Math & C.S. Colloquium

Wearable activity tracking devices such as **Fitbit** monitors have exploded in popularity in recent years, with over 100 million projected to be sold world-wide in 2016. Interest in personal health tracking is an exciting prospect; however, recent research suggests that these consumer-based activity trackers have limited measurement accuracy, especially for measuring calories burned. In this talk, **Dr. Alex Montoye**, Assistant Professor of IPHS, will briefly cover the limitations of consumer-based activity monitors and focus on efforts by exercise physiologists and engineers to develop activity tracking devices and analytic techniques capable of achieving higher measurement accuracy than what is currently possible.

"Can we do better than Fitbit?"

Presenter: Dr. Alex Montoye
Date: **Tuesday, November 15th**
Time: 4:00
Place: SAC 113
Refreshments at 3:50.

Nine Participate in MATH Challenge

On Saturday, November 5th, 75 teams from 26 different colleges & universities participated in the MATH Challenge, a team-oriented math competition sponsored by the Alma College De-partment of Math & C.S. Alma entered three teams in this year's competition. The participants were: **Luke Bent**, **Alexandra Bieri**, **Bennett DuBois**, **Eric Ferrar**, **Eva Hengeler**, **Cheyenne Kalfsbeek**, **Brian May**, **Jack Regan**, and **Mercedez Thill**. The results of the competition will not be known for several weeks. Last year, our top team placed *first* out of 76 teams.

Winter Term 2017 Registration Is Here

It might be helpful to know what upper-level courses are offered next term and when they'll be offered again.

		Next time offered
MTH 223	*Math Structures*	Winter 2018
MTH 280	*Financial Mathematics*	Winter 2019
MTH 411	*College Geometry*	Winter 2019
MTH 431	*Advanced Calculus*	Winter 2019
CSC 220	*Data Structures*	Winter 2018
CSC 310	*Computer Organization*	Winter 2019
CSC 430	*Theory of Computing*	Winter 2019

Math Courses in Spring 2017

There are two math courses offered in the upcoming Spring Term.

MTH 108 *Andean Mathematics–Peru*
  See Dr. Robert Molina for more info.

MTH 180 *Applied Computational Methods*
  See Dr. Morgan Fonley for more info.

Five Cognates for the Math Major

In addition to the 36 credits of mathematics every major must take, there are two required cognates: CSC 120 and a course, other than a mathematics course, approved by the Department, with a mathematics prerequisite numbered 113 or higher. Below are the approved cognates with prerequisites given in parentheses.

PHY 121 *Physics I* (MTH 113 or 121)

CHM 331 *Physical Chemistry* (MTH 122)

ECN 317 *Econometrics* (MTH 116)

ECN 318 *Mathematical Economics* (MTH 113 or 121)

BUS 309 *Finance* (MTH 116)

The Math Club

The Math Club meets **EVERY TUESDAY** at 9:00 pm in Dow 132. Please come.

Everyone is welcome!

Need Help in Precalc, Calc 1 or Calc 2?

Tutors are available to students in Precalc, Calc 1, and Calc 2 on the following days and times.
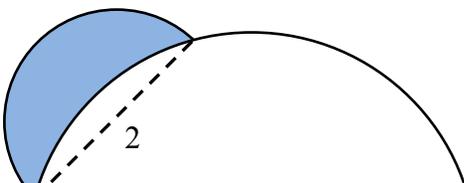
Precalc: Mon & Thur, 7:30 – 9 pm in SAC 213.

 Calc 1: Mon, Tue, & Thur, 7–9 pm in SAC 216.

 Calc 2: Tue & Thur, 7–8:30 pm in math bay area.

Solution to Previous Puzzle

A circle of diameter 2 intersects a circle of diameter 4 as shown below. Find the *exact area* of the shaded region, which is known as a **lune**.

Sophomore **Brian May** was the $2 prize winner with his answer of $\sqrt{3} - \frac{\rho}{6}$. He first computed the area of the semicircle of radius 1, which is $\frac{\rho}{2}$. He then found the area of the circular segment lying directly below the shaded region. That area is $\frac{2\rho}{3} - \sqrt{3}$. Therefore, the area of the shaded region is: $\frac{\rho}{2} - \left(\frac{2\rho}{3} - \sqrt{3} \right) = \sqrt{3} - \frac{\rho}{6}$.

Puzzle of the Bi-week

The distance between two goalposts on a football field is 360 feet (120 yards). A rope of length 360 feet is about to be tied tightly between the bottom of the two goalposts, when an extra foot of rope is added. How high can the rope be lifted in the middle of the field?

A prize of **$2.00** will be awarded to the 1st student who submits a correct solution to Prof. Sipka.

Student assistant:	Cheyenne Kalfsbeek
Faculty advisor:	Tim Sipka
Distribution:	Deb Smith

If you would like to submit an announcement or a short article, please send it via e-mail to Tim Sipka (sipka@alma.edu).