Konhauser Memorial Problemfest

On Saturday, February 28, St. Olaf will host the 23rd annual Konhauser Memorial Problemfest, which is named after the late Macalester professor and legendary problem poser Joe Konhauser. In this contest, teams of up to three students get three hours (9 a.m. to noon) to work together on a set of ten challenging and intriguing math problems. The participants then have lunch together while the solutions are graded, and the results are announced right after lunch. The winning team gets to take the famous granite "pizza trophy" home to their college for the year. You can see the trophy on the table in the math department atrium -- last year's top Carleton team brought it home after a one-year absence. It would be great to have it stick around for another year! To sign up for this year's Konhauser, contact Rafe (rfjones). Three people can sign up as a team, but individuals are also welcome to express interest -- it should be possible to find you some teammates.

If you want to see what Konhauser problems are like and get some practice solving them, drop by the problem-solving group, which meets on Wednesdays 4:30 - 5:30 p.m. in CMC 328.

Numbering Changes for Stats Courses!

We have renumbered two courses that were offered as Math 315 Topics in Probability and Statistics. Starting this spring, Stochastic Processes will have the number Math 365 and next year, Survey Sampling will have the number Math 255.

This does not affect the requirements for the Math/Stats major:
A Carleton student following this option must take the following courses: Math 232, 236, 265, 245, 275 and one of 255, 315 or 365, plus two Mathematics courses above 236 (one of which may be Computer Science 324); at least one of these two courses must be taken outside of the Applied Mathematics area. In addition, the Senior Integrative Exercise is required.

The previous wording was: Math 232, 236, 265, 245, 275 and 315, plus...
Mentoring for Women in Math

WhIMS (Women in Math and Science) is starting a mentoring program for women in math and science to help foster a network of like-minded women who can provide educational, career, and personal support. We are looking to pair up younger women (freshmen and sophomores) in STEM disciplines with older women (juniors and seniors) in their field. Mentor-mentee relationships will be mostly self-directed, but we are also planning social events for those interested in being involved. Please email Rachel Schuh (schuhr) if you are interested in being a mentor or a mentee!

Michelle Mastrianni's Winning Poster

Two weeks ago at the Joint Mathematics Meeting (JMM) in San Antonio, Michelle Mastrianni and her fellow REU participants won the “Outstanding Poster Award” for their poster presenting their REU findings. The research was on algebraic combinatorics and involved combinatorial words and Young Tableaux. They worked on a problem dealing with an analogue to a well-studied equivalence relation on words. By the end of the summer, they found some really interesting results, including an algorithm to determine whether two words are in the same equivalence class. At the JMM Undergraduate Poster Session, they presented their poster to friends, interested combinatorialists, and two judges. Based on the presentations and the poster itself, the judges awarded them the “Outstanding Poster Award,” which was only awarded to about 15% of the groups/posters at the meeting.

Michelle’s poster is currently hanging in the CMC on the second floor. Come check it out!

Summer Statistical Consulting Opportunity

Are you interested in using your statistical skills to tackle real-world problems? Professor Bob Dobrow is looking for several students to work on statistical projects brought to him by local community members.

You will get to work on a variety of projects, improve your R skills, and maybe even learn new statistical methods. This job will run for 8 weeks over the summer. Prerequisites are Math 245 and Math 275. If interested, email your answers to the following questions to Bob (who is on sabbatical this term) at rDOBROW@CARLETON.EDU. Deadline is February 21.
1. Name
2. Class Year
3. Major(s)
4. Describe all statistics and probability-related course work. Include term taken and course grade.
5. Have you taken any courses in computer science, or other relevant disciplines? Describe your experience and comfort level using statistical software.
6. Name one professor who can serve as a reference.
7. Describe why you are interested in this summer opportunity and why you would be a good choice.

Job & Summer Opportunities

University of Minnesota, Minneapolis REU
The University of Minnesota is seeking two undergraduate students to spend 8 weeks residence between May 24 and July 18 for a summer program in the general fields of dynamical systems and pattern formation. For more information, visit: www.math.umn.edu/~scheel/reu/.

Center for Systems Biology REU
The Center for Systems Biology seeks enthusiastic undergraduates for Research Experiences for Undergraduates (REU) summer internships. Student projects are for ten weeks from (approximately) June 8 – August 22, 2014. The Center for Systems Biology includes collaborating scientists from the Seattle BioMedical Research Institute. For more information, visit www.systemsbio.org/2015-research-experiences-undergraduate-interns.

Iowa State University Math REU
The Iowa State University of Science and Technology 2015 REU program will run from June 6 to August 1. Students may perform research on topics of graph theory, numerical analysis, linear algebra, probability, and dynamical systems. This is a research group based REU where all participants collaborate with others. Furthermore, there is no workshop component. For more information, please visit: orion.math.iastate.edu/reu/.

Bigelow Laboratory REU
Undergraduates in Bigelow Laboratory's summer REU Program spend ten weeks at the Laboratory conducting independent research with guidance from a scientist mentor. Research areas vary year to year, but include marine microbiology, ocean biogeochemistry, optical oceanography, remote sensing, bioinformatics, sensory biology and phytoplankton ecology. The 2015 program dates will be June 8 to August 14 and will be held at the Laboratory's East Boothbay campus. For more information, visit: www.bigelow.org/education/reu/.

Kolenkow-Reitz Fund
The Kolenkow-Reitz Fund provides a stipend and travel support for Carleton students working with non-Carleton science and math faculty at another institution during the summer. Awards fund student stipends ($430/week for full time work) for up to 10 weeks and may include up to $700 in expenses to help defray travel or other expenses. Before applying, students should have already contacted and discussed the nature and timing of their project with the person with whom they are planning to work, as well as with a faculty member at Carleton who can vouch for the project. For more information, visit: apps.carleton.edu/mathscience/faculty/studentresearchaway/.

Problems of the Fortnight

Problem #3:
13 friends (each with a positive integral weight) note that if any one of them agrees to referee, the other twelve may divide into two teams of six with equal total weight for some sort of sports activity. Must it be the case that all 13 friends have the same weight? (Bonus: What if, instead of positive integral weights the friends have positive real weights?)

Problem #4:
Lord Melvin has a strange two dimensional sculpture in the courtyard of his manor. It consists of short vertical poles and meter long horizontal rods. No two of the poles are more than 1 meter apart, and between each pair of poles that are exactly 1 meter apart is a rod. There are no other rods in the sculpture. Prove that the number of rods in the sculpture is at most equal to the number of poles in the statue.

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