## Math Colloquium - November 17th

The need/demand for individuals who understand big data sets, network storage and retrieval, and how to manage all the points in between has created one of the most 'in demand' segments in the information and communication technology industry. **Dr. Stephan Jones**, director of the Center for Information & Communication Sciences at Ball State University, will speak briefly on the graduate program at Ball State, discuss career opportunities for math and computer science majors, and provide a few case studies of Alma College graduates who have gone on to extremely successful careers after completing the program.

*Opportunities in Network Engineering for Math & Computer Science Majors*

Presenter:   **Dr. Stephan Jones**
Date:   **Monday, November 17th**
Time:   **4:00**
Place:   **SAC 113**

*Refreshments at 3:50.*

## Need Help?

Tutors are available in **Dow L2** to help you with the following courses at the times listed.

| Course | Time |
|---|---|
| MTH 101 | Mon. & Thur. 8:00 – 10:00 pm |
| MTH 112 | |
| MTH 121 | Monday through Thursday |
| MTH 122 | 7:00 – 10:00 pm |
| MTH 116 | Tues. & Thur. 8:00 – 10:00 pm |

## Your Vote Counts–But Where Does it Count

With Election Day a week behind us, the work of Duke University senior Christy Vaughn and math professor Jonathan Mattingly examining the congressional districts in North Carolina, may be relevant for other states as well.

Using the results of the 2012 election, Vaughn and Mattingly examined the influence of district lines on election results—using mathematical analysis to justify a call to redraw district lines for the 2016 election. Examining voting behavior for the state and the final election results, the two found that while 51% of the two-party vote was for Democratic candidates, only four of the thirteen congressional seats in North Carolina were awarded to Democrats—a measly 30%!

How could the election results differ so greatly from the votes cast? The answer: severely gerrymandered districts—namely the 12th and 4th congressional districts. Gerrymandering, the drawing of convoluted and sometimes illogical district lines to skew election results, has long been used to redistribute voters in favor of one political party or another, but Vaughn and Mattingly have enlisted the help of mathematical analysis to prove just how large of an impact gerrymandering can have on election results. Running 100 different election scenarios with different district lines drawn with the legal requirements met and the same votes as the 2012 election, Vaughn and Mattingly never once obtained the 9-4 split of seats between Republican and Democratic candidates that the gerrymandered districts resulted in.
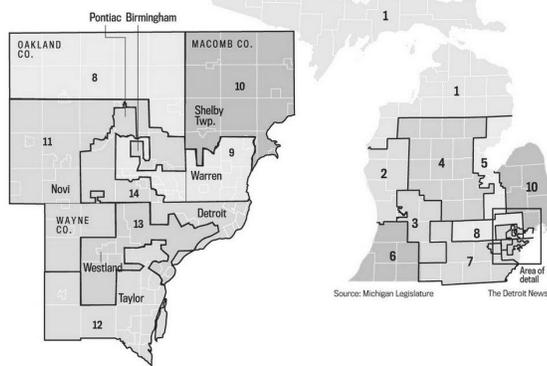
So what does this mean for other states? Many states contain gerrymandered districts. Michigan's district lines near Detroit, for instance, are often cited as being extremely gerrymandered. An anal-

ysis similar to the one run by Vaughn and Mattingly on Michigan election results could support redrawing of district lines in Michigan as well—helping to ensure that your vote counts.
*Katie Krauss*


Final congressional districts
Source: Michigan Legislature    The Detroit News

## The Math Club

The next meeting of the Math Club will be **Wednesday, Nov. 12th** at 10 pm in DOW 132.

*Everyone is invited.*

## Puzzles of the Bi-week

No one submitted a solution to the last problem, so we'll offer it again along with a second problem.

### Problem 1

A circle of radius 4 was accidentally dropped into the parabola $y = 5x^2$ and fell until it came to rest. Find the *coordinates of the center* of this circle.
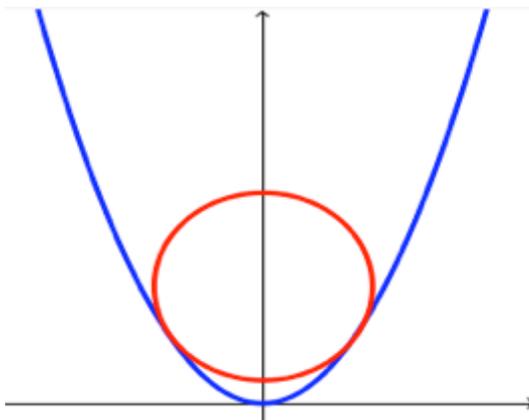


The first student to submit a correct solution to Problem 1 will receive $3.

### Problem 2

Which of the numbers are in the wrong order?

| 2 | 7 | 9 | 3 | 8 | 4 |
|---|---|---|---|---|---|
| 3 | 6 | 4 | 2 | 6 | 9 |
| 9 | 8 | 6 | 7 | 7 | 3 |
| 4 | 4 | 8 | 6 | 2 | 2 |
| 8 | 9 | 7 | 8 | 3 | 7 |
| 6 | 3 | 2 | 4 | 9 | 6 |

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

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