

Math Club Meeting Minutes

Prepared by Elyssa Okkelberg

2008-2009

Meeting #1

September 8th, 2008

We had a great first meeting with over 50 attendees, which I think is a record. The officers introduced themselves. This semester we have a lot of great things to look forward to. We will have a lot of speakers like IBM, McNair Scholars Program, and Dr. Sellers. The officers are looking forward to having a great year.

Check us out online at <http://www.clubs.psu.edu/up/math/index.htm>.

Meeting #2

September 15th, 2008

IBM's MISA department sent some representatives to the Math Club. Also we had some business students join us to sit in on the lecture. Christine and Paul were the representatives sent. Christine was a recent Smeal graduate. Feel free to follow up with her by emailing her at Constantino@us.ibm.com.

Next week we will have representatives from Teach for America and the McNair Scholars Program.

Meeting #3

September 21st, 2008

We were fortunate enough to have representatives from the McNair Scholars Program and Teach for America. You can reach the McNair Scholars program by contacting our president, Rob Vary, at rgv106@psu.edu or Teresa Tassotti at txt6@psu.edu. Feel free to look up more information online at <http://www.gradsch.psu.edu/diversity/mcnair.html>.

If you were interested in Teach For America, which I have heard great things about from a sister of a Math Club Member, you can also attend another Teach For America session **Tuesday, September 9, at 7:00 p.m. in 162 Willard**, and find out how to apply. I personally know Anna Han and she is a great girl and a great resource. Feel free to contact her at anna@psu.edu. You can also visit <http://www.teachforamerica.org/> for more information.

Next week we will have Nate Brown come speak ☺ <http://www.math.psu.edu/nbrown/>

Meeting #4

September 29th, 2008

The math department generously supplied Nate Brown to talk about what we should be learning about mathematics. Feel free again to explore his website at <http://www.math.psu.edu/nbrown/> and then contact him at nbrown@math.psu.edu. He is also a huge of being silly by offering a poem session about math.

Derivatives on my mind
The time I can't find
To slow and rewind
These problems are a grind

Moving forward or movin' back
Homework at 3am, time to hit the sack
The answers I just seem to lack.
To love Calc? One must be on crack

I now dread the time 10:10
I hit snooze I don't wanna go again
I meditate to find my zen
Calculus must end, but when?

Everyday I try to fight the dawn
We're controlled by the math god like a pawn
I'd rather be in history studying Kublai Khan
Finish math this semester, then we can move on!

Next week we will have Dr. Brownson from the College of Earth and Mineral Sciences giving a talk about Solar Decathlon. Happy Rosh Hashanah!

Meeting #5

October 6th, 2008

The College of Earth and Mineral Sciences supplied Jeffrey Brownson from the Department of Energy and Mineral Engineering. You can visit his website here <http://www.eme.psu.edu/Faculty/brownson.html>. He is a major supporter of many initiatives including wind power, solar power and Penn State's Solar Decathlon team. I strongly suggest that you visit the website here http://solar.psu.edu/2009/penn_state_sd2009/Welcome.html, I am a part of the

Materials Team and would love to tell you more information about how you can contribute. I can also forward your questions to one of the team leaders that can answer them.

Next week we will have Andrew Belmonte from the Math Department and you can visit his website at <http://www.math.psu.edu/belmonte/>.

Meeting #6

October 13th, 2008

Andrew Belmonte from the Math Department came to speak to us today about the mathematics of breaking spaghetti. It was a very interesting lecture. I know that he was on the list looking for WISER (Women in Science and Engineering Research) / MURE (Minority Undergraduate Laboratory Research Experience) students, if you applied to those programs.

Update on IBM: They are listed as the 9th Best Place for internships in the nation, just something to think about http://bwnt.businessweek.com/interactive_reports/best_internships_07/

Next Week we will be watching a movie about Math and M. C. Escher.

Meeting #7

October 20th, 2008

In place of a speaker this week, we watched a mathematical based art history movie ☺ The 50-minute documentary entitled *Achieving the Unachievable*.

What follows is the synopsis from IMDB. "M.C. Escher is among the most intriguing of artists. In 1956 he challenged the laws of perspective with his graphic Print Gallery, and found himself trapped by an impossible barrier. His uncompleted master-piece quickly became the most puzzling enigma of modern art, for both artists and scientists. Half a century later, mathematician Hendrik Lenstra took everyone by surprise by drawing a fantastic bridge between the intuition of the artist and his own, and completed Escher's work mathematically. This story was made accessible to all audience and most magically presented in this 52-minute film awarded for best visual effects at the 3rd Bangkok Science Film Festival in 2007."

M. C. Escher is my favorite M.C.

~Weird AI

Meeting #8

October 27th, 2008

Sergei Tabachnikov gave a talk about the MASS Program & An Interesting Representation of the Taylor Series Expansion. You can do a MASS program in the fall, and as a part of being a Mathematics Honors Student, you may be required to take one of the MASS classes anyway. Also, they have a similar program during the summer which seems to have class from 11am to 1pm, and provides a \$2500 stipend plus room, board and \$500 for traveling.

<http://www.math.psu.edu/mass/reu/2008/>

<http://www.math.psu.edu/mass/>

Meeting #9

November 3rd, 2008

From the chemistry department we had Alan Benesi give a speech about Linear Algebra and Quantum Mechanics in NMR. NMR is a technique used to identify compositions. You can read more about Professor Benesi at <http://www.chem.psu.edu/faculty/f6u> or contact him through e-mail at alan@chem.psu.edu. He also teaches a few classes on NMR, which some of the officers have taken if you were interested in asking further questions.

Meeting #10

November 10th, 2008

James Sellers, the Math Club advisor came to speak to us about revisiting What Euler and the Bernoullis Knew About Convergent Infinite Series.

Meeting #11

November 17th, 2008

We had a short meeting and then headed over to Thomas Building to hear the famous Terrance Tao speak. Quite a few Math Club members were present in the standing room only presentation about prime numbers.

Meeting #12

December 1st, 2008

We watched the first half of the movie 21.

Meeting #13

December 8th, 2008

We watched the second half of the movie 21. We had a great semester and we look forward to seeing everyone back in the Spring!

Meeting #14

January 26th, 2009

Welcome back meeting! Decided some preliminary ideas for shirts for this year

Meeting #14

February 2nd, 2009

We decided for shirts that we would have "Penn State Math Club" on the front of the shirts, and then about five pick-up lines to be voted on at the next meeting. The color of the shirts are navy blue and the lettering will be white. Please join the facebook group and then discuss t-shirts...

Meeting #15

February 9th, 2009

We are had Gary Mullen talk about My Candidate for the Next Fermat Problem. He will present a number of easily understood open problems in math and then explain his problem, also an easily understood one.

Meeting #16

February 16th, 2009

We are having John Roe come give a talk entitled "The Most Interesting Dimension." At least on the scale of classical physics, we inhabit a four dimensional world (three dimensions of space and one of

time). I'm going to explain why it is that a four dimensional world is the most interesting possible world for a topologist. Four dimensions give just enough room for some interesting geometry to get "wound up", but in any higher dimension there is so much room that it can get "unwound" again.

Meeting #17

February 23rd, 2009

We had Chuck Anderson come with the Geo Wall. This will definitely be a meeting to come to. I've heard such great things about the Geo Wall.

We'll also be announcing the pick-ups lines on the back on the shirts! There were five clear winners!

Meeting #18

March 2nd, 2009

We had Arkady Tempelman come speak to us about the Strong Law of Large Numbers. I was away on an interview, but I heard it was a great speech. Have a great Spring Break, everyone!

Meeting #19

March 16th, 2009

Rose Torielli was supposed to come speak to us about Using Google Search Trends and Advanced Statistical Process Control to Identify Flu Outbreaks. You can contact her at [rmt198\(at\)psu.edu](mailto:rmt198(at)psu.edu). Ms. Torielli teaches Industrial Engineering 424: Engineering Statistics, which is a pretty commonly required class for engineering majors. Unfortunately, she was too ill to show up. We hope you feel better.

We played an icebreaker game instead 😊

Meeting #20

March 22nd, 2009

Robert Foote will come talk about Planimeters and the Isoperimetric Inequality.

A planimeter is a simple mechanical instrument used to calculate the area of a region in the plane by tracing around its boundary. I will show how to use two planimeters (one with no moving parts!), and explain why they work. Then the ideas involved will be used to give a simple proof of the isoperimetric inequality,

$$L^2 \geq 4\pi A,$$

where A is the area of the region and L is the length of its boundary. I will have some planimeters available for those who want to try one. For pictures and additional information on planimeters, see <http://persweb.wabash.edu/facstaff/footer/>.

Meeting #21

March 29th, 2009

2008-2009 Board

President	Rob Vary	vary@math.psu.edu
Vice President	Aric Butler	aab5086@psu.edu
Secretary	Elly Okkelberg	eio5013@psu.edu
Treasurer	Sasha Slipak	shs5026@psu.edu
Webmaster	BJ Austin	wra5001@psu.edu
Club Advisor	Dr. James Sellers	sellersj@math.psu.edu

2009-2010 Board

President	Andrew Goodman	atg5026@psu.edu
Vice President	Sasha Slipak	shs5026@psu.edu
Secretary	Elly Okkelberg	eio5013@psu.edu
Treasurer	Rob Immendorf	rei105@psu.edu
Webmaster	BJ Austin	wra5001@psu.edu
Club Advisor	Dr. James Sellers	sellersj@math.psu.edu

Meeting #22

April 6th, 2009

We watched a documentary about fractals. Fractals are odd-looking shapes you may never have heard of, but they're everywhere around you—the jagged repeating forms called fractals. If you know what to look for, you can find them in the clouds, in mountains, even inside the human body.

<http://www.ritholtz.com/blog/2008/11/fractals-hunting-the-hidden-dimension/>

Meeting #23

April 13th, 2009

We are having Tim Regula come and speak to us about The Asymptoticians -- using approximate mathematical models to understand the world.

Abstract: In the age of the microchip, we constantly rely on computer software to perform our calculations and help us understand practical problems. However, computer programs seldom help us "understand" the problems we are studying. One field of mathematics that is falling out of our curricula our "asymptotic methods". Asymptotic methods are calculation tricks that we can use to get approximate answers to hard questions where there is a variable that is very large or very small. While asymptotic methods are used everywhere in mathematics research, they are also hugely useful in dealing with every-day life as well. In this talk, I'll present some simple examples of asymptotic mathematics, and discuss how asymptotic ideas play a key role in science and human thought.

Meeting #24

April 20th, 2009

James Sellers came and spoke to us about Graphical Partitions. Our current and our president-elect both worked in Dr. Sellers lab, so if you were so moved, he may be a great resource for finding research. From Dr. Seller's abstract, he tried to combine some elementary material from the theory of partitions (combinatorics) with material on graph theory. A number of results on the degree sequences of various types of graphs will be discussed, and some of these will be proven in elementary ways. Possibilities for future research will also be shared. The talk will be accessible to all students. No background in combinatorics or graph theory is required. The only prerequisite is a desire to see some interesting mathematics.

Meeting #25

April 27th, 2009

Proof <3

The daughter of a brilliant but mentally disturbed mathematician, recently deceased, tries to come to grips with her possible inheritance: his insanity. Complicating matters are one of her father's ex-students who wants to search through his papers and her estranged sister who shows up to help settle his affairs.

<http://www.imdb.com/title/tt0377107/>

WebSite : <http://www.clubs.psu.edu/up/math/index.htm>

Facebook :

<http://www.facebook.com/home.php#/group.php?sid=8e55a5523243c2ab83cfebad1d7dbdc4&gid=2353366629>

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l-math-club-unsubscribe-request@lists.psu.edu.

No subject or message text is necessary.

Or poke around here if you wish to remove yourself from more than one listserve:

<http://lists.psu.edu/cgi-bin/wa?REPORT&z=3>