

# The Almagest

The bi-weekly newsletter of the Alma College Department of Mathematics and Computer Science. Your trusted source for news.

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September 24, 2018



## Next Colloquium – Tuesday, October 2<sup>nd</sup>

Perhaps the most asked question in the math and computer science community is “how am I going to use this?” This query plagues not only those who take one or two related courses, but those who study math, statistics, and computer science extensively. Potential applications of these studies include the rapidly growing fields of *Data Analytics* and *Data Science*. In this talk, **Ian Rhynard**, Senior Data Scientist at Nielsen and 2012 Alma College alum, will discuss a variety of practical examples of Data Analysis and Data Science he has encountered during his time at Nielsen.



## “Data Analytics and Data Science at the Nielsen Company”

Date: **Tuesday, October 2<sup>nd</sup>**

Time: 4:00

Place: SAC 113

**Refreshments at 3:50.**

## Remaining Math & C.S. Colloquia

Oct. 17 “Our Summer Internships at Auto-Owners”  
**Ben Elliot & Eric Ferrara**

Oct. 29: “Rook Placements” **Dr. Kenneth Barrese**

Nov. 15: “Decision Analysis & Cost-effectiveness Modeling” **Ms. Stacey Kowal (IQVIA)**

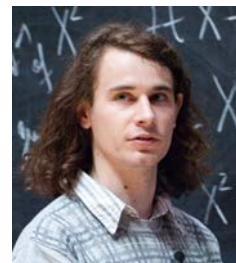
Nov. 26: “Curiosities and Counter-intuitive Notions in Mathematics” **Prof. Tim Sipka**

**All talks begin at 4:00 in SAC 113.**

## 2018 Fields Medal Recipients

Every four years the International Mathematical Union presents two, three, or four individuals with the prestigious Fields Medal. Recipients must have contributed greatly to the field and have done so before the age of 40. This prestigious award was first given in 1936 and has often been referred to as the Nobel Prize of mathematics.

The Fields Medal was most recently awarded on August 1, 2018 to four gentlemen. At 30 years old, **Dr. Peter Scholze** is one of the youngest recipients ever. A German professor at the University of Bonn, his work is in the field of algebraic geometry. Other mathematicians who earned the Fields Medal this year were **Dr. Caucher Birkar** of the University of Cambridge in England, **Dr. Alessio Figalli** of the Swiss Federal Institute of Technology, and **Dr. Akshay Venkatesh** of Stanford University.



Dr. Akshay Venkatesh

Dr. Birkar also specializes in the field of algebraic geometry. Meanwhile, Dr. Figalli does research within the broad areas of calculus of variations and partial differential equations. More specifically, he looks at optimal transportation and a handful of other ideas. Dr. Venkatesh interests lie in number theory,



Dr. Caucher Birkar

automorphic forms, and representation theory. Recently Dr. Venkatesh and a former graduate student found a new proof for a groundbreaking theorem used for determining wheth-



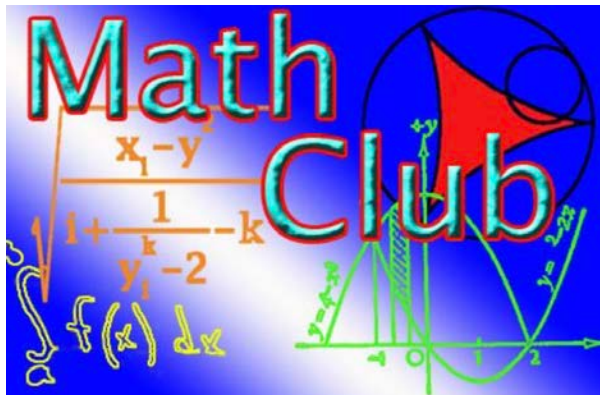
Dr. Alessio Figalli

er a system of equations has a finite number of solutions. This novel proof is hoped to lead to better understanding the solvability of equations. *Cheyenne Kalfsbeek*

### Math Club

The Math Club meets on Tuesday evenings from 9:00 to 9:30 pm in **Dow 132**.

*Everyone is welcome.*

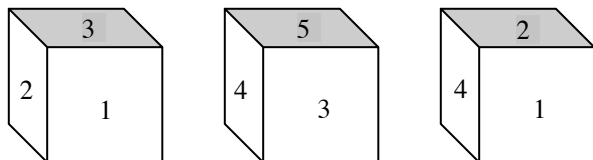


### Save the Date – November 3<sup>rd</sup>

The **MATH Challenge**, a team-oriented math competition sponsored by Alma College, will be held on **Saturday, November 3<sup>rd</sup>**. Don't be surprised if Prof. Sipka sends you an email asking you to consider participating.

### Solution to Previous Puzzle

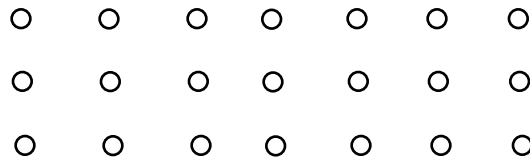
Three views of the *same* numbered cube are shown below. One number actually occurs twice on the cube. Also, the number that appears twice is *not on the bottom* of any of the views. What number appears twice? Please explain.



**Gannon Clifford** and **Andrew Bach** both submitted the *correct answer of 3* at almost the same moment in time, so each received a \$2 prize. **Kyle Sparks** and **Jackie Gage** (yes, our problem-solving secretary) also submitted correct answers.

### Puzzle of the Bi-week

Each of the 21 dots in the array below is to be colored with one of two colors. **Prove** that, no matter how the coloring is done, there will be four dots of the same color that form the vertices of a rectangle.



*This problem appeared on a previous MATH Challenge exam.*

A prize of **\$2.00** will be awarded to the 1<sup>st</sup> student who submits a nicely written proof to Prof. Sipka.

Student assistant: Cheyenne Kalfsbeek  
Faculty advisor: Tim Sipka  
Distribution: Jackie Gage SAC 224

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



## ALMA COLLEGE