

# MACS Newsletter

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SPRING 2014

## FHSU Awards 2 Math Majors \$12,000 NSF Grants

*And 5 more math awardees selected for next year!*

In May 2013, the FHSU Science & Math Education Institute announced its first cohort of Noyce Teacher-Leaders. Two current FHSU math majors

were among the six awardees chosen.

Amanda Barnum, a senior from Colby, and Nikolaus Boyle, a senior from St. John, were chosen to receive scholarships in the amount of \$12,000 each for the 2013-2014 academic year. Both Amanda and Nik are pursuing the teaching emphasis, and upon completion of their undergraduate degrees, have agreed to teach math for two years in a high-needs district as their form of "repayment" to the National Science Foundation (NSF). NSF agrees with FHSU that rural areas are high-needs. As each student is from a rural area in Kansas, both of them look forward to the challenge of teaching in the types of schools from which they came.

As mentioned in last year's article, the Noyce Scholarship Program was started 10 years ago in response to the shortage of highly qualified math and science teachers across the United States. During this time, nearly 3000 students have graduated from the program, and another 8000 students are currently receiving scholarship assistance from the program. The hope is that with



Julie Weber (Biology), Karli Henning (Biology), Nik Boyle (Math), Matt Spurlock (Physics), Nathan Purdue (Physics) and Amanda Barnum (Math)

excellent math/science teachers, students will become excited about the fields and a new generation of top-notch math and science students will develop. We are now in year 2 of FHSU's five-year grant.

In addition to receiving scholarship money, Amanda and Nik also participated in courses to help prepare them for teaching in a rural setting. In the seminar course taken with the other awardees, topics included specialized classroom management, personal and professional isolationism, and grant writing. They also both participated in a week-long rural field experience in early January to immerse themselves within rural schools in southwestern Kansas. Both of them spoke highly of the overall field experience, and felt valuable knowledge was gained which will help them in their future classrooms. (see pg 2 for more)

The second major component of the grant is focused on recruiting more students to consider math or science teaching as a career. Last summer 2013, FHSU sophomore Hailey Davey and FHSU Junior Aidan Winblad were 2 of 6 students selected for this program. Hailey, now a junior from Evergreen, Colo-

rado, is currently enrolled as a math major, teaching emphasis, and appears well on her way to becoming a successful math teacher. FHSU is actively searching for freshman and sophomore level

students to help with the various science and math camps we currently offer each summer, so if any readers know of potential candidates from FHSU or elsewhere who might consider math or science teaching as a career, please encourage them to apply for next summer's awards.

Finally, the FHSU Science & Math Education Institute has recently announced the awardees for the 2014-2015 academic year. Luke Abbott, a junior from Great Bend, Sydney Lower, a junior from Hutchinson, and Lakin Werth, a junior from Hays, have all been selected as Noyce Teacher-Leader scholarship recipients. All three are current FHSU math majors with a teaching emphasis. In addition, two transfer students, Nicole Maurer (Cowley County CC) and Will Pingsterhaus (Dodge City CC) have agreed to transfer to FHSU and accept Noyce Teacher-Leader awards and major in mathematics with the teaching emphasis as well.

The MACS department is very excited to work with all these fine young men and women, and are confident they will provide quality math teaching for years to come!

# Experiences of a Noyce Scholar

by Amanda Barnum



Amanda is a math education major from Colby, Kansas

When I was first informed that I would be a recipient of the Noyce Scholarship, I was ecstatic. The financial support gained by the scholarship lifted a big weight off my shoulders. But being a Noyce Scholar is about more than just the money—it's about preparing future teachers.

When I say that part of a stipulation of the scholarship is taking an extra class, most people groan. The truth is, I can't imagine going into teaching without these classes. Scholars have the opportunity to sit down with experienced teachers and administrators. We ask questions, listen to their experiences, and learn about topics that aren't necessarily taught in other classes. The personal experiences brought into the

classroom really make the discussions real and relevant, and teach us more than what we can learn from a book. Topics discussed include the legal issues for teachers, safety and discipline in the classroom, and school financing.

Our learning doesn't stop there. As a Noyce Scholar, I have gained valuable experience. We all went to a Common Core Seminar in October, and worked beside teachers in learning about the new Common Core Standards. We spent a week observing a teacher in our field, and I know I for one asked the teacher many questions! Our next venture will be to Junction City, Kansas, where we will

be attending KATS Kamp!

The benefits of being a Noyce Scholar are immeasurable, but they won't be ending on graduation day. As I step out into the world of teaching, I will have the entire Noyce Scholarship committee standing behind me, giving me encouragement, support, and advice the whole way through. From beginning to end, the Noyce Scholarship is not just a scholarship: it is much, much more! I am looking forward to the future opportunities of being a Noyce Scholar!



Nik is a math education major from St John, Kansas

The Noyce Program has been a huge asset in my developing career as an educator. On paper, the most significant part of the program may seem to be the \$12,000 scholarship, but the program itself provides so much more. The most beneficial experience I have gained from the program is the additional interactions with educators who have experience in the classroom environment. Through our weekly meetings we are able to discuss the day-to-day classroom issues that an individual might face in the classroom that are not addressed in the standard education coursework. Additionally, all of the Noyce recipients attended an observation in a rural western

## More Noyce Experiences

by Nik Boyle

Kansas school over Christmas break. I personally gained a lot from this experience because the school allowed me free reign in my observation of the school's classes. Through this process of observation, I was able to see several educators teaching classes of students between the 7<sup>th</sup> and 12<sup>th</sup> grade level, helping me to better understand the different dynamics that come into play based on the age group of the students you are teaching.

### Summer 2014

#### ONLINE

MATH 010 Intermediate Algebra

MATH 110 College Algebra

MATH 250 Elements of Statistics

MATH 331 Calculus Methods

#### ON CAMPUS

MATH 660 Partial Differential Equations — 10:30 — 11:45 M-TH

## What Are They Doing Now?

By Zane Engelbert

I was raised in Norton, Kansas. From there I went to FHSU and received a B.S. in Mathematics (cum laude) and minor in Geography. While at FHSU, I was a member of the Wrestling team, and a Resident Assistant/Resident Manager at Wiest Hall.

After graduating from FHSU's undergrad program, I returned and pursued a Masters in Geoscience/Geography with an emphasis in GIS (Geographic Informations Systems). While attending graduate school I applied for a Mathematical Scholarship in the Math Department. The Chair of the Math Department, Dr. Sandstrom at the time, noticed my application for the Mathematical Scholarship and told me that he could do something better, a part-time teaching position. I began teaching the Intermediate Algebra (Computer based) course for FHSU. This helped me pay my graduate school tuition.

After finishing up my course work for my master's degree I began my job search and I was offered a position at a company named 21st Century Systems Inc. (21CSI) as a Software Engineer/GIS Specialist. I still had my thesis to write at this point. I had the programming skills learned through my Mathematics B.S. degree and my GIS from my master's degree and this caught the company's eyes because it was a software engineering company which produced applications with maps. 21CSI mainly did contract work for the U.S. Department of Defense. The company had roughly 130 employees in eight office locations throughout the U.S.

I chose the McCook, Nebraska office out of the eight office locations 21CSI had to offer. McCook, Nebraska was only an hour drive from my home town of Norton, and had a population of about 8,000 residents. While working for 21CSI, I finished writing my thesis and earned my master's degree. While working in



Zane and his wife Amy are pictured with their three children: Turner-5, Ava-3, and Dylan-1

McCook I began coaching wrestling. I was the Head Youth Wrestling Coach (1st - 6th grade), the Head Junior High Wrestling Coach (7th - 8th grade), and a Volunteer Assistant High School Wrestling Coach (9th-12th grade).

I gained valuable experience working for 21CSI but after having worked there for five years, I was laid off. 21CSI was quickly closing its branch offices and laying off employees due to declining contracts.

After conducting more job searches I received an offer from SandRidge Energy as a Sr. GIS Analyst. SandRidge Energy is a public oil and gas company with roughly 2,000 employees. SandRidge is considered an exploration and production in the Kansas and Oklahoma (MidCon) area. I received a job in their corporate office at Oklahoma City. I really en-

joy working for SandRidge Energy. Along with their great compensation package, SandRidge provides many benefits to their employees. The company provides a flexible work schedule, a weight room (which I regularly attend) that offers exercise classes such as CrossFitt, KettleBells, etc., tickets to pro-sporting events, concerts, zoo passes, sponsorship to many running events (5K, 10K, marathons, mud-runs) and other opportunities. I have run around fifteen 5K and 10Ks, one half-marathon (13.1 miles), three full marathon (26.2 miles) and two mud-runs.

I have again become a volunteer wrestling coach for the local High School and Middle School wrestling programs (Edmond North). My wife and I have three kids ages 5, 3 and 1. During November of 2013, my wife and I ran our first marathon together. It was a blistering 24° during the entire race.



Hailey Davey and Judy Brummer work with Math Campers to understand rates at Math Camp 2013.

THANKS TO EVERYONE WHO DONATED AND SUPPORTED MATH CAMP

## SPLASH INTO MATH

The summer of 2013 brought with it the first annual FHSU math camp for 4<sup>th</sup> through 6<sup>th</sup> grade students. Twenty students from seven Kansas communities attended the camp June 17 – 20. Three faculty members, Dr. Lane Young, Dr. Keith Dreiling and Judy Brummer supervised the camp with the assistance of 6 student Noyce Summer Scholars including math majors Hailey Davey, Shayla Hilt, Aidan Winblad, and Vanessa Saucedo.

Campers were challenged with the task of planning a water park. Working in groups of 3 or 4, each group chose a theme for their water park, created a group cheer and planned the differ-

ent aspects of their water park. Each park included a pool, a water slide and a tipping bucket. The students had to follow a budget and buy or rent supplies from the camp "store". The student scholars that assisted with the camp gained some valuable experience working with the campers; and the campers developed improved mathematical skills in geometry. But, let's not forget the fun! Campers participated in team building activities and were treated to a water balloon fight on the last day of camp.

## GETTING TO KNOW YOUR SCHOLARSHIP

Upon retirement after 28 years of teaching in the FHSU Math Department, Mary Kay Schippers and her husband Dan decided the time was right to establish a scholarship fund at FHSU.

The fund was designed to help combat the "brain drain" out of Ellis County. The recipient of the scholarship shall be a freshman who is a graduate of an Ellis County high school majoring in one of the following areas: Mathematics and Computer Science, Physics, Chemistry, Biology, or Geology. The recipient must have a 3.0 GPA minimum and be enrolled in Analytic Geometry and Calculus I or higher for the fall semester. The \$1000 award is renewable annually for up to three years as long as the recipient meets the established criteria.

The award this year was split between Shelby Dinkel and Kyler Meyers, both graduates of Hays High School and both majoring in Physics.

The scholarship is named the Schippers Family Scholarship in recognition of Mary Kay and Dan, graduates of Victoria High School, and their sons Brent and Jared, graduates of Thomas More Prep/Marian High School, both Ellis County high schools. The family has 5 degrees from FHSU among them.



Rachel Schmidt, Krysten Brake, and Charlee Samuelson were three of the 2013 Kappa Mu Epsilon Initiates.

# KME/MACS CLUB UPDATE

by Lanee Young



Ron and Cathy Sandstrom sharing their treasures and stories from their trip to China.

As we take a moment to reflect on the activities of KME and MACS club this past year, we realize that we didn't do much differently than the year before. To the average reader, it may seem like a boring existence but to the well trained eye, it looks like a pretty strong tradition. The KME Spring 2013 Banquet was held in The Memorial Union on May 6. The new initiates were Krysten Brake from Atchison, Kansas, Thuy An Nguyen from Liberal, Kansas, Charlee Samuelson from Clay Center, Kansas, and Rachel Schmidt also from Clay Center. Dr. Ron Sandstrom and his lovely wife Cathy shared about their travels to China. It was a very interesting and enjoyable cross cultural experience for everyone in attendance.

On August 16 (the Friday before classes), the MACS Faculty had the opportunity to meet all of the incoming math and computer science majors. This was a great time to start putting names and faces together. After the first seminar all math and computer science majors were invited to join the MACS faculty to an ice cream social out in the hall. This was quite well attended....as shocking as it may sound, even Dr. Dreiling ate some ice cream. A pizza party was held a couple weeks later but the faculty ended up eating most of the pizza. The faculty returned to their winning ways during the annual softball game. There was a great turnout for the game and an even greater turnout for the picnic. Everyone loved to eat Triangles and enjoying some good MACS camaraderie. As we continue our MACS traditions, hopefully you will take time to reflect on the good times you had in KME and MACS Club.

## MATH RELAYS

By Bill Weber

The 2013 version of the Relays brought over 650 high school age students to the FHSU campus for a day of taking math tests. Students competing both as individuals and teams worked through the 6 tests in an attempt to score as many points as possible for their school. This past year, we had 49 schools present, which made for quality competition at each level.

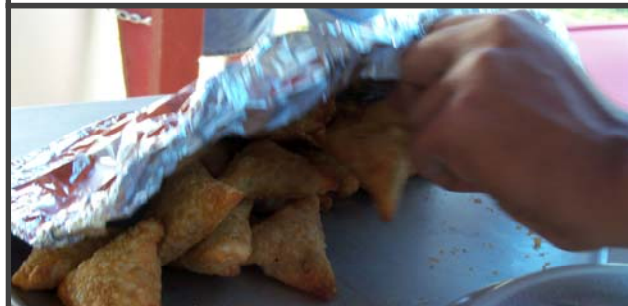
In class 1A, the overall team winner was St. Johns Catholic, followed by Ashland and Pawnee Heights. In the 2A/3A category, Decatur Community won top honors, with Southeast of Saline and TMP-Marian placing 2<sup>nd</sup> and 3<sup>rd</sup>. Within the 4A-6A category, McPherson was the winner, with Salina Central and Hutchinson also placing. For a complete listing of team placing and individual winners, please check our website <http://www.fhsu.edu/macs/Math-Relays/Past-Winners/>

Something new we are looking into for next year is a Computer Programming competition to be run alongside the Math Relays competition. Much work will be done with this over the summer, so hopefully I have good news to report about it in next year's newsletter!

The 36<sup>th</sup> Math Relays (and Programming competition) will be held on Thursday, November 13, 2014. We look forward to another fun day of giving students a positive experience on the FHSU campus!



Royall Yonkers, Jamie Spoonemore,, Nik Boyle, and many others dig in after a hard fought game.



## NEW FACULTY MEMBER JOINS MACS DEPARTMENT

My name is Soumya Bhoumik, and I joined Fort Hays State University's Mathematics & Computer Science Department in the August of 2013. I am from India, and grew up in a small but beautiful town named Suri, raised by very loving family. Whenever I look back, I consider myself very lucky as my family members (especially my mother, and brother) were always there beside me. Although I always liked mathematics, in my childhood I was never very attentive while solving mathematical problems, which obviously brought my math scores down. At that time I met with a really strict teacher in the form of my father. To build my attention in problem solving, and to avoid my silly mistakes in math, he started a new strategy: everyday's session started with ten problems, and then for each mistake, I had to solve two problems in addition to those ten on the following day. Obviously I never really like his strategy, but as you realize, it did fix the problem.

Choosing Mathematics as my major wasn't a surprise, because by that time spending time on mathematics became spending time with mathematics, and I really started liking that subject. I completed my undergraduate and Master's from India, and then joined a Information Technology Company as a software engineer, thinking of applying the subject in real life. Very soon I started to realize that I was missing the true flavor of mathematics. I came to the U.S. to pursue my Ph.D. in math, specifically Graph Theory, the branch of discrete mathematics I liked the most. Certainly, I admit that it was one of the best decisions in my life. Apart from building my professional life, graph theory proved to be a positive catalyst in my personal life too. I was introduced to my beautiful wife, since both of us were extremely pas-

sionate about graph theory, and of course marrying her was my second best decision. While doing Ph.D. work at Mississippi State University, I taught various undergraduate level courses as a graduate teaching assistant. It was really nice experience for me, and more importantly it helped me in choosing my next career path, staying in academia. When I was seeking a job, there were few universities those offered me the job as assistant professor, but in the campus interview I really liked the mathematics department of FHSU. I felt the attachment to the faculties, beautiful campus, and most importantly felt connected with the students. So when I finally got the offer from FHSU, I didn't think twice to accept and I never regret in making that decision. I am sure after a few years when I will look back, it would be considered as my third best decision of my life.

As an infant, I used to spend less time in studies, and more on the play ground, and other creative activities. I always loved to paint, mainly with watercolors and pencil sketches (although I just started doing some oils a few months back). I also love to make creative sculptures with discarded tree roots and branches. Other than arts, sport has been one of my other major hobbies. I like to play badminton, table tennis, soccer, chess, racquetball, and cricket. As a matter of fact, I had to learn a new one whenever I moved to a new place. I started playing badminton in Mississippi State, and in last few years I was the university champion. After I moved to Fort Hays I started playing racquetball. Although still a newbie, I am sure I am getting better. By next year I am positive about being ready for the university tournaments.



I would like to acknowledge my gratitude to each and every member of MACS for providing me with the necessary facilities and friendly environment for working in the Department of FHSU. At last I would like to finish with one quote of Bertrand Russell about mathematics, that I always not only share with my students, but also try to make them realize: "Mathematics, rightly viewed, possesses not only truth, but supreme beauty."

Enroll your 5th—7th grader in this year's math camp June 2-5:

**MATH**  
+  
**ROLLER COASTERS**  
=  
**FUN**

More information at [MATH CAMP](#)

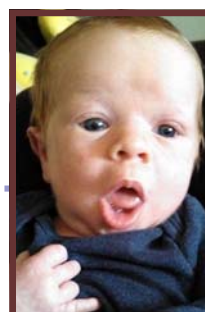
# Faculty Scholarly Activities 2013

by Mohammad Riazi

- ◆ The Mathematics and Computer Science faculty are actively involved in original research, publication, presentation, problem solving and proposing. The following is a partial list of scholarly activities by the department in 2013.
- ◆ Attended/Presented MACS seminars.
- ◆ Attended MACS Problem Solving sessions.
- ◆ Continued working on unfinished research problems.
- ◆ Submitted solution to the Problem# 1010 in College Mathematics Journal (Vol-44, No-4 Sep'13).
- ◆ Attended the 2<sup>nd</sup> Annual Mississippi Discrete Mathematics workshop, MSU.
- ◆ Honorable mention in an article by Stephen Bozaneck, "Who's Who in Academia".
- ◆ Three Different proofs of the Lebesgue Number Lemma, AMS subject: 11B05, Abstract sent to Combined Meeting of Mathematical Association of America.
- ◆ Nominated for the President Distinguished Scholar Award.
- ◆ "Kuratowski Closure- Complement Theorem" presentation at Fort Hays State University.
- ◆ "Different Proofs of Lebesgue Number Lemma" Presentation at the Combined Meeting of The Missouri River Section of MAA, Northwest Missouri State University.
- ◆ A Fresnelian Definite Integral" Problem 1896, Proposed by Timothy Hall, Cambridge, MA., Credit for the Correct Solution in Mathematics Magazine, Vol. 86 No.3 pages 228-230.
- ◆ "Technology in Second-Language Learning: A Student's Perspective," The Journal of Computing Sciences in Colleges, vol. 28, issue 5, May 2013, pp. 144-151.
- ◆ Presentation at the Central Plains Conference of the Consortium for Computing Science in Colleges, "Technology in Second-Language Learning: A Student's Perspective."
- ◆ Submitted a paper describing the BSCM C++ library to the International Conference on Information Systems Engineering (known as ICISE 2014).
- ◆ Awareness and Acceptance of Diversity, The Kansas Advocate, Spring 2013.
- ◆ Benefits and Drawbacks of Online Homework, Presentation at KATM.
- ◆ Methods in Algebra, from 1905, Presentation at KATM Annual Conference, Junction City. KS.
- ◆ "Alternate Epsilon Producing Functions" Submitted for Publication.
- ◆ The Hypergeometric Distribution and TI Calculators presentation at ICTCM.
- ◆ Referential Extension and Consolidation: A Theory of Mathematical Understanding in Introductory Calculus.
- ◆ What is Happening on Campus Now? Noyce Teacher Leaders of Western Kansas, Presentation at National Noyce Scholarship Conference at Washington D.C.
- ◆ Developed and facilitated Math Camp
- ◆ Analyzed Data for ECFI- Accounting.
- ◆ A special Linear System and Catalan Numbers, Presentation at KMAA, Maryville, MO.
- ◆ Department of Defense, information Assurance Scholarship, rewarded \$ 36572.00

## Random Facts or Alumni News

- ∞ Congratulations to Josh Peterson (2010) who was chosen as one of the Distinguished Teacher of the Year by the Kansas Association of Independent and Religious Schools.
- ∞ Dr. Hongbiao Zeng was a recipient of the 2013 Men of Merit Award. Congrats Dr. Zeng.
- ∞ Tom Albers (1988) was chosen as the 2013 Assistant High School Principal of the Year.
- ∞ Aaron Lessor (1997) married Sandra Charbonneau July 5, 2013. Aaron works at CESSNA in Wichita, KS
- ∞ Rosabel Flax, a long time member of KATM and math teacher in Ness City passed away on March 5, 2014.
- ∞ Aimee Overmiller (2013) is teaching math in Solomon, KS.
- ∞ Allison Schley (2013) is teaching math at Grandview High School in Aurora, CO.
- ∞ Shelby Smith (2013) is working at KASA in Salina, Kansas
- ∞ Nolan Trapp (2012) is teaching at Little River High School.
- ∞ Emma Meier (2012) is teaching at Victoria High School.
- ∞ Trevor Siebert (20??) is teaching in Russell, KS.
- ∞ James Beard (2013) is teaching in Garden City.
- ∞ Jocelyn Serna is currently student teaching but already has a job in Cimarron Kansas for next year.
- ∞ Gene Zimmer (1961) passed away on February 12, 2014.



Future math major  
Everett Sander.



Future math major  
Felicity Adams

- ∞ Kylie (Simpson) Sander (2011) and Greg Sander welcomed Everett Paul to the world on February 21. He weighed in at 8 lbs and 19.5 inches.
- ∞ Jocelyn (Lytton) Adams (2013) and David Adams (cs) welcomed Felicity Lynn to the world on December 11, 2013. Felicity weighed 7lbs, 9 oz and was 19 inches long. Jocelyn is teaching math in Meade, KS.
- ∞ Kory (2010) and Jamie Koehn welcomed daughter Ava Marie to the world on March 14.

# Retired Faculty News

## **Ron Sandstrom**

Hello fellow Mathematicians and Friends. This time last year found us just returning from a trip to Australia and New Zealand and finding out that we were both allergic to horses. We finally found an alternative treatment that allowed the horses back onto our pasture. Since then among many trips to Derby and Hutchinson to see grandchildren, I found time to continue to preach about once a month, serve on the board of the Golden Belt Foundation, serve on fundraising committee for Locust Grove Village (our local nursing home and assisted living apartments), serve as treasurer of Local Relay for Life, and serve as treasurer for Rush County Historical Society. I have continued my service to the Hays Optimist Club and to help re-establish the chapter of Sigma Phi Epsilon on campus. Also, in August we took a river cruise to Ukraine and stood on the square where many of the current protests are taking place. But the highlight of that trip had to be visiting Yalta and the place of the conference among Stalin, Churchill, and Roosevelt. In January we took a cruise taking us from Los Angeles through the Panama Canal to Fort Lauderdale, FL.

## **Elton Beougher**

Keith gave me an ultimatum. He's going to send the math department enforcers to break my legs if I don't get something written. I'll see what big stories I can make up to get him off my case!

No big trips for the Beougher house this past year. We spent all of our "mad" money on the British Isles cruise last year, so it's Ramen noodles and road kill for us for a while. They also have some left over coffee at the Starbucks that I have learned to love. It's also free. They just pour all of the excess coffee and other drinks into a big vat and stir. The mocha, French vanilla, macchiato (?), dark roast, chai tea, and strawberry tea make a delicious combination that will knock your socks off. Kind of like a poor man's "suicide" drink, you know the one that you make for yourself when you fill your own beverage cup by mixing all of the flavors. My personal favorite is a mix of 1/3 each of Sprite, Root Beer, and Dr., Pepper. Makes my wife gag.

About three years ago my wife gave me an ultimatum (do I get more of those than the average person) regarding the artifacts I have found with a metal detector over the years. I have numerous cigar boxes of those stacked here and there after 30 plus years of wandering over the western Kansas prairies. It is very relaxing for me. Well, the ultimatum was for me to "get something done with them so I won't have to deal with those when (not if) you die." I thought putting them in cigar boxes and stacking them was "doing something with them." But that was not to her satisfaction. When she gave me this "do it or else" look and tone of voice that said "you may die sooner than you think," I knew the clock was running. At that time she gave me until October. She didn't specify which year so I kept putting it off. Well, I didn't take her too seriously and when October, 2012, rolled around she gave me a new warning and extended the time to "next October." I could have played it dumb and pretended I heard "next decade." Finally after three years I had played all of my excuse cards. In addition my brother who had been my detecting buddy for those more than 30 years passed away in October, 2012, and his sons arrived at my door with all of his artifacts, doubling the number! Also, he was the family genealogist and I got about 15 boxes of those materials. So, I started this past January getting the artifacts sorted and am putting them in displays, one display case each for the locations where we found the artifacts. I will then donate these to the county historical museums at those locations. This is taking longer than I thought but should finish by summer (and beat the October deadline :0)).

I recently had eye surgery and am temporarily seeing with only one eye. It strains that eye to do too much work with it. I can watch all the movies that I want, but have a convenient excuse to stop typing on my iPad.

## **Erv Eltze**

LeAnn and I celebrated our 50th wedding anniversary in August. I spent February through October undergoing chemo.

## **Charles Votaw**

We haven't done much this year that's much different from the past. Mostly, we've managed to keep going. I did recently take on the task of homeschooling an eighth-grade great-grandson. We're hoping that goes well.

## **Rosalie Nichols**

We have had another busy year. Our big trip was to New Zealand. We visited again Rotorua, Napier and Lake Taupo on North Island and then attended the Clan MacLeod World Gathering in Auckland. Our other travels were in the States for visiting family, attending graduations, playing in bridge tournaments and visiting friends. I highly recommend retirement.

## Mary Kay Schippers

### Best News since last year:

In December, we welcomed Brock Alan, our fourth grandchild and first grandson. All four belong to our oldest, Brent, and his wife, Sasha. My car now goes on autopilot as I head east on Interstate to Lawrence. I am hoping for good news from Jared and Marli for my next newsletter contribution.

### Second Best News:

I crossed "Write a book" off my bucket list and published "A Year On The Family Farm". Check it out on Amazon.com. It's easiest if you search for my name.

### Trips:

Besides to Lawrence? We went to San Francisco with my sisters and brothers-in-law and went to Jackson Hole, WY with the kids and grandkids.

### The Other 98% Of The Time:

My routine at the farm involves what most people consider "work" - gardening, mowing, watering, shoveling horse manure, training a gelding, feeding a menagerie of animals, moving limestone rock, and hauling bales. To those people who can't begin to understand why I would give up a life of leisure to live on a farm, I say this: "A bad day in the country is still better than a good day in town." 'Nuff said.

## Thank You for Supporting FHSU MACS DEPARTMENT

The Department of Mathematics & Computer Science enjoys this opportunity each year to list the donors who have given so generously to our department. Without your contributions it would not be possible for us to award scholarships to our deserving majors. Please check out the list of students receiving scholarships on the previous page of this newsletter. We wish to thank each of you who have shared your financial resources with the University, and especially wish to thank those of you who designated the MACS Department as recipient. We also appreciate the employers who matched your contributions. Individuals or companies contributing to the Spring 2013 campus drive or Fall 2013 Tiger Call are:

Joan Albers, Jeralyn Allen, Charles and Cathryn Allphin, Steve Alston, Lavern and Cari Andrews, Gary and Bernice Bell, Elton and Wendy Beougher, Rex and Beverly Blanding, Stacy Boyd, Susan Bozeman, Stephen and Judy Brummer, Darren Brungardt, Larry Carter, Kent and Lisa Colwell, Willis and Alma Crabtree, Mary Cunningham, Emily Decker, Danny and Connie Dibble, David Dilley, Kyndra Dobson, Keith and Pam Dreiling, Kay and Mildred Dundas, Dennis Echard, Carolyn Her, Leslie and Karen Freeman, Kathryn Fritz, Rhonda Gardner, Kent and Karla Gross, Chad Heckman, Cheryl Helget, Al Herren, Troy and Tina Herrman, Jerrod and Jess Hofaker, Kent Huffman, Amy Johnson, James and Barbara Johnson, James and Judy Johnson, John and Regina Johnson, Brad Kearn, Vernon Kisner, Norwin Kohls, Richard Kratzer, Mike and Carmen LaBarge, Darrell and Sheila Latham, Clint and Carol Ledbetter, Larry and Donna Leitner, Don and Linda Lesovsky, Aaron Lessor, Max and Thelma Liggett, Pat Luea, Lois Lutz, Larry and Connie Masters, Ronald and Debbie Miller, Bob and Anel Minneman, James Morford, Troy and Laura Munsch, Patrick and Donna Myers, Weeden and Rosalie Nichols, Adam North, Marvin and Katrina Penka, Robert Plomondon, Darlene Plymell, Roger and Ruth Pruitt, Mohammad and Seddigheh Riazi-Kermani, Shayne Riley, Richard and Sharon Ruder, Jeff and Lori Sadler, Ron and Cathy Sandstrom, Robert and Christine Sauber, Dan and Mary Kay Schippers, Kim Schmidtberger, Janet Schuetz, Dennis and Gaylene Shank, Loren Shannon, James and Lida Sharp, Joyce Buckles, Pat and Kathy Spicer, J Gail Stanley, Todd Stanton, Debbie Stelter, Betty Taylor, Textron, Inc, Ken Trimmer, Blake and Crystal Vacura, Ellen Veed, Charles and Reta Votaw, Charlene Weber, Bill and Tiffany Weber, Donald Werner, Westar Energy Foundation, Joe Whitley, Rex and Margaret Wilson, Marilyn Wilson, Leroy and Sharon, Winklepleck, Wilbur and Shirley Wood, Lane Young, Hongbiao and Michelle Zeng, Eugene Zimmer.

Apologies are extended if someone's name was inadvertently left off the list. We appreciate each and every donation received! These contributions are so important in allowing us to attract and retain mathematics and computer science majors; which then gives these students the opportunity to become successful citizens such as yourself. If you know of any potential mathematics and computer science majors, please let us know by sending us their names.

# Over \$85,000 in Scholarships Offered for 2013-2014

by JD Sadler

The Fort Hays State University Mathematics and Computer Science Department (MACS) offered \$87,350 in student scholarships for the 2013-2014 academic year. The scholarship dollars come from five areas of funding: named scholarships, departmental scholarships, Academic Opportunity Awards, grant funding, and special funds donated to the department. This year saw a dramatic increase in dollars awarded, a 75% increase over last year's totals. The increase was due to greater funding of long-standing scholarships and also to a collection of new scholarships including the NSF Noyce Scholarship program.

Scholarships funded through the on-going generosity of contributors to named/endowed scholarship funds, through the gains in the investment of these funds, and through other unrestricted donations provided a record \$19,750 in the department's highly prized named scholarships. New to this funding area for 2013-14 is the Dr. Carolyn Ehr Scholarship. The department students and faculty are highly appreciative to all who make these funds available. The scholarship dollars were awarded to the following upperclasswomen/men pursuing a degree within the department:

Tyler Masters (Natoma)—Moore Family \$1,000 Scholarship  
Tanner Hageman (Cheney)—Moore Family \$1,000 Scholarship  
Luke Abbott (Great Bend)—Moore Family \$1,000 Scholarship  
Lakin Werth (Hays)—Dr. Ellen Veed \$1,000 Scholarship  
Zach Gaughan (Hays)—EE and Louie Colyer Memorial \$800 Scholarship  
Debora Denny (Hutchinson)—Esther Carter Ogle \$600 Scholarship  
Mallory Diederich (Topeka)—Dr. Carolyn Ehr \$800 Scholarship  
Andrew Foust (Valley Center)—Frances E Shockley \$600 Scholarship  
Sydney Lower (Wichita)—Moore Family \$1,000 Scholarship  
Evan Lane (Ness City)—Gene and Pauline Etter \$600 Scholarship  
Aiden Winblad (Goessel)—Paul Miller Math/Physics \$1,000 Scholarship  
Erin Deenihan (Hill City)—Tebo Family \$1,200 Scholarship  
Kaitlyn Paul (Salina)—Clarence W. Lowry \$1,000 Scholarship  
Blake Michaud (Salina)—Ron and Cathy Sandstrom \$1,000 Scholarship  
Steffy Thottasseril (Liberal)—Wilmont Toalson \$1,500 Scholarship  
Jamie Spoonemore (Hillsboro)—Elgin & Freda Denio \$1,500 Scholarship  
SiYang Cheng (Hays)—Ruth and Roger Pruitt \$1,000 Scholarship  
Naomi Kitzis (Hays)—Jimmy Rice Memorial \$800 Scholarship  
Royall Yonkers (Amherst, NE)—Ora and Everett Marshall \$600 Scholarship  
Kale Plush (Victoria)—Vivian Baxter Memorial \$750 Scholarship

Another portion of the 2013-2014 MACS scholarship monies was funded by contributions to the department during the annual FHSU Endowment Telethon. (A special "thank you" goes to all those who contributed.) The dollars received during the telethon were used to fund six Departmental Scholarships totaling \$3,200. The following students advancing through a MACS degree program were awarded scholarships:

Thao Tran (Salina)—MACS Department \$600 Scholarship  
Dylan Hogan (Winfield)—MACS Department \$600 Scholarship  
Charlee Samuelson (Morganville)—MACS Department \$500 Scholarship  
Sara Boden (Beloit)—MACS Department \$500 Scholarship  
Carlos Linares (Aurora, CO)—MACS Department \$500 Scholarship  
Tyler Hardwick (Hays)—MACS Department \$500 Scholarship

A third area for 2013-2014 MACS scholarship monies was funded by an unexpected contribution to the department by Kerry and Dorothy Bahl. Although no specific restrictions on the expenditure of these dollars was given, the department faculty decided to use \$5,000 for student scholarships. Several of these scholarships were designated toward deserving transfer students. The following MACS degree students were awarded scholarships from the Bahl's contributions:

An (Thuy) Nguyen (Liberal)—\$2,000 Scholarship  
Shayla Hilt (Saint Francis)—\$750 Scholarship  
Shauna Guyle (Wellington)—\$750 Scholarship  
Liv Longfellow (Concordia)—\$750 Scholarship  
Elaina Haberer (Luray)—\$750 Scholarship

Several MACS department students received newly established scholarships from the NSF grant Noyce Scholarship Program (co-directed by Dr. Bill Weber), and the SEMI-Steffen Scholarships (directed by Dr. Paul Adams through the FHSU Science and Mathematics Education Institute.) One may wish to examine last year's MACS Newsletter cover story detailing the Noyce Scholarship Program to find that federal tax dollars do make a significance difference for our students. After going through a rigorous application process, six MACS students received scholarships:

Amanda Barnum (Colby)—\$12,000 Noyce Scholarship  
Nikolas Boyle (St. John)—\$12,000 Noyce Scholarship  
Shauna Guyle (Concordia)—\$2,000 SEMI-Steffen Scholarship  
Hailey Davey (Evergreen, CO)—\$2,000 SEMI-Steffen Scholarship  
Jamie Spoonemore (Hillsboro)—\$2,000 SEMI-Steffen Scholarship

The final funding area is the Academic Opportunity Awards (AOA.) The AOA's continued to be a great resource for incoming freshmen to the MACS department by providing a two-tier awarding structure with amounts of either \$900 or \$500. The award and amount is based upon a student's interest in pursuing a degree within mathematics or computer science as well as upon the student's high school academic achievement and ACT/SAT scores. This past year, the MACS department offered thirty-four AOA scholarships to students interested in attending FHSU. From this group of prospective students, twelve received a total of \$10,400 as they began classes in Fall 2013. Those students included:

Houston Hilton (Goddard)  
Tanner Hulett (Beloit)  
Joshua Hoover (Washington)  
Larry Shepherd (Belle Plaine)  
Cody Forell (Alva, OK)  
William Goodrow (Hays)  
Kellen Griffin (Hays)  
Brianna Wooldridge (Hays)  
Kevin Jones (Cleveland, TN)  
Brian Ratcliff (Lyndon)  
Jared Mick (Ellis)  
Joseph Dougherty (Garnet)

The department encourages all alums to direct local high school students with an interest or talent in mathematics, mathematics education, or computer science toward FHSU. The department would enjoy awarding all possible dollars made available to us within the AOA scholarship area.

Many of the above students share their appreciation for the financial assistance that comes through these scholarships. Anyone interested in contributing to the scholarships funds may do so by sending a check payable to the FHSU Endowment Association, specifying the MACS department or named scholarship fund as the recipient of the contribution. Also, additional scholarship information may be obtained by completing the form on the inside back cover of this newsletter or by contacting Jeff Sadler at [jsadler@fhsu.edu](mailto:jsadler@fhsu.edu) ; (785)-628-4416.

# Wherefore Art Thou Mu (or Sigma)? Project to Improve Math 250 Being Undertaken

by Taylor Jensen

A research project is being undertaken with the ultimate goal of improving introductory statistics students' understanding of statistics and of improving the statistics learning environment. The project, a joint effort by the Teacher Education Department and the Mathematics & Computer Science Department, is being headed up by Dr. Lorie Cook-Benjamin and Dr. Taylor Jensen.

The specific purposes of the project are threefold, and will be tackled in chronological order as follows:

Determine the statistical concepts which are particularly difficult to understand for Math 250 (Elements of Statistics) students taking the course in an online environment. Determine those concepts which are difficult to understand for students taking the course in the traditional, "face-to-face" classroom environment. Compare and contrast the understandings of students in the two distinct environments.

Using available online material (such as applets and videos), design a supplementary online curricular support system, with required use in both the online course and the face-to-face course, to enhance students' understanding of difficult statistical concepts identified previously. Analyze the benefit of this supplementary system, and improve the system as needed.

Implement the supplementary online curricular support system in introductory statistics courses at other locations, including technical and/or community colleges, four-year colleges, and research universities. Use feedback from instructors and administrators at these other locations to increase the system's benefits to statistics learning. Work to ensure that the system is beneficial in both online and in face-to-face courses (as they are offered at these other schools).

At the time of writing of this article, the project is focused on the first purpose listed above. To that end, students taking Math 250 have voluntarily been taking the Comprehensive Assessment of Outcomes in a first Statistics Course (CAOS) test, both at the beginning of the term and at the end of it. The test is comprised of multiple choice questions which measure conceptual understanding rather than procedural skills.

While the findings so far are still preliminary, Dr. Cook-Benjamin and Dr. Jensen are hopeful that the data gathered will help identify needed changes to the Math 250 curriculum. "Our results at this point indicate that students are not learning the *whys* of statistics at this point, even if they appear to be fluent in choosing the 'right' Excel commands to perform a statistical analysis," said Dr. Jensen. "Since the interpretation of statistical results is just as important as their computation, we feel improvements can and should be made to our curriculum."