

*** SPECIAL UNDERGRADUATE MATHEMATICS SEMINAR ***
Union College Math Alumni Career Panel

DATE: **TUESDAY, October 27th**

Time & **4:15pm** – Refreshments in the Math Common Room, **Bailey 204**

Location: **4:30pm** – Seminar in **Bailey 207**

DINNER: **6:00pm** – Dinner with alumni at Kabul Night.

The October 27 math seminar will host three Union math majors, **Graham Bryce '98**, **John Corey '80**, and **Andy McKenzie '09**, for a math career panel. The alumni will give 15-minute presentations about their professions (see below); **Pete Fowler**, Senior Associate Director of the Becker Career Center, will also talk about job opportunities in mathematics. The last 15 minutes will be reserved for questions.

Following the panel, there will be a dinner at Kabul Night where students can chat with the alumni about job opportunities in mathematics. The dinner is free for students; those who would like to attend should email Chris Hardin (hardinc@union.edu) as soon as possible.

Graham Bryce '98 (math major) is an actuary at AXA Equitable; he is responsible for forecasting the annuity business so that the company management can estimate future earnings under different economic conditions. He will discuss the requirements for becoming an actuary, sample work done by actuaries, a comparison between insurance companies and consulting companies, and steps that you should take to learn more about actuarial science.

John Corey '80 (mechanical engineering, math) is an inventor. After working at MTI as lead designer of the Automotive Stirling Engine, John invented multi-cellular insulating window shades along with the machines that manufacture them. He founded CFIC-Qdrive in 1989, where he is president and lead designer of Q-drive's resonant linear motor drives and cryogenic coolers. John continues an international consulting practice in advanced thermo-mechanical systems, and has toured the US as an ASME Distinguished Lecturer on Creative Problem-Solving.

Andy Mackenzie '09 (math, economics) is an Operations Research Associate at ZS Associates; he has worked with clients in both the pharmaceutical and biotech industries in a variety of practice areas, including strategic sales force sizing, physician segmentation using patient level data, post-merger sales force integration, and incentive compensation design. Andy is interested in designing tools and methodologies for new and developing practice areas.

Where is Math Major Evan Ryan '11?

Hello from Vietnam! I am currently one month into my term abroad experience and have been having the time of my life. Being a mathematics major at Union and going abroad do not seem to mix, but I encourage all underclassmen interested in studying abroad to apply. There are no terms that deal specifically with math, but in my opinion, this gives you more freedom to choose where you want to go. I chose to go to Vietnam because I wanted the challenge of learning a new language and experiencing a culture very different from that of America. After some initial culture shock, I have come to enjoy interacting with people that come from a different way of life.

I am taking four courses in Vietnam: Photography, Vietnamese Life and Culture, Vietnamese Language, and an internship. At Union, I have taken nothing remotely close to these courses, but I am enjoying the

change of pace. The curriculum here is allowing me to explore other fields that I do not believe I would have tried on my own at school. Having no prior experience with a camera, I am learning to think like a photographer and distinguish the difference between a 'bad' and 'good' photograph. In the Vietnamese Life and Culture course, I am learning the political, social, and economic issues in Vietnam in both the past and the present. Although the Vietnamese and American languages share an alphabet, the languages could not be more different. In my language course, I learn the basics of speech and try to remember how to pronounce the words and which tone to use. Although I have not started my internship yet, I know that I will be helping a research center by using English language databases to collect data and by helping the other employees learn English.

All these courses may make it seem like there has been little time to travel, but we have actually already been to more than ten of Vietnam's most famous cities. We got to know Ho Chi Minh City (formerly Saigon) for three and a half weeks before we went on a ten-day trip through Central Vietnam. On this trip, we saw everything from the plains of the Mekong Delta to the mountains of Dalat and endless rice paddies throughout. On this ten-day trip, we saw many different subcultures of Vietnam and made many memories. We rode elephants, took a cooking class, crawled in war-era underground tunnels, and saw countless breathtaking views.

I just settled down in the northern city of Hanoi, where we will spend the majority of our time during the remainder of the trip. I am looking forward to what this city has to offer. I realize how fortunate I am to be able to study abroad, but I still find myself thinking about returning to Union, where Linear Algebra awaits this winter.

Mathematical Recreations for Students

- **Math Crafts** Do you enjoy knitting, crocheting, needlepoint, origami, or other crafting that might involve symmetry or mathematical patterns? Join **Professor Kim Plofker** and her group on **Friday afternoons** at about **5:00 pm** in the Math Common Lounge, **Bailey 204**. The campus-wide reputation of this group is growing quickly (and positively). In fact, this group has been contacted recently about the possibility of producing its first commissioned artwork, a Penrose-tiling patchwork quilt.
- **Problem Solving Seminar** On Wednesdays, in **Bailey 201** from **12:55 to 1:40** **Professor Paul Friedman** will be running a problem-solving seminar. While intended to help students prepare for this year's Putnam Exam, these fun workshops are open to everyone who likes to play with math problems. Join us!

Problem of the Newsletter: October 23, 2009

Congratulations to recent Union graduate, **Andy Mackenzie '09**, for submitting a correct solution to last week's problem. An honorable mention is given to **Amanda Laven '13** for her submission. A solution to the problem has been posted on the bulletin boards around Bailey Hall.

Here is this week's problem: Given a set of $n + 1$ positive integers, none of which exceeds $2n$, show that at least one member of the set must divide another member of the set.

(Hint: A clever application of the *Pigeonhole Principle* can be used to solve this problem. One version of this principle states that if $n + 1$ objects are distributed among n boxes, then one of the boxes will contain at least 2 objects.)

Professor Friedman will accept solutions to this problem until noon Thursday, October 29th. 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.