

# Math/CS Chatter

## Department of Mathematics and Computer Science at Dickinson College

The 2020-2021 academic year was unlike any other we have experienced. The college ran all classes remotely in the fall 2021 semester. In the spring, first-years and sophomores were on campus for the first seven weeks, and juniors and seniors came to campus for the second seven weeks.

While the delivery of classes was very different, students adapted well to remote classes and found success in and out of the classroom. This annual newsletter is intended to update you on our activities this past year.



# Revolutionary Challenge

Two of the four finalists of the Revolutionary Challenge were developed by faculty in our department in collaboration with others both on and off campus.

## **The Data Science Initiative**

Drawing from Dickinson's leadership in liberal-arts education, Dave Richeson, Emily Marshall (Economics), Jeff Forrester, and a large team of faculty, students, and alumni proposed an interdisciplinary data-analytics program that would support and enrich multiple academic programs, helping students in every major learn to understand, critique and construct data-driven arguments that drive decision-making. Most importantly, it would be informed and defined by the Dickinson liberal-arts model.

The college has approved a new major in data analytics and an introductory course open to students in all majors. We have a new Data Analytics department, co-chaired by Dick Forrester and Emily Marshall, and hired two new faculty, Xiexin Liu and Eren Bilen. Jeff Forrester and Eddie Tu also have joint appointments in the new department.

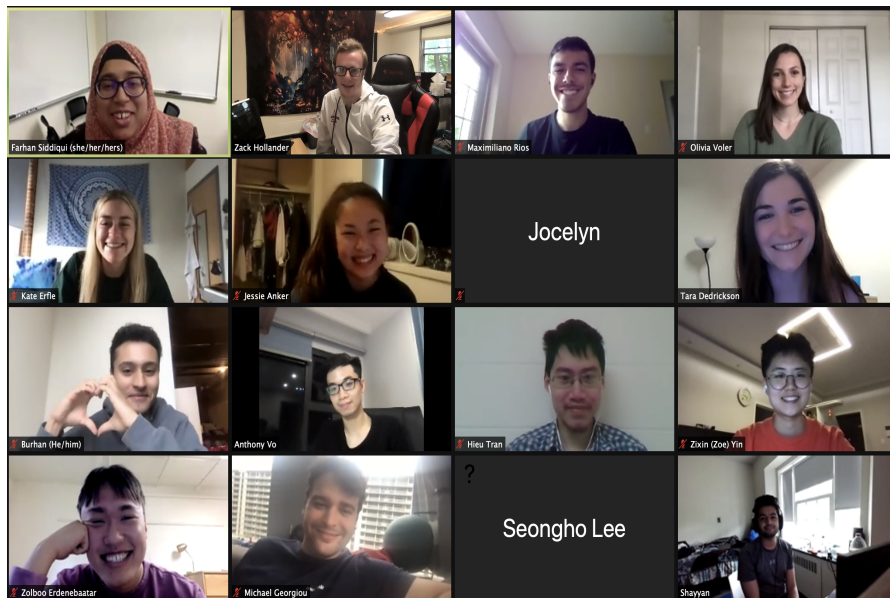
## **FutureLab**

The mission of Future Lab is to build on Dickinson's established strengths in global, sustainability, and civic engagement and interweave these values into future-focused classroom learning, high-level projects with off-campus partners and related skill-building in areas such as systems thinking. The ultimate goals: to help students recognize the megatrends that shape our fast-changing world and develop the strategic foresight and creative problem-solving skills to adapt and contribute meaningfully. Grant Braught and Damon Yarnell (CAILCD) joined with a team of faculty and alumni to develop this new initiative.



# Student Highlights

The Mathematics and Computer Science Department is pleased to announce that following her presentation and successful defense, Beverley-Claire Okogwu was awarded Departmental Honors by unanimous vote of the faculty. Her project was titled Chaos Genetic Algorithms vs Genetics Algorithms: Why the Distributions of Mutation Sizes Matter



Professor **Farhan Siddiqui** and her Computer Science Senior Seminar class met on Zoom in Spring 2021.



We ended the year with a happy hour on the Tome patio for seniors. As you can see, Dickinson still had an outdoor mask mandate at this point. It was the first and only in-person group gathering that we had this academic year.



# Student Highlights

## 2021 Prize and Award Recipients

### **THE JANE HILL PRIZE IN COMPUTER SCIENCE**

Awarded to that member of the freshman class who excels in computer science  
Hailie Mitchell ('24)

### **THE WILLIAM W. LANDIS MEMORIAL PRIZE IN MATHEMATICS**

Endowed by George G. Landis '20. Awarded to a member of the freshman class  
William Tripp ('24)

### **THE HENRY P. CANNON MEMORIAL PRIZE IN MATHEMATICS**

Endowed by the trustees. Awarded to a member of the sophomore class who excels in mathematics  
Boo Sung Kim ('23)

### **THE FORREST E. CRAVER MEMORIAL PRIZE IN MATHEMATICS**

Awarded to a member of the junior class  
Ngan (Elly) Do '22

### **THE LANCE E. KOHLHAAS MEMORIAL PRIZE IN MATHEMATICS**

Awarded to a graduating mathematics major who has demonstrated excellence in that field and shows promise in an actuarial or mathematics career. Endowed by the friends and family of Lance E. Kohlhaas, class of 1986  
Anh (Kat) Pham ('21)

### **THE RICHARD HOWLAND PRIZE IN MATHEMATICS AND COMPUTER SCIENCE**

Awarded to a senior for excellence in mathematics or computer science  
Beverley-Claire Okogwu ('21)

### **THE CAROLINE HATTON CLARK MATHEMATICS SCHOLARSHIP**

Awarded for outstanding achievement in mathematics  
Alex Nash ('22)

### **THE RICHARD HOWLAND MEMORIAL SCHOLARSHIP**

Endowed through gifts and a bequest from the estate of Kenneth Howland in memory of his son, Richard Howland, former faculty member at Dickinson College  
Alex Nash ('22)

### **AMERICAN MATHEMATICAL SOCIETY FREE STUDENT MEMBERSHIP**

MAA Student Membership awarded to a member of the sophomore class who excels in mathematics.  
Wonje Lee ('23)

# Faculty Highlights

## Professor Jen Schaefer:

Her book Mathematical Themes in a First-Year Seminar was published by the Mathematical Association of America.

Jen was promoted to full professor this year.



## Professor Dick Forrester:

Published the paper Computational Comparison of Exact Solution Methods for 0-1 Quadratic Programs: Recommendations for Practitioners in the Journal of Applied Mathematics. This paper was coauthored with Noah Hunt-Isaak ('20).

## Professor Eddie Tu:

Was accepted into the Preparation for Industrial Careers (PIC) in Mathematical Sciences program through the MAA and will be developing a machine learning course. He will be partnering with a local construction company to supply data.



## Professor Lorelei Koss:

Published the paper Symmetries of an Online Culture: Two-Colour Frieze Patterns in Friendship Bracelets in the journal Symmetry: Culture and Science. The paper was coauthored with Kathryn Beck ('20).

# Faculty Highlights

## **Professor Grant Braught:**

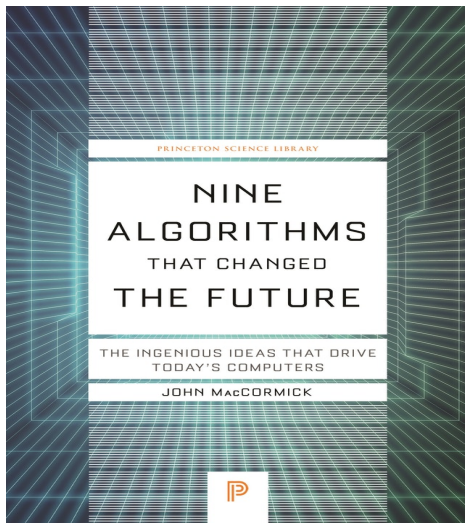
Awarded a 5-year NSF grant in collaboration with faculty from Drexel University, Worcester State University, Nassau Community College and Western New England College that provides \$1.9M of funding over 5-years for the project “Broadening Participation through Authentic, Collaborative Engagement with Computing for the Greater Good.”

Grant was inducted into the Seniors of Old Bellaire, an honor for faculty and staff who have completed 25 years of full-time service to the college.

## **Professor Dave Richeson:**

Has been writing for Quanta Magazine, the online science magazine funded by the Simons Foundation. Here is a link to one of his articles: [Topology 101: The Hole Truth](#)

Dave was awarded the John J. & Ann Curley Chair in Liberal Arts endowed chair this year.



## **Professor John MacCormick:**

A new edition of his book Nine Algorithms that Changed the Future appeared.

John was promoted to full professor this year.

## **Professor Jeff Forrester**

Published the paper Effect of removal of organic material on stable isotope ratios in skeletal carbonate from taxonomic groups with complex mineralogies with coauthors Marcus Key, Abigail Smith, and Niomi Phillips in Rapid Communications in Mass Spectrometry.

# Faculty Highlights



Community Engagement Challenge

## Broadening Participation through Scaffolded Sustained FOSS Engagement in an Undergraduate Computing Curriculum

Grant Braught, Farhan Siddiqui,  
Michael Skalak, Allen Tucker

Sponsored by  
 ENDLESS

In the summer of 2016, the entire CS faculty team at Dickinson College attended a workshop that led to the decision to change the year-long capstone to incorporate student engagement in Free and Open Source Software with a Humanitarian Focus (H/FOSS) projects. The Dickinson College team redesigned an undergraduate computing curriculum, infusing it with FOSS & computing for the greater good, making both an intrinsic part of how future computing professionals think about their work & world. The project “Broadening Participation through Scaffolded Sustained FOSS Engagement in an Undergraduate Computing Curriculum” by **Profs. Grant Braught, Farhan Siddiqui, Michael Skalak, Allen Tucker** was selected as 1 of 5 finalists from 150 projects in the Gnome Community Engagement Challenge - an international innovation competition focused on building Open SourceSoftware communities.



We want to hear  
from you.

We'd like to have a "alumni  
highlights" section in future editions.  
If you have news to share, please  
send it to:

Prof. Lorelei Koss  
koss@dickinson.edu

