**FROM THE CHAIR**

It has been an exciting year for the students, faculty and staff of the Department of Mathematics, Statistics and Computer Science (MSCS). The articles in this newsletter highlight a small slice of their accomplishments.

First, it is my pleasure to welcome our newest faculty member Dr. Hyunyi Jung who works in mathematics education. Learn more about Dr. Jung and her accomplishments on Page 2.

The Faculty Focus articles to the left highlight the careers of two of our former MSCS faculty members. Dr. Peter Jones, who retired in Fall 2017 after 37 years of service to Marquette, was promoted to Professor Emeritus. Read about Dr. Jones’s impact on the department and to the field of semigroup theory. Remembering the life of Dr. Chris Braunschweiger, read about Dr. Braunschweiger’s influence on the department and in the classroom. Both faculty members had a lasting impact on their students and their colleagues.

Also on Page 1, read about our new graduate certificate entitled Ethically Centered Data Science.

In undergraduate news, two teams of students went to compete in the International Collegiate Programming Contest while others students attended events like the 6th annual Computer Science Education Research conference in Helsinki, Finland or the Pi Mu Epsilon Undergraduate Math Conference. One of our computer science students spent a semester in Tanzania to conduct malaria research. See the articles on Page 3 to learn more about how our students devoted their time over the past year.

We are proud of the work of every member of MSCS and look forward to the adventures of next year. Have a wonderful summer.

Rebecca Sanders
Chair

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**FACULTY FOCUS**

**Dr. Peter Jones**

After serving Marquette University for 37 years, Dr. Peter Jones retired from the university in 2017 with Emeritus Professor status. As a rising star in mathematics, Dr. Jones joined the Marquette University in 1980 as an assistant professor at the MSCS. After completing his bachelor’s degree with honors in 1971 from the University of Western Australia, he completed his Ph.D. in three years from the Monash University, Australia. Before joining Marquette University in 1980, in a short period of time, he had established himself as a renowned mathematician in the field of semigroup theory with 15 publications in prominent journals. In total, he has published 81 papers with some of the papers cited very frequently in several journal articles. Dr. Jones has been an integral part of the growth of the MSCS department and the university. He has held several key positions at the university and the department levels. He was the department chair from 2002 – 2008. He was a key member of the department committee that was instrumental in creating a Ph.D. program in computational sciences.

**ETHICALLY CENTERED DATA SCIENCE CERTIFICATE**

by Dr. Thomas Kaczmarek

MSCS has created a new graduate certificate program in data science. The curriculum is designed to connect data analytics and data science skills and knowledge with the needs evident in a host of fields. This certificate program seeks to meet a significant need for data analytics experts, targeting a human-centered approach. Those completing this certificate program will be able to identify and articulate problems, issues and decisions that can be informed by data analytics approaches and the ethical and social issues surrounding them; design and implement advanced strategies for analyzing big data, and create and present actionable information.

To illustrate the broad applicability of the curriculum, we offer these same courses as half of the requirements for a new interdisciplinary degree we have developed working with Nursing. This new program is the MS in Healthcare Data Analytics. The certificate shares course with the specialization in Big Data and Data Analytics in the MS in Computing and a new degree program in supply chain management analytics form the College of Business Administration.

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**A note on Dr. Chris Braunschweiger (1926-2018)**

by Dr. Stephen Merrill

Chris came to MU (our department name was then MathSci) as a full professor from Delaware. Although he did not publish a lot, his greatest pride and success was in teaching students to construct a proper proof. A second important aspect was his interaction with computers. Just passing your office could make your computer get a blue screen of death. He was also known for beautiful lecture notes and board work. He used colored chalk in his lectures – color coding the theorems and propositions. One of Chris’s lasting impacts was to use “lemma yellow” for all lemmas. A second important aspects was his interaction with computers. Just passing your office could make your computer get a blue screen of death.

Passing his hand over your computer could kill it.
**FACULTY GRANTS & ACTIVITIES**

**Hyunyi Jung**
presented A comparative analysis of learners’ models from multiple perspectives via a cross-institutional collaborator network at the 18th International Community of Teachers of Mathematical Modelling and Applications in Cape Town, South Africa

**John Engbers**
gave an invited talk at the AMS Fall Western Sectional Meeting on the Recent Advances in Structural and External Graph Theory

**Elaine Spiller**
was awarded a Way Klinger Sabbatical Fellowship for the 2018-2019 year.

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**FACULTY NEWS: BIRTH ANNOUNCEMENTS**

Dr. Debbie Perouli welcomed her son, Fredrick, February 2017.

Dr. Mehdi Maadooliat welcomed his daughter, Helena, March 2017

Dr. Dennis Brylow welcomed his daughter, Rhea, July 2017

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**MSCS UPDATE**

This year on May 13th and September 16th the Department and their families got together for picnics at Estabrook park near the Beer Garden. Some faculty members were a bit more festive in dressing up for the location than others.

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The department would like to welcome our new Math Education professor, Dr. Hyunyi Jung, who joined our faculty this Fall 2017.

**Hyunyi Jung**

Hyunyi Jung earned her Master’s degree from Indiana University Bloomington in 2011 and her Ph.D. from Purdue University in 2015. Prior to joining Marquette, she was an Assistant Professor at Calvin College. She is passionate about investigating how students and teachers learn to solve and teach authentic mathematical problems. She has observed the ways in which mathematics is taught while living in three countries and visited seven additional countries.
At the conference, he was running around in the rice paddies of Tanzania catching individual data points (mosquitos) with a net, using his own body to feed them, dissecting their abdomens and working on the tools used to predict natural gas and apply them to the totally different area of study like malaria research.

Colin went to the institute when the idea of participating in research on malaria was planted in his head after meeting with Dr. Samson Kiware, a recent Marquette graduate who is a research scientist at the Ifakara Institute. He met Samson when he worked in the GasDay lab at Marquette. Samson was a student of Dr. Corliss and was implementing some of the data analysis techniques Gasday uses on his malaria research. His outgoing and friendly personality was consistent with Tanzanian culture and made it very easy to talk to him, even with English being his second language. Samson left a large impression on Colin, specifically that someone from across the world could come to an environment like Gasday and learn the tools used to predict natural gas and apply them to the totally different area of study like malaria research.

Working with Dr.Hide the summary section.

Working with IIHI was a definite change of pace from the software development that he did at GasDay. Instead of receiving large amounts of data from natural gas companies to work with learned so far in his Computer Science degree to the work being done at IIHI.

The Olfactometer before it’s completely set up

Olfactometer (a machine to detect and record odor dilution). His main project was the Smelly Socks Project, a project intended to create public engagement of the Malaria research that IIHI was doing and provide a fun way to learn about what attracts mosquitos to the human host. To do this we used a machine called an olfactometer to collect data about mosquito “smell preferences”. The Olfactometer is used to attract the mosquitos as they have a very powerful olfactory sense. The bugs are placed inside a stimulus chamber in a controlled environment where the researchers would then watch and count mosquitos as they had two competing smells going in the chamber. They would record all the outcomes as to see what smell attracts a mosquito the most. It was a eye opening opportunity for him to realize how different these areas of research were but also how they are built off the same foundation of data collection and analysis.

After his co-op finished Colin continued to work towards the research with his senior design project where he is building a semi-autonomous olfactometer with the goal to have it implemented in Ifakara after graduation.
GRADUATIONS  

Spring 2017

B.S. in Computer Science
John Halloran  Austin Anderson
Clayton Armbrust  Robert Catinchi
Louis Krueger  Anna Lansdown
Rafael Leite  Noel Lopez
Philip Martinkus  Casey O’Hare
Austin Paul  Michael Puiszis
Michael Putaraksa  Kevin Roberts

B.S. in COMA
Daniel Moeller  Timothy Sanchez

B.S. in MELT
Jenny Bartlett  Amanda Engel
Erika Strecock

B.S. in INAM
Arjun Singh

B.S. in Mathematics
Kaitlyn Busse  John Halloran
Margaret Allen  Rasha Atshan
Jared Brady  Ryan Downing
Austin Paul  Michael Putaraksa
Philip Martinkus  Casey O’Hare
Shijia Gu  Gina Hong
Paul Kocsis  Lauren McCain
Margaret Murphy  Jeewan Phadke
Kara Sandquist  Lucas Segovia
Anna Sisk  Michael Young
Sarah Hynes  Mercedes Maldonado
Mary Claire Seeberg

M.S. in Computing
Rich Coe  Sarthak Dabas
Jun Feng  Ricardo Franco
Steven Goodman  Anurag Gupta
Tyler Leamon  Patrick McNulty
Simeng Pei  Francine Robinson
Yuan Smith  April Song
Golam Hasan  Junlian Wang
Jiayi Xin

M.S. in Computational Sciences
Christopher Beal  Wei Wu

M.S. in Bioinformatics
Masabho Peter Milali

Ph.D. in Computational Sciences
Brittany Baur  Md Osman Gani

Fall 2017

B.S. in COMA
Carolyn Bump

B.S. in Computer Science
Nathan Arpin  Jacob Kaphingst
Joseph McAdams  Justin Miller

B.S. in Mathematics
Austin Faber  Isha Varshney

B.S. in Mathematics & Secondary Education
Connor Hughes  Josiah Owens

M.S. in Computational Sciences
Katherine Sherman  Thomas Quinn

Ph.D. in Computational Sciences
Golam Mushih Tanimul Ahsan
Regis Rutarindwa  Piyush Saxena

We would like to know where you are and what you are doing. Please send news and current address updates to: newslet@mscs.mu.edu

STUDENT NEWS CONT.

Md Kamrul Hasan,
Ph.D. student, had his research paper, Smartphone-based Hemoglobin Level Measurement Using Chromatic Analysis of Fingertip Videos on Different Color Spaces, accepted in the Elsevier Smart Health Journal.

Pi Mu Epsilon Fall 2017 Induction

Congratulations to our newest inductees of the Wisconsin Alpha Chapter of Pi Mu Epsilon, inducted on December 6th

Alyssa Catarozoli  Ethan Corr
Brandon Fleres  Nathalie Guindon  John Kempf
Shivani Kohli  Vanessa Pescatore

A large thank you goes to the officers of PiME for their work during this semester.

President: Catherine Martin  Vice President: Kyle Haberkorn  Secretary: Nina Lasswell  Treasurer: Frank Punzio

Congratulations to our 2017 Graduates!

Pictured (L to R): Alyssa Catarozoli, John Kempf, Nathalie Guindon, Vanessa Pescatore, Ethan Corr, and Brandon Fleres

Not Pictured: Shivani Kohli

"Diploma"