

UNDERGRADUATE MATHEMATICS SEMINARS

This week, there will be (at least!) **two seminars**. These seminars will be delivered by guests to the department.

The **first** seminar of the week will be this coming **Monday February 26**, at 5:00pm in Bailey 201, preceded by refreshments in the Math Commons Room, Bailey 204 at 4:45.

The talk will be delivered by **Professor Brian Winkel** from the United States Military Academy, West Point, NY, who is visiting Professor Black.

TITLE: Cipher Busting by Edgar Allen Poe, Jules Verne, William F. Friedman - and Beyond

ABSTRACT: In this talk we will present some strategies for busting cryptograms and then move on to discuss several methods of busting ciphers from literary sources using counting and statistical approaches. Cryptology, the study of making and breaking ciphers, offers rich historical and mathematical material for study, and we shall touch on both.

Biographical sketch: Professor Brian Winkel is the Editor-in-Chief and a Founding Editor of *Cryptologia*, a journal devoted to all aspects of cryptology. He is also Editor-in-Chief and Founding Editor of *PRIMUS* - Problems, Resources, and Issues in Mathematics Undergraduate Studies, a journal devoted to all aspects of teaching undergraduate mathematics. Currently he is a senior faculty member in the Department of Mathematical Sciences at the United States Military Academy, West Point NY. He has taught in liberal arts setting (Albion College), engineering setting (Rose-Hulman Institute of Technology), and now military setting (United States Military Academy). Originally schooled in Noetherian rings (Ph.D. Indiana University, 1971) his real passion is mathematics applied and he enjoys teaching a modeling and technology approach to learning mathematics.

There will be another seminar on **Friday March 2**, at **4:15** in Bailey 201, preceded by refreshments in the Math Commons Room, Bailey 204.

The talk will be delivered by **Professor Gideon Maschler** from Emory University in Atlanta, GA, who is visiting Professor Tønnesen-Friedman.

TITLE: On Surface Geometry

ABSTRACT: In this talk we will explore various classical notions associated with surface geometry. One typical such notion is the curvature of a surface, invented by Gauss in the late 19th century, along with the basic distinction between intrinsic and extrinsic geometry. Much of this talk could be understood intuitively, although we will also have occasion to use multivariable calculus.

Biographical sketch: Professor Maschler received his Ph.D. in mathematics from The State University of New York at Stony Brook in 1997. Before going to Emory University, he spent time at the Landau Center, Institute of Mathematics at Hebrew University of Jerusalem, The Ohio State University, the Max Planck Institute in Bonn, and the University of Toronto. His research interests include complex differential geometry, and special structures on manifolds.



Do you have any ideas for future newsletters?

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under "Department Activities"

Present Your Work: Deadlines Approaching!

- **HRUMC IV: April 21, 2007** The 14th annual Hudson River Undergraduate Mathematics Conference will be hosted by Siena College on Saturday, April 21. As Union College is one of the four founding colleges of this conference, we have traditionally had a strong presence there – as speakers and as participants. If you wrote or are writing your thesis this year, the HRUMC is a fantastic place to share your results with other collegians. You should strongly consider presenting a 15-minute talk. HURRY! The **deadline** for submitting an abstract in **SUNDAY, February 25**.
- **Steinmetz Approachetz** As you probably know, the 17th annual Charles P. Steinmetz Symposium will be held May 4-5. Again, most senior math majors present a talk at this in-house conference, but certainly any underclassman can present a talk – or a poster – describing their interesting scholarly or creative work. HURRY! The **deadline** for submitting an abstract in **THURSDAY, March 1**.

REUs This Summer: Deadlines Approaching!

Several math departments at colleges and universities around the country offer math undergraduates the opportunity to try their hand at math or multidisciplinary research over the summer through National Science Foundation supported **Research Experiences for Undergraduates**. REUs provide a stipend to their participants, and usually cover a high percentage of travel and living costs in addition to the stipend.

On the **bulletin boards** around Bailey Hall, you will find posters and announcements for several programs. For a (reasonably complete) list of this summer's REU programs and links to their descriptions, go to <http://www.ams.org/employment/reu.html>.

Be aware! Most of these programs have application deadlines sometime in March, and you will need to secure letters of recommendation for your application. So, if you would like to apply to an REU, get the ball rolling!

Resources for Students

- **WebWork Woes?** Don't just email your professor in desperation – go and actively seek *free* tutoring in the Calculus Help Center (CHC). The CHC is open five nights a week, Sunday – Thursday from 7:30 -10:00pm. It is staffed by experienced, kind, and helpful upperclassmen and it services all calculus courses through Math 115. You can find the CHC in the seminar room of Sorum House.

Problem of the Newsletter: February 23, 2007

Unfortunately, no winning solutions were submitted to last week's problem...

Here is this week's problem: In a single-elimination match tournament with 128 participants, how many matches will be played?

Professor Friedman will accept solutions to this problem until 12:00 noon Thursday, March 1.