



MATHEMATICS FACULTY 2011

# PSU Mathematics

## From the Department,

by Dr. Tim Flood

We are very excited for this debut edition of our departmental newsletter. As you can see, we have all been very active and are proud of the accomplishments of our students. Dr. Leah Childers has agreed to be our newsletter editor and has provided us this wonderful avenue to help stay in contact with all of our alumni and friends.

As you may notice, there have been some changes within the department. Dr. McGrath and Dr. Davis have both retired in the last few years and are active in a variety of community activities and in their roles as "Grandpa". We are excited by the new faculty members we were able to hire to fill their positions. Dr. Leah Childers and Dr. Jeremy Wade have been great additions to the department. You can read more about them on page 3.

Our other retired faculty members are still all active in the community as well. Dr. Kriegsman still regularly attends Kiwanis and volunteers at Wesley House. (See the article on page 4 for more about Dr. Kriegsman.) Dr. Forest Coltharp is an active member of Kiwanis and other community activities as well. Dr. Hight and Dr. Thomas both continue to be active and drop by the department to say "Hi" on occasion. Mr.

Sperry still stops by to help with Math Relays every spring. There have been other changes in several of the faculty roles within the Department. For the past 3 years, I have been chairing the Physics Department in addition to my role as chair of the Math Department. For several years, Dr. Winters has been the Assistant Dean of the College of Arts and Science while continuing to teach courses in the department. Dr. Winters spent one year as the chair of the Chemistry Department.

As you can read, our students have been very active, both on campus and off campus. They have attended a variety of conferences and activities that have helped to broaden their understanding of mathematics. Our KME Chapter hosts monthly lunch meetings with pizza and continue to have an annual Christmas party and year-end Ice-cream social hosted by faculty members.

The department has experienced slow but continual growth over the recent years. We are currently averaging about 80 undergraduate and 15 graduate students in the department. We feel blessed in the department to have such a rich history to build on and a bright future ahead of us. ■

### HIGHLIGHTS



#### Math Relays

PSU hosted talented high school students at the annual Pittsburg State Math Relays. Students checked results as scores were posted.



#### Pi Day!

Math major Candice Ogden and Chelsea Welch celebrate Pi-Day (March 14) by watching the "Great Pi/e debate" and attending a department colloquium given by Dr. Liu, entitled "Can pi be Three?"

## KSMAA conference

The MAA Kansas Sectional meeting was held at Baker University on March 4<sup>th</sup>-5<sup>th</sup> 2011. Highlights of the conference included the keynote address by David Bressoud, President of the MAA, and talks given by faculty, graduate students, and undergraduate students. The mathematics department at Pittsburg State University was well represented and members gave 8 talks listed below.

Faculty Presentations included:

- Karla Childs, Bobby Winters, & Leah Childers, "*The Math Task Force at Pittsburg State University*"
- Ananda Jayawardhana, "*Testing for Normality in Undergraduate Statistics Classes*"
- Cynthia Woodburn, "*Fourier Meets the Pharaohs*"

Graduate Student Presentations included:

- Benjamin Butler, "*The Semiring of  $n$  by  $n$  Lohman Matrices*"
- Holden Kraus, "*Domo Arigato, Mr. Roboto! 'An Introduction to the Computationally Algebraic Solutions Used in Robotics'*"

Undergraduate Student Presentations included:

- Chelsea Johnson, "*Calculus, What is it For? Life after Calculus I, II, and III.*"
- Jae Min Lee, "*Application of Linear Algebra to Three-Dimensional Computer Graphics*"
- Vanessa Peach, "*Outstanding Mathematics in Ancient Greece*" ■



Members of the PSU mathematics department at the Kansas MAA Meeting. Attending were 7 students and 7 faculty!



Nathaniel Smith and Dr. Wade discussing wavelets.

## Grad Student uses Wavelets to study Gamma-rays

by Dr. Jeremy Wade

Nathaniel Smith, a graduate student in both the physics and mathematics departments, is using advanced mathematical techniques to analyze data and gain insights into astronomical events, such as exploded stars and distant active galaxies. Working with Dr. Alex Konopelko in the physics department and Dr. Jeremy Wade in the mathematics department, Smith is using wavelets to study high-energy particles originating from cosmic events many light-years away.

Smith is studying data obtained at the VERITAS (Very Energetic Radiation Imaging Telescopic Array System) observatory in southern Arizona. VERITAS records observations of particle showers resulting from high-energy particles interacting with

the earth's atmosphere. Upon entering the atmosphere, these high-energy particles create a shower of other particles, which are then recorded by the telescopes at VERITAS.

Smith is using wavelet decomposition to attempt to classify these showers according to the particle, which caused them: gamma-ray particles or protons. Wavelet decomposition allows him to remove noise from the data, and extract details, which may allow him to determine how the shower was generated. If his project is successful, he will obtain an algorithm for classifying this data that can be used by other physicists studying gamma-ray collisions in the earth's atmosphere. ■



## NEW FACULTY

**Dr. Jeremy Wade**

Dr. Wade joined the PSU math department in Fall 2009. He earned his PhD from the University of Oregon. His interests include Approximation Theory, Orthogonal Polynomials and Numerical Analysis.

**Dr. Leah Childers**

Dr. Childers joined the PSU math department in Fall 2010. She earned her PhD from Louisiana State University. Her interests include Geometric Group Theory, Topology, and Geometry.

## GET INVOLVED

## WANT TO HELP STUDENTS ATTEND CONFERENCES?

Contact Dr. Tim Flood ([tflood@pittstate.edu](mailto:tflood@pittstate.edu)) for information about supporting student travel.



Students at KME National Convention.

## Students attend KME, NCUWM, MAKO Conferences

The roles are finally reversed. For years students have sat and listened to their professors give talks, now there are national conferences highlighting student talks.

**Kappa Mu Epsilon**

The Kappa Mu Epsilon (KME) National Convention was held at Harris Stowe State University in St. Louis Missouri on April 14-16<sup>th</sup>. Undergraduates Jessica Booth, Aisha Ford, Jae Min Lee, Lissa Mentzer, and Vanessa Peach, graduate student Holden Kraus and faculty members Dr. Leah Childers and Dr. Cynthia Woodburn attended the conference.

Students talks were the star of the program including a talk by PSU undergraduate Jae Min Lee "Applications of Linear Algebra to Three Dimensional Computer Graphics." Students also visited the Arch and had ice cream at the famous Ted Drewes!!!

**NCUWM**

The Nebraska Conference for Undergraduate Women in Mathematics (NCUWM) was held January 28-30<sup>th</sup> at the University of Nebraska. Undergraduates Ashley Barnes, Jean Coltharp, Chelsea Johnson, Reine Loflin, Candice Ogden, and

Rachael Osborn attended with Dr. Leah Childers.

NCUWM was an opportunity for students to meet other women who shared their interest in the mathematical sciences, and for those who had already done research were given an opportunity to present their results. Conference participants also had a chance to learn about life in graduate school from the perspective of current women graduate students representing math departments from across the country.



Students at NCUWM.

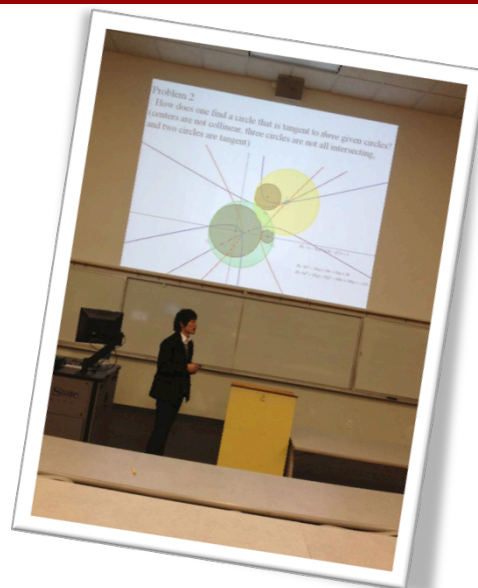
## MAKO

Pittsburg State University represented Kansas at the Missouri Arkansas Kansas Oklahoma (MAKO) Undergraduate Research Conference held at Missouri State University on November 12. PSU



was proud to be the first Kansas school represented at the conference. Note that an Oklahoma representative is still needed.

Undergraduates Lara Ismert and Jae Min Lee attended with Dr. Leah Childers. Ismert gave a presentation titled "Rusty Compass Constructions" outlining which numbers were constructible if a compass was "rusty" to a fixed opening. Lee presented "Using Tangent Circles to Find a Practical Approach to an Ellipse and Hyperbola," where he showed that given two circles the locus of the centers of circles tangent to the two given circles formed either an ellipse or a hyperbola. ■



*Students presenting at MAKO Undergraduate Research Conference.*

## Kriegsman Honored With PSU Ring

Dr. Helen Kriegsman, former chair of the PSU Math department, was honored at the Taste of Pittsburg Friday, October 14, 2011 with an official PSU ring. When Dr. Hazel Coltharp told Dr. Kriegsman how proud the department was of her, she remarked "during the intro (until the Josten's rep mentioned department

chair), I thought they were talking about Judith Shaw!"

Dr. Kriegsman joined the PSU faculty in 1947. In 1967 she was named chairperson of the department, the first and only woman to hold that position at PSU. She served the university in that role until her retirement in 1989. Dr. Kriegsman now lives at Via Christi Village. ■



*Dr. Helen Kriegsman being honored at the Taste of Pittsburg.*





# Faculty Updates

## Dr. Leah Childers

- Has been developing lots of new courses including: Discrete Structures, Basic Concepts of Geometry, and Advanced Geometry.
- Attended a conference on Inquiry Based Learning in Washington DC.
- Got her first paper accepted for publication! And has a second under revision.
- Has greatly enjoyed being a part of the PSU family and getting to know Pittsburg! My husband, Chris, and I have enjoyed being back in Kansas!
- And put together the department's first newsletter—feel free to email suggestions if you have them!

## Dr. Karla Childs

- was promoted to Associate Professor.
- chaired the Math Task Force and reported to the Provost about existing requirements and current needs in mathematics as well as assessment of student learning in general education mathematics.
- serving in a new PSU MAC position: Math Assessment Coordinator.
- Trying to get used to an empty nest: my older son Tyler works in music management in Los Angeles, CA and my younger son Andrew is a film major at KU.

## Dr. Hazel Coltharp

- My first sabbatical was spring of 2010, so just trying to keep up with all of the things I learned about technology in the math classroom and still feel behind a lot of my students.
- We're hosting the Fall, 2012 KATM (Kansas Association of Teachers of Mathematics) state conference at PSU on Friday, October 26 (katm.org). Dr. Childs and I are coordinating the program, so be watching, so we can have our graduates come back to PRESENT &/or attend!
- Trying to finish up my year as Faculty Senate President.
- Kids are growing - Jean was 1 when I returned to PSU, and Benjamin was born my 3rd year; they are now 19 & 15! Jean is a BSEd major (more thanks to her high school math teacher, who is a former student, than to my arm-twisting) who will be student teaching (YIKES!) next spring and will start on her master's here Fall, 2013. Benjamin is a freshman at Carl

Junction High School playing drums and tennis and wondering why he has to "prove" it in Geometry - since Jean is in Basic Concepts of Geometry from Dr. Childers, it makes for interesting brother-sister conversations!

- My husband, Glenn, has recently stepped down from Dean of the School of Education at MSSU to accept the Vice Presidency of Academic Affairs at Crowder College in Neosho, MO.
- Our BSEd Math students continue to get jobs fairly easily, and we had a record number of 14 (including a middle level math minor) this past fall - look out schools, here come the Gorilla Math Teachers!
- Don't forget, if you were a BSEd major be sure to join "Gorilla Math Teachers" on Facebook.

## Dr. Elwyn Davis

- gave an invited address at Northeastern State Univ., Tahlequah, OK on "Adventures on the Sphere" on Jan. 18, 2012

## Dr. Tim Flood

- presented "The Kansas Section: Were We First?" at the MAA special session Writing the History of the MAA in Boston

## Dr. Ananda Jayawardhana

- I was promoted to full professor.
- I am currently the Chapter Representative of the Kansas-Western Missouri Chapter of the American Statistical Association 2010-2012 term. I have served a total of 8 years, 3 years as the secretary/treasurer, one year as the president elect, one year as the president, and 3 years as the chapter rep.
- I serve on the statewide Michael Tilford Conference on Diversity and Multiculturalism planning committee. This is the 6th year of my service. <http://www.dce.k-state.edu/conf/tilford/committee>
- Chair of the newly formed Mu Sigma Rho statistics honor society chapter advisory committee of the Kansas-Western Missouri area. I actually started the chapter. Since any individual university does not have the number of students to start a chapter, I started a chapter affiliated with the Kansas-Western Missouri Chapter of the American Statistical Association. First batch of students will be inducted in May 2012.

<http://community.amstat.org/KWMChapter/Home/>

- I have been the secretary/ treasurer of the Council of Chapters Governing Board (COGCB) of the American Statistical Association since January of 2007. I am also running for the chair of the COGCB this year. If elected it is a 3 year term (2013-2015). <http://www.amstat.org/chapters/cocgb.cfm>
- Associate Editor: American Statistical Association, Statistics Education Web.
- Webinar coordinator and executive committee member: Section on Quality and Productivity, American Statistical Association <http://www.amstat-online.org/sections/qp/officers.html>

## Dr. Jeremy Wade

- submitted a paper "Cesàro summability of fourier orthogonal expansions on the cylinder" for publication
- working with Masters student Nathaniel Smith on analyzing gamma ray data from VERITAS project using wavelets
- hiked up my second Colorado fourteener, Mt. Elbert

## Dr. Bobby Winters

- was promoted to University Professor.
- Regularly posts about his mathematical thoughts at [redneckmath.blogspot.com](http://redneckmath.blogspot.com)

## Dr. Cynthia Woodburn

- went on the MAA Study trip to Guatemala and Honduras in the summer to learn about Mayan math and calendars
- taught a course in Asuncion for the PSU in Paraguay program in August
- out of over 2700 talks at JMM2012, my talk was one that appeared in "Selected Highlights of the 2012 Joint Mathematics Meetings" on the AMS webpage
- participating in PSU's iPad pilot project with Geometry for Education course this spring
- son is now a 10th grader and 1st chair trumpet in the PHS band
- National Treasurer for Math Honor Society KME, webmaster and information coordinator for KS Section of MAA, candidate for governor of KS Section of MAA, Board of Editors of the Mathematical Association of America's Classroom Resource Materials series

# Alumni Highlight

Where we “brag” on one of our former students!

Dr. Adam Pintar of Arcadia Kansas graduated from Pittsburg State University in 2003 with a B.S. in Mathematics and a minor in computing. Since then Pintar has gone on to complete a M.S. in Mathematics at PSU, a M.S. in Statistics at Iowa State University, and a Ph.D. in statistics from Iowa State University. When asked about what made him want to pursue a PhD, Pintar said “I first contemplated pursuing a PhD while I was mathematics undergraduate. I loved math, and I mostly just wanted to know if I could get a PhD. I ended up choosing statistics because it was my favorite subject when I was a graduate student at Pitt., and Dr. Jay provided quite a lot of encouragement. In retrospect, I’m very happy with my decisions because they led to my job at NIST where I get to collaborate with other statisticians and scientists on a variety of challenging problems. I can’t imagine a career that I’d enjoy more.”

While at Iowa State University, Pintar received the Dan Mowrey Consulting Excellence Award in recognition of outstanding contribution in the area of Statistical Consulting while working toward a graduate degree. Pintar consulted on more than 30 projects during this time! Now Pintar is a mathematical statistician in the Statistical Engineering Division of the National Institute of Standards and Technology.

From his time at PSU, Pintar reflects, “In my first semester as a graduate teaching assistant at Pitt., we held a fundraiser with the following twist. One jar for each professor and teaching assistant was put in the common area by the offices with their name on it. For a length of time, I can’t remember how long now, anyone was able to put money in anybody’s jar. At the end of the allotted time, the person with the most money had to kiss a cow that Dr. Flood provided. That memory always brings a smile to my face. I’ve tried, but never succeeded, to convince other fundraising efforts to use a similar tactic. It’s too bad I think.”

Pintar and his wife Nilam (also a PSU graduate) now reside in Gaithersburg Maryland where Nilam teaches special education at Richard Montgomery Hight School. Pintar offers the following advice to current students: “Don’t be afraid to ask questions and speak up in class. This not only helps you understand the subject better, but it also helps professors to know what parts of a lesson are the most difficult for the students.” ■

Do you know of an alumnus of the Mathematics department who we should feature? Send nominations to [lhilder@pittstate.edu](mailto:lhilder@pittstate.edu).



*Dr. Adam Pintar, PSU Alumni*

## PSU Mathematics

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