Goodsell Gazette

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Meet Your New Professors!

Tom Madsen

Tom is originally from Minneapolis, and majored in math at Dartmouth College. Combining his interests in math, biology, and computer science, he received both his Master's and PhD in Biostatistics from Harvard University. His current research uses evolutionary mathematical and statistical modeling to describe cancer and its reactions to treatments and the immune system. Tom is an avid hiker and backpacker; on his most recent trip, he backpacked across most of Zion National Park. He also enjoys comedy podcasts and attending live music shows. Tom is delighted to be at Carleton because he loves how teaching lets him use his knowledge to help students and get them excited about a topic. In particular, he is on a mission to enliven statistics education, as basic statistics is essential knowledge for an informed citizen. Tom is teaching Introduction to Statistics in the Fall and Winter, Probability in the Winter, and Applied Regression Analysis in the Spring, as well as leading a comps group.

Mathematics and Statistics Colloquium

Speaker: Leslie Myint, Assistant Professor of Statistics, Macalester College
When: Tuesday, October 22, at 4:00pm
Where: CMC 206

Graphs Galore! Representing Knowledge in the Sciences and Humanities:

Knowledge moves forward by a continual integration of existing ideas with new findings. The problem nowadays is that there is so much research being conducted that it is difficult to fully be informed about all existing scholarly work. Text (in the form of research publications) is the main mode of storing the rich, interconnected knowledge that we are generating, and it is well appreciated to be a computational nightmare to work with. Myint's goal in this work is to capture the information woven through text in a computable form that holds promise for building more solid future knowledge: graphs. In this talk, she'll discuss her ongoing efforts to use graphs to organize biological information from texts and how these ideas might also be useful for structuring knowledge within the humanities.

Math and Stats Gathering

What: Get-together with donuts, apple cider, and candy
When: Tuesday, October 15, from 4:00-5:00pm
Where: CMC 206

The Department of Mathematics and Statistics invites you to come join us for an hour of food and fun! This upcoming Tuesday we'll be hosting a small get together where we will have donuts and apple cider from our local Fireside Orchard along with some candy! Please come join us and talk with faculty, majors, minors, and students exploring the department!

Putnam Signup Time is Here!

Fall term is just getting underway, but it's already time to register for this year's William Lowell Putnam Mathematical Competition. As many of you know, the "Putnam" is the most famous of all college math problem-solving contests -- a challenging exam focusing on mathematical insight and ingenuity. Typically, several thousand undergraduates across the United States and Canada participate, and the median score is usually less than 10 out of a possible 120. So if you get one of the twelve problems right, you're doing great! Whether you've taken the exam before or are considering taking it for the first time, you'll probably enjoy getting experience with past Putnam problems (and learning some new problem-solving strategies) at our weekly problem-solving group (see below).

This year the Putnam will be held on Saturday, December 7. That's during our winter break, but we'll gladly make arrangements for you to take the Putnam at another college or university. If you'd like to sign up, or just have questions about the contest, contact Rafe Jones in person (CMC 226) or via email (rfjones). Act soon! Although the Putnam is still some two months away, we have to submit a participant list in the near future, so please sign up by Tuesday, October 15.

Problem Solving Group

If you have always really enjoyed the problem-solving aspect to your classes, then the problem-solving group is just for you. Come join us in CMC 328 from 4:30-5:30 on Wednesdays, where we will work on solving some fun and challenging math problems together, and learn some strategies for solving them. Students at all stages of their Carleton careers are welcome.

Rafe Jones will be hosting the session. You can contact him for more information at (rfjones@carleton.edu).

Upcoming Events

Week 4

Tuesday Oct 15, 4:00-5:00pm

Math and Stats Gathering - CMC 206

Week 5

Tuesday Oct 22, 4:00pm
Math and Stats Colloquium Talk - CMC 206

Job & Internship Opportunities

New York Yankees, Quantitative Analysis and Baseball Operations Associates:
The quantitative analysis position will give students hands-on experience with quantitative projects related to player evaluation, player development, and/or in-game strategy. For this role, we are looking for students with strong quantitative reasoning, familiarity with statistical programming, and a passion for baseball. Apply at https://www.teamworkonline.com/baseball-jobs/baseballjobs/new-york-yankees/associate-quantitative-analysis-1962944.

The baseball operations position will give students hands-on experience with various important baseball operations tasks, including advance scouting, data collection and entry, and video charting. For this role, we are looking for candidates who are highly detail-oriented and have solid working knowledge of current baseball players, rules, and strategies. Apply at https://www.teamworkonline.com/baseball-jobs/baseballjobs/new-york-yankees/associate-baseball-operations-1962929.

Given that these are 12-month roles, we are only looking for students who graduate in or before Summer 2020. Applications are rolling and we get a large volume of applications, so we encourage students to apply as soon as possible. We only take applications via the links above. Email Justin Sims (Quantitative Analyst, Baseball Operations) at jsims@yankees.com with questions. Logan Crowl ('18) (logan.m.crowl@gmail.com) is also willing to discuss his experience working for the Yankees and answer any questions.

Southern Teachers Agency:
Founded in 1902, Southern Teachers is the oldest teacher recruiter in the country, and we help teachers find jobs at the finest K-12 private/independent schools in the South. We are seeking candidates for math teaching jobs for the 2020-21 school year. Interested students should apply via our website, https://southernteachers.com/contents/home/seekingjobs.

Government & Nonprofit Career Fair

Meet with over 88 government and nonprofit employers recruiting all majors! The fair is on Friday, November 1, from 10am to 3pm at the University of Minnesota, and the registration deadline is October 23 at 11:59pm. For more information and to register, visit https://apps.carleton.edu/career/events/?event_id=1000010458&date=2019-10-23.

Problems of the Fortnight

To be acknowledged in the next *Gazette*, solutions to the problems below should reach me by noon on Tuesday, October 22.

1. Austin and Beverly are playing a game in which they take turns adding a digit at the end of a number, starting with a single nonzero digit that Austin chooses and writes down on his first move. (Later digits are allowed to be any of $0, 1, 2, \ldots, 9$. Digits may be repeated at will.) If a player succeeds in making the number divisible by 13, she or he wins; otherwise, the game continues with the other player adding a digit at the end of the new number. (A sample short game: Austin writes down 4, Beverly adds 2 to form 42, and now Austin can win by adding the digit 9, because $429 = 13 \times 33$.) Assuming optimal play by both players, who should win, and how many moves might it take? Or should the game continue indefinitely? (Do show why your answer is correct.)

2. Let f be a continuous function which is defined for all real numbers. Show that f is periodic if and only if there exist real numbers k and T such that $T > 0$ and such that for all real numbers a,

$$\int_a^{a+T} f(x)\,dx = k\,.$$

Solutions to both problems posed September 27, using *Mathematica*, came in from John Snyder in Oconomowoc. Alas, as of now no solutions from Carleton students have come in. It will probably be a while before I have a chance to post my own solutions, so if you were thinking of submitting a solution to one of the September problems, it's not too late!

- Mark Krusemeyer

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