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MSCS Colloquium

Title:	Precursors to the Data Explosion: Computing with Data using Reproducible Analysis Tools
Speaker:	Nick Horton
Date:	Monday, October 7th
Time:	3:30
Location:	RNS 410

About the talk: Computational data analysis is an essential part of modern statistics, but our introductory statistics courses and much of our undergraduate statistics curriculum often neglect this fact. In this talk, I will discuss ways to provide a practical foundation for students to learn to “compute with data” as defined by Nolan and Temple Lang (TAS, 2010). This includes initial exposure in introductory statistics classes to some of the realities of non-textbook data, as well as the structure of an undergraduate “data science” class where students participate in the entire data analysis cycle (from forming a statistical question, data acquisition, cleaning, transforming, modeling and interpretation). By introducing students to tools for data management, storage, manipulation, visualization and reproducible analysis that are common in data science and applying those tools to real scenarios, we are preparing them to think statistically in ways that will allow them to address the impending data explosion.

Research interests: My interest continues to focus on interdisciplinary scientific research as well as the advent of big data has been a hallmark of the past few decades. It is increasingly important to be able to connect disciplines in order to further scientific knowledge. As an applied biostatistician, my work is based squarely within the mathematical sciences, but spans other fields in order to ensure that research

is conducted on a sound footing. The real-world research problems that these investigators face often require the use of novel solutions and approaches, since existing methodology is sometimes inadequate. Bridging the gap between theory and practice in interdisciplinary settings is often a challenge, and has been a particular focus of my work.

This Week's Seminar

There will be no MSCS Seminar this week.

Fill Out Your IMaP

Are you a mathematics major? Have you filled out your IMaP yet? If not, go get it done! Completing an IMaP is necessary to be considered a mathematics major, and you get to learn more about possible career paths while filling it out! So go ahead and fill it out!

Google Recruits at St. Olaf!

Ever wonder what it might be like to work at Google? “Googler” Ken Shrum will be visiting campus on Monday 10/7 to tell us what, why, and how to work for Google! His visit is sponsored by the Piper Center and the CS program. Here are three ways you can connect with Ken.

1. **“Google office hours.”** Ken will be available from **2:30-4pm Monday in RMS 200** to meet with anyone who is interested in chatting with him. If you’re interested or intrigued, you’re invited to come! Google does have programs for people after their freshman and sophomore years as well as traditional (paid) internships after the junior year and hiring upon graduation. (In fact, last summer a St. Olaf student worked with them after her sophomore year, and at least one Ole has recently been hired upon graduation.)

2. **“Careers in Computing at Google.”** Ken’s general recruiting talk will be at **6:30-7:30 Monday in RNS 210**. He will describe some of the positions available, such as Associate Product Manager, Associate Product Manager Intern, Software Engineer, and Software Engineer Intern, as well as the fascinating things folks do in such positions. He’ll talk about Google’s company-wide values, the excitement of working for them, and how you, too, can apply (remember, Oles have landed both internship and regular jobs at Google).

3. **“Google Interview Preparation Session.”** Ken will lead a session at **7:30-8:30 Monday in RNS 210** on what it’s like interviewing for a technical position at a company like Google, including sample questions, how an interviewer might be viewing you, etc. The practice of giving a job candidate a realistic problem to work on during an interview is widely used among top tech companies, and Ken’s experienced insight into how Google approaches this, about Google’s values and about some potential pitfalls to avoid, can give you insight and a competitive “edge.”

Come to one or all sessions! For more information, contact Dick Brown (rab@stolaf.edu) or the Piper Center.

Internships and Co-op Opportunities for Undergraduates

Interested in applying for an internship or co-op opportunity that utilizes your Mathematical, Statistical, and/or Computer Science skills? Below is a sampling of opportunities along with their deadlines. For more information on some internships/co-ops and what they are about, please visit: <http://www.ams.org/programs/students/undergrad/emp-internships> and the Piper Center on campus.

- Wolfram Research Summer Internship (Makers of Mathematica and Wolfram Alpha)
 - *Deadline: April 1, 2014*
 - <http://www.wolfram.com/company/opportunities/intern.html>
- Oak Ridge Science Semester at Oak Ridge National Laboratory
 - *Deadline: March 1, 2014*
 - <http://www.acm.edu/programs/15/oakridge/index.html>

Math Research Course in the Spring

Are you interested in a different kind of math experience? Have you wondered what all the fuss about research is? In spring semester, Prof. Dietz will be offering **Math 396: Directed Undergraduate Research** to just 3 students. It’s a great opportunity to do original mathematics research, while getting course credit. It may sound daunting, but plenty of students just like you have done successful research projects in the past.

This course is for students who will be getting jobs after graduation, going to graduate school in any subject, or going into teaching. You’ll certainly learn mathematical content, but you’ll also learn to take control of a significant project – from start to finish – in a unique setting.

Here are some details:

- The course will be small, with only 3 students working on a research project together.
- The exact research topic is not set in stone, but it will probably have something to do with algebra.
- Despite an 8am listing in the Class & Lab, we’ll probably be able to meet at a more palatable time of day.
- Students will be expected to meet with Prof. Dietz once a week, meet with each other once a week, and do independent work as well.
- The pre-requisite is Math 252 or permission of instructor.
- See, call, or email Prof. Dietz (dietz@stolaf.edu, x3936) with any questions.
- **Registration will be by permission only, so if you’re interested please email a short paragraph about why you want to take the course and who you took Abstract Algebra with to dietz@stolaf.edu.**

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If you would like to submit an article or math event to be published in the Math Mess, e-mail jacobsoj@stolaf.edu