Meet Your New Professors!

Adam Loy

Adam, originally from outside of Baltimore, has spent a good deal of time in the midwest, completing his undergrad at Luther College and grad school at Iowa State University. Following graduation, he spent four years teaching at Lawrence University in Wisconsin, where he was the only statistician. Adam is interested in many aspects of statistics including data visualization and R programming. His research entails developing methods to visualize the agreement between a proposed statistical model and the data in hand. When he is not teaching and researching, Adam's hands are full taking care of his three week old infant and chasing around his two year old son! During his free time, he enjoys reading and woodworking. Adam is excited about teaching at Carleton with other stats professors, working with students interested in the subject, and being apart of the expanding department and field. He is also enjoying the scenery here in Northfield and getting used to the wonderful views Carleton offers. Adam is teaching Probability and will be teaching Introduction to Statistics, Statistical Inference, Applied Linear Regression, and supervising a comps group this winter and spring.

Pumpkin Carving Contest

The SDAs for the Math and Statistics Department will be hosting a pumpkin carving contest on Wednesday, October 25 at 4:30pm on the patio area just East of the CMC. If the weather is bad, the
The annual NCS problem-solving contest will take place this year on Saturday, November 11, from 9am to noon. As in past contests, participants will work in teams of up to three on ten problems, which are usually at a wide range of difficulty levels. Although there will likely be more than seventy teams competing from around the region (there may even be some in Canada), our part of the contest will take place here on campus. If you are interested in participating, please let Rafe Jones know who will be on your team by Thursday, November 9. If you want to participate but don't have a team, let Rafe know that too (the sooner, the better!) and he might be able to help you find others with whom you could form a team.

NSF Graduate Research Fellowship Opportunities

The National Science Foundation Graduate Research Fellowship Program (GRFP) recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based Master’s and doctoral degrees at accredited United States institutions. The GRFP awards more than 2,000 new fellowships each year. The fraction of fellowships in subject areas supported by the NSF Division of Mathematical Sciences (DMS) in 2017 was just over 3.9% of the total. There remains room for improvement in participation by the mathematical sciences community. For more information about this fellowship, visit: http://www.nsfgrfp.org/applicants and http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201. Applications for Mathematical Sciences topics are due October 27, 2017.

Southern Illinois University

Are you considering Grad School? Southern Illinois University offers many wonderful and interdisciplinary programs. They are seeking students for their masters and doctoral programs in Mathematics. For more information about their program, visit: http://math.siu.edu.

Upcoming Events

Week 6, Tuesday, October 17, 4:00 - 5:00pm
Tea - Math Skills Center

Week 7, Tuesday, October 24, 4:00pm - 5:00pm
Tea with Adam Hoffmann - CMC 206
Job & Internship Opportunities

Thrivent Financial Internships
Thrivent Financial has various internship openings at their Minnesota, Wisconsin, and Illinois locations. The internships include Application Engineering, Finance, Accounting, and IT. These internships are both for during the school year and the summer, so be sure to keep track of the deadlines. Check out these opportunities on The Tunnel.

Marketing Architects, Analyst Intern
As an intern with Marketing Architects, you will be trained to become an expert in the intricacy of marketing business and adopt a hands-on approach to managing and analyzing each marketing campaign from product pricing, media selection, ad performance, sales funnel metrics to overall campaign profitability. This is an entry level internship but one with huge responsibility and rewards for success. You will make a difference every day and become a savvy marketing analyst with unlimited potential and skill set. Check out this opportunity on the Tunnel.

SAGA Fellow
SAGA Fellows are full-time tutors working with students in some of the most disadvantaged school districts in the nation – the students nobody thinks can succeed. In their 10-month program, SAGA Fellows help transform these students through daily, personalized tutoring in a program that is achieving extraordinary results. In Chicago, for example, SAGA students gained more than 2.5 years of growth in math in just one year of tutoring. Their current program is focused on tutoring for ninth grade algebra. SAGA does require candidates to have a Bachelor's degree and is a great gap year option. Want to transform American public education? Want to eliminate, not narrow the achievement gap? Want to transform the life of a student? Then apply to be a SAGA Fellow TODAY! For more information about the application process and to apply visit: http://sagainnovations.org/apply-now/join-our-revolution/.

Problems of the Fortnight

To be acknowledged in the next Gazette, solutions to the problems should reach me by noon on Tuesday, October 24.
1. Recently a few students from the geometry class at Wohascum High discovered six old railroad ties and decided to use them to build a regular tetrahedron. They started by putting down three of the ties, which were six feet long, in an equilateral triangle. Unfortunately, they then realized that only one of the three remaining ties was also six feet long; the other two were seven and eight feet, respectively. Because the students had nothing to cut the ties with, it was decided to go ahead and finish building a tetrahedron anyway. How much taller was the result than the students had originally intended?

2. Consider the $2019 \times 2019$ matrix whose $(i, j)$ entry (that is, the entry in the $i$th row and $j$th column) is $(i + j - 2)^{2017}$. Find (with proof) the determinant of this matrix, that is, find

$$
\det \begin{pmatrix}
0 & 1 & 2^{2017} & \cdots & 2018^{2017} \\
1 & 2^{2017} & 3^{2017} & \cdots & 2019^{2017} \\
\vdots & \vdots & \vdots & \ddots & \vdots \\
2018^{2017} & 2019^{2017} & 2020^{2017} & \cdots & 4036^{2017}
\end{pmatrix}
$$

Several solutions have come in since the last Gazette, but unfortunately I am caught in a time crunch at press time and so I’ll have to, with apologies, postpone detailed acknowledgments while mentioning that Erik Carlson is definitely entitled to a B.B.O.P. item (which he can pick up in CMC 217). Here’s hoping that we can all catch up, as well as enjoying some nice fall weather and colorful leaves, over midterm break this weekend. Enjoy!

- Mark Krusemeyer