

Augarithms



vol 20.3

Visit us on the web at Augsburg.edu/math/

October 11, 2006

Mathematics Colloquium Fall Lineup

Colloquia are typically held Wednesdays from 3:40—4:40 in Science Hall 108. Refreshments are always provided.

| | | |
|--------|----|---|
| Sep. | 13 | The Augsburg Mathematics Department presents itself. |
| Sep. | 27 | Huseyin Coskun, Augsburg College & School of Mathematics, University of Minnesota |
| Oct. → | 11 | Amelia Taylor, Colorado College ¹ |
| Oct. | 18 | Wendy Weber, Central College (Pella, Iowa) |
| Oct. | 25 | Matt Haines & Ken Kaminsky, Augsburg College |
| Nov. | 8 | TBA |
| Nov | 29 | Richard Jarvinen, Winona State University & NASA |

¹This week's colloquium...

From Fish to Polynomials

by Prof. Amelia Taylor, Colorado College

“The amount and types of data available to biologists is booming. In response, mathematicians, statisticians, and computer scientists are collaborating with biologists to develop novel techniques for data analysis. In this talk I will describe a problem from fish evolutionary genetics research and discuss how polynomial ring theory can be used to suggest solutions to a difficult problem.”



Amelia Taylor

Next week's colloquium...

Next week's speaker is **Dr. Wendy Weber**, of Central College in Pella, Iowa.

Professor Weber's interests include Convex and Discrete Geometry, Mathematical Preparation of Prospective Teachers — Gardening, reading, cross-stitching, and playing with her cats, Leo & Bella.



Wendy Weber

Augarithms

The bi-weekly newsletter of
the Department of Mathematics
at Augsburg College

Editor-in-chief.....Ken Kaminsky
<kaminsky@augsb.org>

Problem of the week...²

We received a correct calculus-based solution to the ‘water pistol’ problem of vol. 20.2 from **Michael Janas**. Michael got

$$100(1+\pi/3 - \sqrt{3}) \approx 31.51\dots$$

Here's this week's problem:

Find a ten digit integer, N , with the property that the one's digit of N is the number of 9's in N , the ten's digit is the number of 8's, and so on, with the leading digit being the number of 0's.

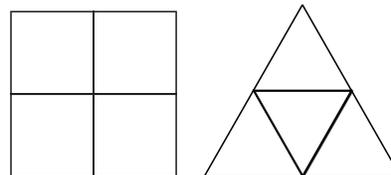
Submit your solution to the editor at kaminsky@augsb.org, slip them under his door at Science Hall 137E, or put it in the puzzles and problems box just outside of Su's office.

²reprinted with permission from Bradley University's ‘potw’ page <bradley.edu/~delgado/>

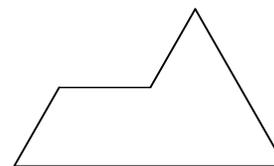
Puzzle of the week...

We received several correct solutions to the ‘5 x 5 checkerboard’ puzzle of vol. 20.2. The solvers were **Michael Janas, Rob Johnson, Philip Brown, and Evan Fuhs**. And here is this week's puzzle:

Both figures below are divided into four equal and identical parts so that each part has the same shape as the original figure (only smaller).



Now try to divide the figure below into four equal and identical parts, each with the same shape as the original figure (reversals allowed).



Submit your solution to the editor at kaminsky@augsb.org, slip them under his door at Science Hall 137E, or put it in the puzzles and problems box just outside of Su's office.

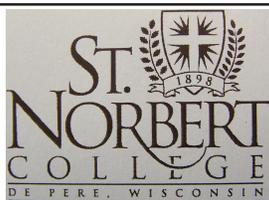
Announcing...

The Twenty-First Annual Pi Mu Epsilon Regional Undergraduate Math Conference at St Norbert College...

November 3—4, 2006

Featured Speaker: Underwood Dudley, Tallahassee, Florida

See Ken Kaminsky (Science Hall 137E) for details about registration, schedules, accommodations, etc.



Biostatistics Program of the University of Minnesota Twin Cities announces an Open House

Friday, October 20

Coffman Memorial Union
Mississippi Room—3rd Floor
10:00 a.m. to 2:00 p.m.

- Learn about:
 - curriculum
 - financial aid
 - hands-on research
 - career opportunities
- More information:
 - see Ken Kaminsky or
 - biostat.umn.edu/openhouse.html

Job opportunities...

Thrivent Financial announces that it is in the initial stages of the hiring process for actuarial students in Minneapolis. They are looking for:

- 2-3 actuarial interns for summer 2007
- 2-3 full-time, entry-level actuarial assistants starting summer 2007

The descriptions and applications are found at the following links:

https://thrivent.recruitmax.com/MAIN/careerportal/job_profile.cfm?szOrderID=916

https://thrivent.recruitmax.com/MAIN/careerportal/Job_Profile.cfm?szOrderID=917

Or go to <http://www.thrivent.com/careers/> and click on 'Search Corporate Job Openings'.

You can apply directly from the job description. The deadline for applications is December 1st.

For further information, talk to Ken Kaminsky, Science Hall

Augsburg Unbounded...

The next meeting of Augsburg's mathematics club, *Unbounded*, is slated for October 18 in Science Hall 108, following the colloquium.

Possible agenda item: Sudoku

Be on the lookout for further details.

Born on this day: Barnabé Brisson³



Barnabé Brisson

Born October 11, 1777 in Lyon, France, **Barnabé Brisson** studied at the Collège Oratorien de Juilly. In 1793 he entered the École des Ponts et Chaussées in Paris and, the following year, he began to study at the newly created École Centrale des Travaux Publics which had opened that year. In 1795, while Brisson was a student there, the École Centrale des Travaux Publics was renamed the École Polytechnique.

Brisson was a fellow student with Jean-Baptiste Biot, and was highly thought of by Gaspard Monge who was one of his teachers. He graduated in 1796 and then was admitted to the Corps des Ponts et Chaussées.

He specialised in the design and construction of ship canals; in particular he applied descriptive geometry to problems of canals. He became a civil engineer for the region of Doubs, in eastern France near the Swiss border. Between 1802 and 1809 he collaborated in the construction of the St Quentin Canal. This canal with a 5 km tunnel, opened in 1810. It linked the North Sea and the Scheldt and Lys systems with the English Channel via the Somme. It also linked with Paris and Le Havre via the Oise and the Seine.

Between 1809 and 1814 Brisson was employed extending dikes and canals in the l'Escaut region. These connect the rivers Somme, Oise and Escaut, connecting the region with the navigable waterways that link Paris and Flanders. In 1820 Brisson was appointed professor of stereometry and construction at the École des Ponts et Chaussées. In addition he was secretary of the Conseil Royal des Ponts et Chaussées from 1824.

Brisson married Monge's niece and his friend Biot became his brother-in-law. He went on to edit the fourth edition of Monge's *Géométrie descriptive* adding two new chapters.

His favourite topic was partial differential equations and two important papers he submitted to the Paris Academy applied functional calculus using a symbolic scheme to solve linear differential equations. These papers were praised by Cauchy for their elegance and importance and influenced him in developing methods of functional calculus. Brisson died September 25, 1828 in Nevers, France.

³Article by: *J J O'Connor* and *E F Robertson*—reprinted with permission