Augarithms

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
Oct.	18	Loren Larson, St. Olaf College
Oct.	25	Matt Haines & Ken Kaminsky, Augsburg College
Nov. →	8	Tracy Bibelnieks, Augsburg College[1]
Nov	29	Richard Jarvinen, Winona State University & NASA

[1]This week's speaker – Tracy Bibelnieks

Thinking about taking MAT 377 (and who isn't?)? That's Introduction to Operations Research? If you attended the last colloquium, you might be wondering what happens when Lowland Elves (below left) go shopping? Or are you curious as to how candidates in yesterday's election decided to spend campaign dollars? Then this colloquium is for you.

Tracy Bibelnieks

I'll give you an introduction to how businesses, industries and even political parties leverage operations research techniques. We'll start by introducing a linear program (LP), talk a bit about the solution techniques, and then explore how LP's are used by data analytics teams of various businesses and even the DFL party.

Lowland Elf

Augarithms

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

Editor-in-chief.......Ken Kaminsky
<kaminsky@augsburg.edu>

Problem of the week...[2]

We received correct answers (3 hrs, 16 min., 21.8181... sec.) and/or solutions to the problem of vol. 20.4 from **Michael Janas**, **Evan Fuhs**, **Noel Petit**, **Maggie Flint** (South High School), and an anonymous solver. Here is week's problem:

> A fly sits on the corner of a wooden cube. What is the shortest distance it must travel in order to reach the opposite corner of the cube?

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

[2]reprinted with permission from Bradley University's 'potw' page

Puzzle of the week...

We received correct answers (792 feet) and/ or solutions to the puzzle of vol. 20.4 from **Evan Fuhs**, **Noel Petit**, **Maggie Flint** (South High School) and **Michael Janas**. Here is this week's puzzle:

> Kristin wants to remodel her home. To save money, she decides to move a carpet from one hallway to another. The carpet currently fills a passage that is 3 x 12 feet. She wishes to cut the carpet into two sections that can be joined together to fit a long and narrow hallway that is 2 x 18 feet. What does her cut look like?

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

I Can't Recommend the Candidate too Highly

Robert J. Thornton is the author of *The Lexicon of Intentionally Ambiguous Recommendations t*o combat threats of lawsuits for negative letters. Here are some of his samples:

- To describe a candidate who is woefully inept: "I most enthusiastically recommend this candidate with no qualifications whatsoever."

- To describe a candidate who is not particularly industrious: "In my opinion, you will be very fortunate to get this person to work for you."

- To describe a disorganized candidate: "She works without direction."

- To describe a candidate who is not worth further consideration: "I would urge you to waste no time in making this candidate an offer of employment."

- To describe a candidate with lackluster credentials: "All in all, I cannot say enough good things about this candidate or recommend him too highly."

- To describe an ex-employee who had difficulty getting along with fellow workers: "I am pleased to say that this candidate is a former employee of mine."

ValuPak™
University
"Veni, Vidi, Conservavi

Position Announcement:
The ValuPak™ Chair in theTheory of Applications

ANNOUNCEMENT DATE: November 7, 2006

SALARY: Competitive with other lleading cut-rate universities

SURROUNDINGS: ValuPak™ University, the nation's leading cut-rate university, is located on 0.7 shady acres overlooking downtown Margo's Forehead, Minnesota. Founded in 1989 VPU offers undergraduate degrees in all traditional areas of study as well as such non-traditional areas a Base Jumping and Throat Singing.

VPU's new position is in the tenure stream. The successful candidate will have a Ph.D. in hand and have his or her own car.

Send vitæ and three letters of recommendation to Prof. F. Fogelfroe, chair VPU search committee, VPU , Fläskberg Pavillion, Margo's Forehead, MN 56765.

Leonhard Euler

Honoring Leonhard Euler's 300th birth-year, we mention some of the significant discoveries for which he is known.

Euler's formula (one of many): For any convex polyhedron, the number of vertices plus the number of faces is exactly two greater than the number of edges. In symbols, $V - E + F = 2$. The formula, discovered by Euler around 1750, was first proven by Legendre in 1794.

Leonhard Euler Short Biography[3]

Leonhard Euler, from Basel, Switzerland, was one of the most prolific mathematicians of all time. He was born to Margaret and Reverend Paul Euler on April 15, 1707. From the beginning, his father, who was once a mathematician himself, wanted his son to be in the ministry. Leonhard chose science over the ministry. He made many great advancements in the field of mathematics, publishing throughout his life over 866 books and articles pertaining to mathematics, theoretical physics, and engineering mechanics. It was once said that *"Euler calculated without apparent effort, as men breathe..."* Although he was set back by partial blindness in his 20's, and then almost complete blindness in his later life, he was still able to make some of the most important mathematical discoveries of his time.

Leonhard married in Russia on January 7, 1734. He married Katharina Gsell, the daughter of a Swiss painter. Together, they had thirteen children, only five of which survived infancy. Euler claimed that while holding a baby in his arms, and children playing around his feet, he made some of his best mathematical discoveries.

He was sent to a school in Basel, where he lived with his maternal grandmother. In 1720, at the age of 14, his father sent him to the University of Basel to prepare for the ministry, but get a general education first. He obtained a Master's Degree in philosophy three years later. He discovered that he was not content with the ministry, but liked mathematics better. He continued studying theology until his teacher, Johann Bernoulli, was able to convince Euler's father to let him study mathematics. Later, in 1727, he attended the Saint Petersburg Academy of Science. In 1730, Leonhard was appointed professor of physics, and three years later became the professor of mathematics. Leonhard joined the Berlin Academy of Science in 1741. In 1744, he became director of the academy's mathematics section.

Euler not only made advancements in mathematics, but also in astronomy, mechanics, optics, and acoustics. He produced just more written work on mathematics than anyone else. It was once said that he could write a new paper in about thirty minutes and his desk was always covered with his pending works. Over a period of about 25 years, Euler wrote over 380 articles on the following topics:

calculus of variations, calculation of planetary orbits, artillery and ballistics (extending the book by Robins), shipbuilding and navigation, motion of the moon, differential calculus

Leonhard Euler also wrote a very popular three-volume work called *Letters to a Princess of Germany* (1768-72).

[3]Reprinted and edited with permission from Prof. Keith Gaskin, Andrews University