receive zero points on the exam. See exam and solution here.

There were 4623 participants from 568 institutions in the 2018 William Lowell Putnam Mathematical Competition this year, with 1599 (34.6%) receiving scores of 0. Unfortunately, all 3 of Ashland University’s participants received scores of 0 this year as well. The results from the competition are online.

You can also download this PDF to see a detailed list of the winning teams, Putnam Fellows, participants earning honorable mentions, teams earning honorable mentions, and the Elizabeth Lowell Putnam Prize winner.

Thanks again to all of you who participated in this year’s exam. We hope those of you who were not declared ineligible upon graduation last May will consider participating again next year.

2019 Leo Schneider Mathematics Competition
Ashland University’s Math and Computer Science Department took two teams to the Leo Schneider Mathematics Competition held at the University of Akron on April 5-6, 2019. Each team has three students. The teams were: The Linear Lizards - Alec Baldosser, Camryn Bickerstaff, Kurtis Yoder and The Cubic Cats: Aaron Arnold, Janeen Grese and Emily Martin.

ACM Association of Computing Machinery Regional Programming Contest
The 2018 Association of Computing Machinery (ACM) ICPC East Central North America Regional Programming Contest was held on Saturday, November 10, 2018 at Youngstown State University. The competition is challenging and tests logic and problem-solving skills. It is a great opportunity to apply classroom knowledge to real industry problems.

The 10 problems this year were very difficult with only 9 problems solved by 2 teams from the University of Waterloo and 8 problems solved by two more teams from Waterloo and one team from Carnegie-Mellon University. We were not able to solve any of the problems despite several attempts by all teams. Michigan came in 5th place solving 5 problems while Ohio State came in the 39th place solving only one problem.

1. Team AU Eagles: Phillip Waller, Brennen Nalley, Kyle Hall
2. Team AU Purple: Kelly Fullin, Renee Lucas, Michael Cowan
3. Team AU Gold: Mohammed Bawazeer, Jonathan Meredith, Josiah Moore
4. Team The Bug Slayers: Nathan Ahrens, Erich Berger, Brennan Kunkel

Thank you for your participation. We are very proud of each and every one of our students! They did their best and there is always next year, although this was the last contest for Michael Cowan, Brennan Kunkel, and Nathan Ahrens since they are graduated last May. Congratulations to all 12 students!
PRESENTATIONS:

URCA Presentations
Ashland University’s College of Arts and Sciences hosted its 10th annual Undergraduate Research and Creative Activity Symposium. This is an opportunity for students to present their scholarly and creative work. Almost seventy students’ works were featured.

The symposium was held from 9 a.m. – 4:30 p.m. in the John C. Myers Convocation Center. “Undergraduate research and creative activity mentored by a faculty member, or in collaboration with a faculty member, enhances the educational experiences of our students. Engaged students present research at professional conferences; author and/or co-author publications in professional journals; complete and perform at state, regional and national levels; and exhibit work in a variety of venues,” according to Dr. Dawn Weber, Dean of the College of Arts and Science.

Emily Martin of the Math and Computer Science department, participated in the URCA symposium in spring of 2019. Emily’s presentation was “An Analysis of the Effect of Early Season Winning Percentage on Final Regulation Season Winning Percentage.” Her faculty sponsor was Dr. Christopher Swanson, Mathematics.

ACTUARY NEWS

Ashland University’s Actuarial Program is one of only 4 private institutions from Ohio, and one of only 13 overall from Ohio, with a Society of Actuaries Universities and Colleges with Actuarial Programs (UCAP) designation.

Actuaries are trained in risk management. They solve a variety of problems related to risk, such as determining premiums for insurance companies, helping companies establish their retirement plans, developing life insurance products and assisting banks in managing their assets and liabilities and developing ways to manage their financial risk. Actuary Science takes a combination of strong analytical skills, business knowledge and understanding of human behavior.

Actuaries increase their skills and professional status by taking a series of tests over various materials. These tests may be taken while still in college and/or while on the job. Congratulations to the following students for their accomplishments in passing Actuarial Science Exams.

Michael Byndas (’17) passed the Exam MAS-I offered by the CAS with a 7, December 2018.
Joel Moseman (’15) passed Exam 6, spring 2019. This is the last test requirement needed to get his ACAS! Congratulations, Michael and Joel!

STUDENT NEWS:

Congratulations to our December 2018 and May 2019 Graduates

Nathan Ahrens   Nicholas Hurst   Kyle Puhl
Aaron Arnold    Jordan Lint     Jessica Shrider
Jaxone Barone   Leah Malley     Ashlyn Smith
Benjamin Cipa   Emily Martin    Stephanie Probst
Michael Cowan

STUDENT NEWS:

2019 Ohio MAA Meeting

At the Spring 2019 Ohio Section of MAA meeting, Emily Martin presented “An Analysis of the Effect of Early Season Winning Percentage on Final Regular Season Winning Percentage,” based on the research she completed as part of her Honors Capstone Project.
2018-2019 Math and Computer Science Outstanding Students
The 2019 Honors Reception for the Math and Computer Science Department was held on April 24, 2019 in Ronk Lecture Hall. Students were awarded for a GPA of 3.5 in their Math and Computer Science courses. In addition, there were outstanding student awards, graduates, scholarship recipients, Pi Mu Epsilon new inductees, ACM officers, MAA officers, UPE officers, student presentations and student participation recognitions. Congratulations to all students who were awarded.

The following students were chosen to receive outstanding awards for their grade level.

Outstanding Sophomores: Emily Schordock, Josiah Moore and Brittany Close

Outstanding Juniors: Kelly Luck and Renee Lucas (Not Pictured: Cameron Middis and Tyler Tokos)

Outstanding Seniors: Nicholas Hurst, Nathan Ahrens and Jessica Shrider

2018-2019 Outstanding Student Awards for Calculus, Discrete Mathematics and Introductory Computer Programming

Outstanding Calculus Students: John Tyler Sparks and Jevin Litwiler

Outstanding Discrete Mathematics Students: Logan Hurst and Camryn Bickerstaff

Outstanding Computer Programming Student: Daria Kochis

Math Club News
The Math Club (Mathematical Association of America Student Chapter, MAA) meets bi-weekly throughout the academic year. At most meetings they play math-related games, but also have themed meetings such as mathematical pumpkin carving, mathematical puzzles, the mathematics of voting and Pi-day.

2018-2019 MAA Officers
MAA Student Chapter Officers for the 2018-2019 year were:
President: Aaron Arnold
Vice-President: Jessica Shrider
Secretary: Emily Martin
Treasurer: Janeen Grese
Faculty Adviser: Dr. Darren Wick
The Problem Solving Group

The problem solving group was formed in the fall of 2011 by Dr. Gordon Swain. The group meets bi-weekly throughout the academic year. They discuss and attempt to solve mathematical problems posed in scholarly journals. Below are some of their successes for the academic year 2018-2019:

The School Science and Mathematics recognized the Ashland University Problem Solving Group (PSG) in their January 2019 issue. The AU PSG received credit for submitting a correct solution to Problem 5506. Ashlyn Craft was the primary author. Solution to problem 5506.

The School Science and Mathematics Association recognized the Ashland University Problem Solving Group (PSG) in their May 2019 issue for submitting a correct solution. Janeen Grese was the primary author of the solution. Solution to problem 5530.

The Pi Mu Epsilon Journal recognized the Ashland University Problem Solving Group (PSG) for correctly solving problem 1354. Aaron Arnold was the primary author of the solution. Solution to problem 1354.

Welcome 2018-2019 New PSG Members

The following student became a new member during the 2018-2019 academic year: Janeen Grese

The 2018-2019 Faculty Advisor was Dr. Chris Swanson

Association of Computing Machinery (ACM) News

ACM Student Chapter Officers for 2018-2019 were:
President: Mohammed Bawazeer
Vice-President: Renee Lucas
Secretary: Kelly Fullin
Public Relations: Branden Barber
Faculty Advisor: Dr. Iyad Ajwa

Upsilon Pi Epsilon Honorary Society (UPE) News

UPE recognized new inductees on Tuesday, April 19, 2019. Their induction was held at Buffalo Wild Wings where they enjoyed a luncheon.

The new inductees for 2018-2019 were: Branden Barber, Renee Lucas, Jonathan Meredith, Josiah Moore, Brennen Nalley, Cody Williams

UPE Honorary Officers for 2018-2019 were:
President: Michael Cowan, Vice-President: Erich Berger,
Secretary: Nick Hurst, Faculty Advisor: Dr. Iyad Ajwa

Pi Mu Epsilon Honorary Society (PME) News

On December 3, 2018, the mathematics honorary, Pi Mu Epsilon, held its cording ceremony for members graduating in December. The PME members also enjoyed dinner at the home of PME advisor, Dr. Gordon Swain. The December 2018 PME member graduates were Kyle Puhl and Ashlyn Smith.
The new inductees for 2018-2019 were: Kyle Ackert, Brittany Close, Kelly Fullin, Janeen Grese, Julia Hines, Nicholas Hurst, Cassidy Johannsen, Daria Kochis, Cameron Middis, Logan Pottorf, Emily Schordock, Clay Shreve, Dalton Skerlec, Tyler Tokos

Graduates: Aaron Arnold, Emma Dumford, Nicholas Hurst, Emily Martin, Kyle Puhl (Dec.'18), Jessica Shrider, Ashlyn Smith (Dec. '18)

INTERNSHIPS AND RESEARCH PROJECTS

Kelly Fullin, Senior, accepted a 2019 summer research position at University of Central Florida. She worked on a project in Internet of Things!

Nathaniel Redden, Junior, accepted a 2019 summer internship at North Dakota State University as part of their Cyber Security and Cyber-physical Systems REU, sponsored by the National Science Foundation.

Kurtis Yoder, Junior, accepted a 2019 summer internship at NFI Industries in the logistics office at a Colgate-Palmolive plant in Cambridge, Ohio. Kurtis Yoder will be working as a Transportation Logistics Intern.
What's Happening with our Graduates?

Michael Cowan, Senior, majoring in Computer Science accepted a job offer at Alliance Data Card Services, Columbus. He works in software development. He has had internships with this same company over the past two summers. He started his new job on July 7, 2019, following his May 2019 graduation.

Alumni, We’d Love to Hear from YOU!

Keep in touch! It’s encouraging to our faculty and current students to see where your AU degree takes you! Notes, news or updated contact information may be sent via e-mail to vralph@ashland.edu or mailed to Ashland University Department of Mathematics and Computer Science, 401 College Ave. Ashland, Ohio 44805.

Name __________________________________________ (Maiden)________________________

Major ______________________________________________ Year of Graduation ____________

Address __________________________________________

E-mail Address __________________________ Occupation/Title __________________________

What you are up to: ________________________________________________________________

________________________________________________________________________________

If you are interested in making a gift to support endowed scholarships or department programs, please contact the AU Development Office at 419.289.5620. Your continuing support is important to the success of our program and our students!
**Faculty News**

**Dr. Iyad Ajwa, Professor**

Professor of computer science, continued to serve as department chair until August 2019. Last year, he taught several computer science and security courses. He has supervised various Honor’s theses. He also sponsored five presentations by computer science students at the 2018 CAS Undergraduate Research and Creative Art Symposium. In addition, he accompanied 12 computer science students to participate in the 2017 ACM Regional Programming Contest held in Youngstown, Ohio, in October 2017. Dr. Ajwa continues to serve as the Faculty Advisor for The Epsilon Chapter of Ohio of the Upsilon Pi Epsilon honor society for computing sciences and the Faculty Advisor for the AU Chapter of the ACM.

**Dr. Steven Scheirer, Visiting Assistant Professor**

Visiting Assistant Professor of Mathematics, joined the Mathematics and Computer Science Department at Ashland in 2018. Dr. Scheirer earned a Bachelor of Science in mathematics from Moravian College in Bethlehem, PA, and a Master of Science and Doctor of Philosophy in mathematics from Lehigh University, also in Bethlehem, PA. His main research interest is algebraic topology. Specifically, he is interested in topological robotics, which aims to view problems that arise in robotics through an abstract mathematical point of view. While at AU, Dr. Scheirer has taught MATH 205, 206, 208, 450, 610, and 650.

**Dr. Gordon Swain, Professor**

Professor of mathematics, joined the Ashland University faculty in 1994. In addition to teaching a large variety of mathematics courses, including statistics, calculus, linear and abstract algebra, he is the advisor for the mathematics honorary. He served as chair of the department of mathematics and computer science from 2001-2007, and was also the 2001 recipient of the Taylor Excellence in Teaching Award. His areas of mathematical interest include abstract algebra (noncommutative rings), mathematical analysis of games, and undergraduate mathematics in general. He received his Ph.D. in Mathematics from the University of Massachusetts, Amherst, his M.S. in mathematics from the University of Vermont and a B.S. in physics and mathematics from Eastern Nazarene College.

**Dr. Chris Swanson, Professor, Chair**

Professor of mathematics and chair of the Department of Mathematics and Computer Science starting August 2019, joined the Ashland University faculty in 1999. He is the developer of Ashland University’s actuarial science major, advisor to Ashland University’s team for the national William Lowell Putnam Mathematical Competition and organizer of Ashland University’s Problem Solving Group. His research interests are combinatorics and probability. He received his doctor of philosophy in mathematics from the University of Michigan, his master of science in mathematics from the University of Michigan and bachelor of science in mathematics from Denison University.

**Dr. Darren Wick, Professor**

Currently teaches Discrete Mathematics, Analysis, History of Mathematics, Mathematical Proof, and Elementary Statistics. He serves as faculty advisor for the Math Club, as a member of the Faculty Senate Academic Program Review Committee, and as webmaster for the Ohio Section of the Mathematical Association of America. His research interests include associative ring theory and algebra, representation of numbers, the history and foundations of mathematics, and open source software.

**Dr. Deborah Stoffer Wilson, Visiting Assistant Professor**

Visiting Assistant Professor of Computer Science, joined the Mathematics and Computer Science Department at Ashland as an adjunct in 2010 and as a visiting assistant professor in 2019. Dr. Wilson earned a Bachelor of Science in computer science and biology from Ashland University in Ashland, Ohio and a Master of Science and Doctor of Philosophy in computer science from Kent State University in Kent, Ohio. Her research interests include bioinformatics, machine learning and computer graphics. While at AU, Dr. Wilson has taught CS 101, CS 121, CS 122, CS 235, CS 302, CS 304, CS 320, MIS 475, Math 100, Math 208 and NUHS 509.

**Staff News**

**V. Sue Ralph, Administrative Assistant**

Returned to Ashland University in August 2014. She is the administrative assistant to the Math and Computer Science Department. She has an accounting and finance degree, as well as a teaching certificate K-8, from Ashland University.