
VITAL SINES

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A newsletter of the Plattsburgh State University Mathematics Department

Congratulations graduating seniors!

***Keep in touch – we would love to
hear from you.***

***To all our students, good
wishes for your exams.***

***Stay cool, get a good night's sleep,
and remember that the best review
is to work problems ...***

*For some excellent advice on how to study for
mathematics exams, see:*

<http://mathcs.slu.edu/undergrad-math/success-in-mathematics>

MAA at Siena college

Six Plattsburgh math students traveled to the Fall 2008 Seaway Section meeting of the Mathematical Association of America.

Liz Dukette, Shawn Gilbert, Lucas Tooker, Krystal Tremblay, Nick Warner, and Yeyao Xiao attended the meeting, which was held at Siena College, in Loudonville, over the weekend of October 17 and 18.

Yeyao Xiao gave a talk on an application of the Cavalieri principle. This was one of only a handful of undergraduate talks given at the meeting. **Dr. Sam Northshield**, who also attended the conference, gave a talk on graph colorings.

The conference also included plenary talks by Alan Taylor of Union College, Richard Cleary of Bentley College, Darren Narayan of the Rochester Institute of Technology, and Jack Narayan of SUNY Oswego. The subjects of the plenary talks ranged from voting theory to the use of mathematics in fraud detection to the teaching of calculus using real-world applications.

The Spring 2009 meeting of the Seaway Section is scheduled for the weekend of April 3 and 4 at the Rochester Institute of Technology.

-Greg Quenell

MAA at Siena College: The students speak:

I would have to say that going to this conference was a highlight of the semester so far, for a number of reasons. It was very interesting to hear the talks from different professors, and they were all very good. However, what I found most interesting was what the students were contributing. The reason is simple, it was interesting to see what people who are maybe a little more advanced than I am could do, and to see if I could follow it. I am happy knowing that I could follow most of what I heard.

Going to this conference was a blast. It was a lot of fun to hang out with some of the other math majors in a scenario other than the classroom, something I do not get to do much. All in all going to this conference was a lot of fun and I would recommend it to any math major.
- Nick Warner

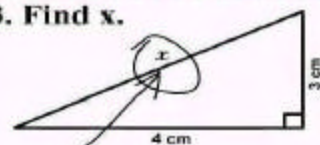
Dr. Aaron Luttmann from Clarkson University gave an interesting talk about how to use linear algebra to remove blur from digital images. This application is currently being used to process images from the Hubble telescope. To me the most impressive presentation was *Across 50 years of teaching*, delivered by Dr. Jack Narayan from SUNY Oswego. He showed us, through his eyes, how teaching mathematics has changed over the years. The presentations by Yeyao Xiao and Dr. Samuel Northshield were also fulfilling. However it was the sense of camaraderie that I enjoyed most. This was my last conference as a PSU mathematics undergraduate and I'm glad that it was the best; thanks to all who came along!
- Krystal Tremblay

I really enjoyed the talk *50 years of teaching*. Although I am not going to pursue a career in education, I thought the talk was inspiring. Overall I found the MAA conference a great opportunity. The talks were a good way to see how mathematics is applied to life applications, and other ways to use a mathematics degree. I think that every student pursuing a major in mathematics should experience a conference such as this.
- Elizabeth Dukette

Kudos to... Yeyao Xiao for giving a talk at the MAA conference at Siena college and to **Krystal Tremblay** for firing up enthusiasm amongst students to attend conferences...

The **Math Club officers**, for making the Math Club so active this semester; specifically President **Jordan Ellithorpe**, Vice President **Christine Miles**, Secretary **Krystal Tremblay**, and Treasurer **Todd Bailey**.

3. Find x.



Here it is

Math Club

The Math Club has been very busy this semester. Our showing of *A Beautiful Mind* was a success! Thank you to everyone who attended. We are glad you had a good time. On November 19th the Math Club conducted a student panel discussion for some students in a Math Honors Society at a local high school. The students were on campus from 11-1:50 participating in many activities within the mathematics department.

Interest surveys will be handed out to classes very soon. These surveys will help us decide what events mathematics students would enjoy and find beneficial so that the efforts of the math club are in the correct direction.

If anyone is interested in being involved in Math Club next semester or wants to run for office please contact Dr. Bodenrader or Jordan Ellithorpe (elli8945@mail.plattsburgh.edu).

As always we meet Wednesdays at noon in the Math Commons! Hope to see you there!

-Jordan Ellithorpe, President of Math Club

News from Alumni...

We have news from **Jim Owens**:

I hope you're sitting down as you read this... ;-) I'm in my first semester as a PhD student in the Math program here at Clarkson University, having completed the MS in Computer Science last spring. I'm still working in CS, but with a more theoretical focus. I've elected to do my qualifying exams in the areas of networks, algorithms and abstract algebra.

The story may help to inspire others when they learn it might just be possible to teach an old dog. ;-) In fact, my decision to do graduate work at Clarkson has already inspired one former Plattsburgh student. **Dave Pletcher**, a 2002 CS graduate, returned to Plattsburgh State to do some additional coursework in 2005-2006, including a course that I taught during my last semester there. Halfway through my first semester at Clarkson, Dave showed up to visit the department. He enrolled the following semester and should finish the masters program in the spring. There is also a Plattsburgh State alum among the Math faculty here. **Kathleen Fowler** earned her undergraduate degree at PSU. She did her graduate work at North Carolina. When we first met, we had a lot of fun exchanging Bodenrader stories--always a good time.

Opportunity knocks...

The 11th annual Nebraska conference for undergraduate women in Mathematics

will take place in Lincoln Nebraska, January 30 – February 1, 2009. The deadline for applications is December 12, 2008. To find out more about this conference, look at <http://www.math.unl.edu/~ncuwm/11thAnnual/>

The Plattsburgh Putnam Seven...

The sixty-ninth annual William Lowell Putnam Mathematical Competition is right around the corner, and the Plattsburgh team -- yes, a Plattsburgh Math Team -- is ready to go.

The Putnam Competition, held every year since 1938, is an intercollegiate mathematics contest open to all undergraduate math students in the United States and Canada. Students compete for individual recognition; at the same time, each school is represented by a team, and the winning schools (which are usually Harvard, MIT, Berkeley, Princeton, and places like that) earn some pretty substantial prize money.

This year's Plattsburgh Putnam participants are **Michael Fitzsimmons, Shawn Gilbert, Lucas Tooker, Khoa Tran, Krystal Tremblay, Nick Warner, and Yeyao Xiao**. They have been warming up for the big event (on Saturday, December 6) by studying and solving problems from past Putnam competitions, meeting with coach **Greg Quenell** on Friday afternoons throughout October and November.

On the day of the competition, math students all over North America, including the Plattsburgh Seven, will sit for two three-hour sessions -- one in the morning and one in the afternoon -- during which they will do their best to solve the twelve problems set by this year's Putnam Committee.

What are the problems like? Team member Nick Warner described the practice problems -- problems from previous Putnam competitions -- as very difficult, only he didn't use exactly those words. Here's a sample problem, from the afternoon session of the 2001 contest:

Let a and b be real numbers in the interval $(0, \frac{1}{2})$, and let g be a continuous real-valued function such that $g(g(x)) = ag(x) + bx$ for all real x .

Prove that $g(x) = cx$ for some constant c .

Problems, problems, problems

Here are some problems to provide a diversion from your end-of-semester studying. Submit solutions (answers, along with explanations of how you got them) to Nicki Jarvis in the mathematics department office. The first correct solution to each problem will earn a prize for the solver.

1. Arnold, Beverly, Carl, Darlene, and Evan make up a very efficient gossip network, but each one of them tells the truth with probability only $1/3$. If Arnold makes a statement, and you later hear from Evan that Darlene told him that Carl told her that Beverly told him that Arnold was telling the truth, what is the probability that Arnold actually was telling the truth?
2. Sal the Smuggler's speedboat is four miles from a straight shoreline when it is spotted by Captain Cal, on a Coast Guard cutter that lies exactly half way between Sal's boat and the shore. Sal's boat can go three times as fast as Cal's cutter, so it's possible for Sal to follow a straight-line path to the shore that is outside the range where Cal could possibly intercept him. What is the length of the shortest such path?

(Professor Quenell is our Vital Sines problems editor.)

Closing Credits

Editor: Margaret Morrow

Thanks to the contributors to this issue!