

UNDERGRADUATE MATHEMATICS SEMINAR

The next and *final meeting of the term* of the seminar will be this coming **Thursday, November 8**, with refreshments beginning at **3:45** in the Math Common Room, **Bailey 204**, and the lecture following at **4:00** in **Bailey 201**.

In this week's seminar, Union's own **Professor William Zwicker** will present the following talk:

TITLE: Hypergame!

- or -

I Stubbed my Toe on the Foundations of Mathematics

ABSTRACT: In the early 1980s I was working on a test for a Gen Ed mathematics course I was teaching at the time, when a truly wicked idea for a bonus problem came to me. In fact, the more I thought about the idea, the nastier it got – I had stumbled across a new paradox in the theory of games. In my undergraduate logic courses I had learned about the fundamental importance of Russell's Paradox (1903), which badly shook up researchers interested in the foundations of mathematics. Also, I had noticed some connections between Russell's Paradox and proofs of two important results in mathematics: the set of real numbers is uncountable (Cantor) and the halting problem is unsolvable (Turing). So, I knew that paradoxes were more than just curiosities.

But the feeling of being really confused by this new paradox was very different from that of reading about an old controversy. It was frustrating . . . and energizing at the same time. You may also feel a bit dazed and annoyed when you try to figure out this paradox. But that's OK!

This will be the last seminar of the Fall term.

See you in January!

Term Abroad – for a Math Major? By Patricia Linden, '09

Some of you might be wondering where Math Department student worker and major Patricia Linden has been this term. Well, she recently contacted the Math Department from her *term abroad in Belgium* to send her regards and to tell other students about her experience this fall. She would like to encourage other math majors to plan ahead in order to take advantage of the international study opportunities. Here is what she wrote:

"Everything over here is going really well. I could get used to being in Europe!

"I am a double major, math and economics, so I

knew that if I wanted to study abroad I would have to do some planning. I sat down and figured out when the mandatory math classes were offered (Linear Algebra in the winter, Abstract Algebra in the spring, and Real Variable Theory in the fall) and saw that my only opening would be fall term of Junior year. Economics is not as structured a major so I knew I could arrange my courses around a term abroad. I started looking into terms abroad and knew I had to go somewhere I would get credit towards one of my majors. I could get one economics credit in Central Europe, two in Ireland, and three in Belgium. I applied winter term to Belgium and Ireland and Union's term



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under "Department Activities"

abroad program decided Belgium would be a better program for me (I didn't get into Ireland).

"Once I knew I was going abroad I doubled up on my math classes spring term and made sure I would still be able to graduate on time if I went abroad. It took more planning than I had thought but it was worth it. I am now on track with both of my majors and I was able to go to Europe for my first time.

"I am in Antwerp, in the Northern part of Belgium. The southern half of Belgium speaks French and the northern half speaks Dutch/Flemish. When we first arrived we took an immersion course in Dutch, where we met all of the exchange students from various countries. I can now speak a little Dutch and I made some great friends. I am taking four economics classes here, and

I find I miss my math classes. The courses here are very different. They only meet once a week, the class size is bigger and the work is mostly independent. You aren't as close with your professors, but maybe that's because I'm not making their copies! Also, your grade depends entirely on your final exam. There is no room for error!

"I have been traveling all over Belgium, going on day trips to the North Sea, to the Ardennes and to Brugge. I have also spent weekends in Austria, Hungary, London, and the Netherlands. I will be going to Prague to visit other Union Students as well as Dublin, Paris, and Germany.

"I know there are no math-specific terms abroad but with a little planning you can absolutely go abroad, and I highly recommend it! See you in January!"

Problem of the Newsletter: November 5, 2007

No student submitted a winning solution to last week's Problem of the Newsletter, though this column awards an honorable mention to **Susan Beckhardt** for discussing a partially correct solution with this column's editor.

Here is this week's problem: A cute little logic-puzzle from a recent "AskMarilyn" column, by Marilyn vos Savant, in Parade magazine: Jack, Janet, and Chrissy meet at their corner coffeehouse and buy half a dozen doughnuts. Each friend always tells the truth or always lies. Jack says that he got one doughnut, but Janet says that Jack got two, and Chrissy says that Jack got more than three. On the other hand, all three friends agree that Janet got two. Assuming that each friend got at least one and that no doughnut was cut and divided, how many doughnuts did each friend get?

Professor Friedman will accept solutions to this problem until 12:00 noon Friday, November 9th. Email your solution to him (friedmap@union.edu) or put it in his mailbox in the Math Department's office on the second floor of Bailey Hall.