

Vol. XXV, No. 1 September, 2011

#### **KME Officer Studies in China**

Marcus Carter, a senior chemistry major and mathematics minor at Frostburg State University, completed a ten-week, paid summer program at Peking University in Beijing China through the University of Michigan's international Research Experience for Undergraduates (REU) program. program, which is federal funded by the National Science Foundation (NSF), promotes student engagement in current experimental endeavors and lasting network connections between students and faculty, while exposing them to the culture of a host country. In the first two weeks of the program, students visited important tourist attractions and were acclimated to city of Beijing; the participants were introduced to the university campus and city transportation, and taught simplified courses of useful Chinese language to maneuver about throughout the country. Said Mr. Carter, "Overall, the program provides an invaluable and unique research experience that can never be forgotten; the REU affords undergraduates the ability to increase empirical research skills while broadening their perspectives."

# Seminar:

## Matrix Algebra Using Mathematica

On Wednesday, October 5, Dr. Hegde will conduct a seminar at 4:00 PM in Tawes Hall 108 on the powerful mathematical/calculation software *Mathematica*. He will show how to create matrices/vectors, display them, compute some basic matrix functions, reduce a matrix to its RREF/REF, and solve a system of linear equations. If there is enough interest, the professor will present more advanced work in subsequent meetings.

#### **New Problem**

Write a ten-digit number whose first digit tells the number of 0s in that number, the second digit tells the number of 1s in the number, . . ., and the tenth digit tells the number of 9s in the number.

#### **KME Corner**

At the September meeting of KME, President Kevin Loftus gave an interesting presentation on a mathematical treatment of juggling, along with a demonstration. Other officers are Vice-President Justin Good, Secretary Jesse Otto, and Treasurer Marcus Carter. Drs. Hughes and Barnet continue as faculty advisors. The next meeting will occur in October. For more information, contact any of the people listed or the KME bulletin board.

## "Meet and Greet" This Wednesday

This year's "Meet and Greet" will be held on Wednesday, September 28<sup>th</sup>, from 5 until 8 p.m. in the Osborne Center (immediately below the campus police building). Any student with an interest in mathematics is invited to come for food, fun, and fellowship. In recent years, the event has been very well attended and successful (and the food delicious).

### **Majors Fair**

FSU's Majors Fair is scheduled for October 12 from 11:00 until 3:00 in the Lane Center ARMAH. Spend some time at the MATH table.

# Commemorative Calculus: Arranging Names on the 9/11 Memorial

At first glance – and even after deep scrutiny – the names on a new memorial to those killed on September 11, 2001, seem randomly arrayed. The names are not arranged alphabetically nor, for the most part, are they presented in labeled groups. But, the memorial's layout is anything but random. The 2983 names are strung together in a way that reflects thousands of interpersonal relationships forged before, and, in at least one case, during the attacks.

The number of interlocking adjacency requests, both simple and complex, meant that laying out the names by hand would be nearly impossible. So the planners enlisted the help of an algorithm built by media design firm Local Projects and New York City-based software artist Jer Thorp. The algorithm works in two stages. The first algorithm builds clusters of names from the adjacency requests, resulting in a pile of really irregularly shaped puzzle pieces, some with over 70 names. A second, space-filling algorithm takes those puzzle pieces and fits them into place within the confines of the design of the 76 bronze panels enclosing each of two memorial pools.

The memorial – and the online guide that helps visitors find their way through it – freezes into place the events of that day a decade ago. In its overarching structure, the arrangement of names preserves the order behind the victims' lives – their work, their friends, their families. At the same time, the seeming disorder in the arrangement preserves the chaos and randomness behind their deaths.

# **Quotable Quote**

"Mathematics is distinguished by a particular privilege, that is, in the course of ages, it may always advance and can never recede."

~Edward Gibbon