

FORT HAYS STATE UNIVERSITY DEPARTMENT OF MATHEMATICS



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UNIVERSITY

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FHSU HOSTS KSMAA

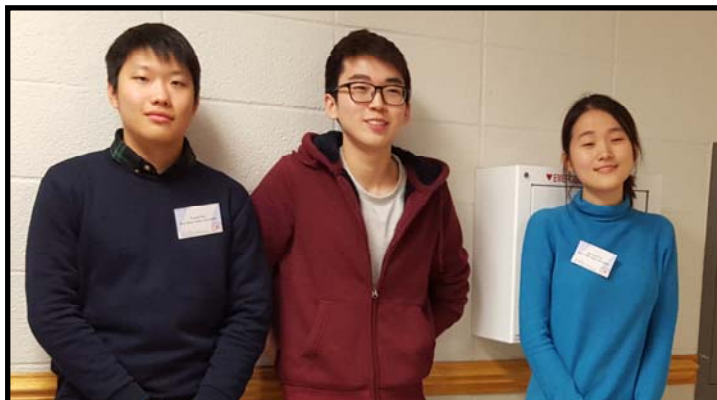
Students and faculty from around the state made the trek to western Kansas on April 8 for the Kansas Section Meeting of the Mathematical Association of America held on the campus of Fort Hays State University April 8-9, 2016. Friday evening participants enjoyed Dr. Stephen Kennedy, Professor of Mathematics at Carleton College and Senior Acquisitions Editor for MAA, speaking about Lorenz Attractors followed by a reception at Moss-Thorn Gallery.

Saturday morning, the fun started early. Students began competing in the Collegiate Mathematics Problem Solving Competition at 8:00 am while faculty listened to various presentations by colleagues. After a delicious German meal, Dr. Kennedy shared mathematical ideas from various articles from issues of Math Horizons. The day ended with a series of four student presentations.

Fort Hays State University students Gysenuh Hwang, Yuneil Yeo, and Hyunsoo Lee placed fourth overall in the team competition. Sam Devore, Christian Meuli and Ravhaysa Bharaniah also competed. Drs. Bhoumik, Dreiling, Riazi, and Zeng all contributed talks throughout the day.



Lanee Young, Elle Stein, Bill Weber, Keith Dreiling, Will Pingsterhaus, and Greg Farley enjoy conversation.



Gysenuh Hwang, Yuneil Yeo, and Hyunsoo Lee took fourth in the Problem Solving Competition.



Dr. Stephen Kennedy, Carlton College, was the keynote speaker.



Hongbaio Zeng, Lanee Young, Mohammad Riazi, and Soumya Bhoumik wait for the talk to begin.

“The Tiger Family is Important and Always Welcome

Great things continue to happen in our department. We cannot succeed without alumni and friends. Your gifts, information, linkages, hiring of graduates and interns, and even simple things like cheerleading and spreading the word about the strengths of our department, its students, and faculty, **are all important**. You are **always welcome** to stop and visit with faculty and students

What Are They Doing Now — Paul Flescher



Paul (right) is pictured with his sister Marjorie and brother Neal.

After graduating in 2013, I began my graduate studies at Kansas State University with a teaching assistantship. In the spring of 2015, I received my master's degree. Currently, I am studying proof validation and novice/expert differences using eye tracking under Dr. Bennett. Analysis has always been one of my main interests, and I am continuing to study topics regarding Measure Theory and Complex Analysis. While at KSU, I have been able to continue playing the trombone. I am fairly active in the music department, playing in the Wind Ensemble, Brass Ensemble, and the fall musical. Additionally, my assistantship covers trombone lessons under Dr. Hunt. KSU has treated me well; I have grown in every facet of my life, not just mathematically or musically.

What Are They Doing Now — Daniel Schneider

My name is Daniel Schneider, and I teach geometry and algebra I at Great Bend High School. This is my 4th year at GBHS, and I have been involved with math enrichment for students before school, curriculum steering for the math department, sponsoring the Fellowship of Christian Athletes group, and coaching middle school wrestling. Teaching high school has its ups and downs just like any other job. However, I find that every year there are getting to be more ups, or in nerd land, we call it more maxes than mins. The advice I would give you college kids studying to become math teachers can be summed up in three ideas: First, be prepared! Go over every lesson that you want to teach more than just the one time when you make it--the students will know if you don't. Second, get your students out of their seats. Some of the most successful class periods that I have is when my student's partner up and work problems around the room, the same way I used to in Dr. Dreiling's Calc I class. (Dr. D may say that I watched people work the problems more than actually working them myself, and to that I plead the 5th.) Lastly, at the end of the day, if you gave it your best then that is all you can do. There will be problems you can't answer on the spot, situations you hear about that you wish you hadn't, and some students who you might not get through to on a daily basis. However, as long as you can honestly say you gave it your all, then turn the lights off, go home and enjoy your family, and come back the next day to do it all over again. Who knows, the next day that problem won't vex you any longer, you will have a response to that precarious situation, and the student may understand the content. On a personal note, my family and I are doing great. My wife Stephanie (also an FHSU graduate) is enjoying her career in nursing. Our daughter Natalie will turn two soon and is growing like an exponential function. We anxiously await the arrival of the fourth member of our family, expected in early August.



Daniel, Stephanie, and Natalie Schneider

Masters Degree??

We have received several inquiries concerning the possibility of offering graduate level mathematics courses to certify teachers for dual credit classes. If the idea of a masters with an emphasis in Teaching Mathematics interests you, please send an email to lyoung@fhsu.edu. We would value your input as we investigate this process.

Noyce Scholar Update — Nicole Huber

Paying for college is an issue that weighs heavy on many students. It can be incredibly overwhelming. I applied for the Noyce Teacher Leader Scholarship because I wanted to relieve myself of such worries. However, I had no idea that being a recipient of the scholarship would be so rewarding in so many ways! In a nutshell, the Noyce Scholarship program is for science and math education majors of junior or senior classification and it was set up to encourage future teachers to teach at high-needs schools, where they are often desperately needed.

The reality is, most of the schools in Kansas are high-needs schools so the probability of you working at a high-needs school are immensely high. The Noyce program offers opportunities, experience, and real-world advice that will prepare you for teaching in such a school. You aren't just handed a check and told to sink or swim, they help mentor you and guide you through it all.

As you can imagine, there are truck loads of benefits that come with being a Noyce scholar, and that's exactly what I'm here to talk about. The obvious, immediate benefit of this scholarship program is assistance in paying for your schooling. This takes a huge weight off of college students' shoulders, and most college students would agree when I say that financial assistance is almost never turned down (especially assistance that you don't have to pay back!). A requirement of the program is that you have to teach 2 years in a high-needs school for every year you accept the scholarship. This can be a deterrent and often scare students but the Noyce program is set up to help you prepare for teaching in such a school.

The Noyce scholars meet once a week in a seminar and we discuss topics that don't always come up in education classes. We can talk about scenarios that we are anxious about, legal aspects of the job, and we get tips on what will make us stand out from the other applicants when it comes to getting our dream job. They bring in speakers from the college and from high schools that help paint a picture for us so we know what teaching is really like and we won't be as surprised when we get there. Every one of these speakers is a connection that I wouldn't have made without the opportunities provided by the Noyce program.

We also get the opportunity to go to high schools in the southwestern Kansas area and shadow their math and science teachers for a whole week so we can get a feel of what it will be like to teach in a school that is high-needs and in a rural area. That is an experience I will never forget. Other great opportunities we participate in are attending conferences. Some of these conferences are for Kansas math teachers, Kansas science teachers, and we even get to attend National conferences for math teachers, science teachers, and other Noyce scholars.

Everything I have done with the Noyce scholarship program has better equipped me to be the teacher that I want to be. I now have experiences and knowledge that I wouldn't have if I hadn't been a Noyce scholar. I also have connections to people who can help guide and mentor me, bonds with other students who are currently in the same boat as me, and countless fun memories. Yes, the Noyce scholarship program will provide financial assistance to you, but the financial help is nothing compared to the rest of the benefits the program has to offer. Filling out that application was the best decision I made in my entire college career (with the exception of my decision to be a math education major, of course!).



MATH RELAYS 2015 — BILL WEBER

Last November, the FHSU Math Department hosted the 37th Annual Math Relays. We hosted 661 students from 50 schools on that day, and had a very successful day.

In class 1A, the team champions were St. John's Catholic, followed by Rock Hills and Pretty Prairie. In the 2A/3A category, Decatur Community won top honors, with Trinity Catholic and Republic County placing 2nd and 3rd. Within the 4A-6A category, McPherson was the winner, with Hays High and Salina Central also placing in the top three. For a complete listing of team placing and individual winners, please check our website <http://www.fhsu.edu/macs/Math-Relays/Past-Winners/>

In addition to the competition, we also had FHSU math faculty available to visit with students about what it means to be a math major at FHSU. We visited with over 50 students; hopefully this will entice some of them to consider a degree in math from FHSU! Our alumni can be a great source of recruiting also, so if you know of a student in your local community who might be a good math major, please have them contact me at bweber@fhsu.edu so we can discuss the possibilities which exist.

The 38th Math Relays will be held on Thursday, November 10, 2016. We look forward to another fun day of hosting the best and brightest math students from our area on the FHSU campus!

Keith Dreiling wins Pilot Award

We are extremely proud of Associate Professor Keith Dreiling for winning the 2015 Pilot Award. Graduating seniors are given the opportunity to nominate faculty members who have had an impact on their education. Dr. Dreiling received this award based on his teaching excellence in the classroom, his outstanding service to the University and his research activities. Congratulations Dr. Keith Dreiling.



Dr. Dreiling gives a talk on Algebraic techniques from 1905 at the KMAA Conference held in Hays on April 8-9.



Roger Barta receives Alumni Achievement Award



Roger Barta is a very humble unassuming man who is most proud of his students and their accomplishments in the classroom and in the game of life. On October 1, Coach Barta was gracious enough to spend an hour with our math students discussing his accomplishments both on and off the field. True to his nature, most of the time was spent encouraging our students to find something they love and do it well.

Roger Barta, Smith Center, graduated from FHSU in 1967 with a B.S. in mathematics. He went on to earn an M.S. in math education in 1971 from the University of Georgia, Athens, where he was also awarded a National Foundation Institute Grant. He is a retired math teacher and football coach and is one of the most renowned high school football coaches in the history of the sport.

Over 34 years as Smith Center's coach, from 1978 until retiring in 2012, his teams won 323 games (against 68 losses) and eight state championships, including five straight from 2004 to 2008. From 2004 until 2009, his teams won 79 straight games.

Mr. Barta began his teaching and coaching career as a math teacher and assistant football and basketball coach with Rawlins County USD 105 from 1967 to 1970. In 1971, Roger was a math teacher and football coach with Tonganoxie USD 464. From 1972 to 1977, Mr. Barta taught math at Trego Community High School, WaKeeney.

Coach Barta began his longstanding career in Smith Center career in 1978 coaching and teaching math there until 2007.

In 2011, Mr. Barta was inducted into the National High School Athletic Coaches Association Hall of Fame followed by his induction into the Kansas Sports Hall of Fame in 2014. In 2008, the U.S. All-American Bowl Selection Committee named him the National High School Football Coach of the Year. Coach Barta's story has been featured in The New York Times and in Reader's Digest. He and his teams were also the subject of the 2009 book, "Our Boys: A Perfect Season on the Plains" with the Smith Center Redmen, by Joe Drape.

Swing into Summer with MATH Camp

FHSU Math Camp 2015 kept 3 faculty members, 6 Noyce Summer Scholars and 17 students swinging. This year's topic was miniature golf! Open to area 5th through 7th graders, the camp ran from 8:00-noon, June 15-18. Math Department faculty Dr. Lanee Young, Dr. Keith Dreiling and Judy Brummer, along with the Noyce Scholars, presented the camp. The camp was held in a new location this year, the old Tiger's Den in the lower level of Custer Hall.

Campers were challenged with the task of designing a miniature golf course. Working in groups of 3 or 4, topics such as symmetry, reflection, refraction and geometric constructions were discussed. By the end of the camp, each group had designed a miniature golf hole out of various lengths of wooden 2 x 4s. Campers included a variety of obstacles including a windmill, tunnel and other barricades. An end-of-the-week field trip to Precision Valley Golf had to be cancelled because of threatening weather; however, we had a good time playing the miniature golf holes created at camp and a few other fun games that the student scholars came up with.

The camp is not only a learning environment for the campers, but also for those that help with the camp. The Noyce Scholars gain valuable experience working directly with the campers, planning activities and reflecting on the day's lessons.



KME/MACS CLUB UPDATE

The annual KME Initiation Ceremony was held on April 28 in conjunction with a reception honoring all of our scholarship recipients. Parents, faculty, friends, and scholarship donors were on hand to honor twenty-four students as they received scholarships to continue their education. Four new members were inducted into Kappa Mu Epsilon bringing total membership up to 807. Kellen Griffin (Hays), Sarbari Mitra (Kolkata, India), Will Pingsterhaus (Cimarron), and Earl Watkins (Scott City) were the inductees. Everyone enjoyed snacks and conversation after the formalities had taken place.

On August 14 (the Friday before classes), the MATH Faculty had the opportunity to meet all of the incoming math majors and start learning names and faces. Per tradition, all math and computer science majors were invited to enjoy a variety of ice cream flavors in the hallway after the first seminar. Several pizzas have been consumed by students and faculty throughout the fall semester. A very small "crowd" attended the faculty-student softball game. Of course the faculty won. Next year we are going to invite Physics students and faculty in an effort to increase the number of attendees.

Faculty and students celebrated an approximation of pi on March 10. Although we did not have our traditional bacon pie, we did have a nice variety of round confections to taste. We were very disappointed that we missed an opportunity to celebrate square day 4/4/16 but we will be better prepared in 2025.



KME Initiates: Earl Watkins, Kellen Griffin, and Will Pingsterhaus

CHANGE OF COLLEGE — Soumya Bhoumik

"Progress is impossible without change, and those who cannot change their minds cannot change anything" - Bernard Shaw

Last year Fort Hays State University went through a lot of transformations due to the reengineering process. Our new president Dr. Mirta Martin, along with our new provost Dr. Graham Glynn, initiated this process last year, bringing many changes to the course of FHSU. As a part of this process, Department of Mathematics, which was a part of the College of Arts & Sciences, now belongs to new **STeM** (Science, Technology and Mathematics) College consisting of seven other departments: Agriculture, Applied Technology, Biology, Chemistry, Computer Science and Information System Engineering, Geosciences, and Physics. Dr. Greg Farley, the new dean of the STeM College, has a clear vision for the future. The advantages of having the STeM designation has many dimensions including, but not limited to student careers, stimulating critical thinking, scope of collaboration, etc.

First, connecting the disciplines for students opens the door to more meaningful curriculum that is relevant to the century in which we live. Opportunity to get familiar with many interconnected areas allows students to explore subjects at greater depth and develop critical thinking skills. Furthermore, when students or faculty have problems to solve, they can move seamlessly to and through whatever area can provide the relevant information including math, science, and technology. For example as Physics and Mathematics share similar problems (Differential Equations, Fluid Dynamics, etc.), they can reach out to each other whenever necessary. It also offers the opportunity to collaborate more with other disciplines, which is a great benefit, as it promotes scholarly activity at Fort Hays. Grant receiving opportunities may also be increased for each department due to the STeM label. Although the location of the Math Department has not changed, (we are still in Rarick) we all hope this theoretical change will ensure the betterment of the Department of Mathematics, as well as Fort Hays State University.



Everyone pitched in to help clean up the MATH Library.

One downside of the STeM College is the loss of the Computer Science Department and faculty to a new area on campus. The computer science faculty are now the part of the Department of Computer Science and Information System Engineering, which is located in Hammond Hall. It was indeed very difficult for us to let go of Dr. Zeng and Dr. Solheim, as they are assets to our department. Of course we can still collaborate on seminar, research, and other activities.



Math Faculty Assist with Science Olympiad

Science Olympiad is a national, non-profit organization dedicated to improving the quality of K-12 science education through participation in Science Olympiad Tournaments and incorporation of the Science Olympiad into classroom curriculum.

Science Olympiad competitions are like track meets, consisting of 23 individual and team events. Each year, events are updated to reflect the ever-changing nature of biology, earth science, chemistry, physics, computers, astronomy, engineering, and technology. By combining events from all disciplines, Science Olympiad encourages a wide cross-section of students to participate.

Students who participate in Science Olympiad are taught advanced science through active, hands-on participation. All events involve team work, group planning, and cooperation. There are now over 5,500 middle schools and high schools from all 50 states who participate in Science Olympiad.

The Department of Mathematics at Fort Hays State University has been actively involved in coordinating, organizing, and judging events for the past several years. Members of the MATH faculty were involved in the 2016 Regional Olympiad held on February 9 and 11. Soumya Bhoumik and Jeff Sadler judged Mission Possible for the high school students. Sarbari Mitra judged Write it Do It for middle school and high school students. Lanee Young and Judy Brummer judged It's About Time. Jeffery Solheim of CSICE judged Compute This. If you ever want to help with or observe a Science Olympiad competition, contact Lanee Young. You will enjoy the experience of watching these young minds at work.

New Faculty — Sarbari Mitra

I am Sarbari Mitra. I joined FHSU in 2014 fall as an instructor and then this year became an assistant professor. Just to make it clear, I have no relation with our President Dr. **Mirta** Martin (*pun intended*), except the fact that we are both awesome (*no pun intended*):P. I am from India, spent my childhood, girlhood and a part of my womanhood in Calcutta, one of the largest cities in India. Till 1911, Calcutta was the capital of India, and has been a pioneer city in Indian renaissance. It has long been known for its literary, artistic and revolutionary heritage, which is why it is better known as the "city of joy" (**City of Joy** by Dominique Lapierre). I got married to Soumya in 2012, and then moved to USA in 2013. Initially I came to Starkville, MS for two months, where Soumya was doing his Ph.D. After he finished his studies we then moved to Hays. Initially, it was difficult for me to be away from my family and friends, but gradually I started making new friends here in Hays. The opportunity of teaching at FHSU came to me as quite a surprise. Although at first I was a little reluctant to teach on-campus because of my language barrier, I thought it would be great to teach virtual courses. Soon, I realized that the only language that my students and I needed to communicate was the language of Mathematics, which is truly universal language in modern era. When the Assistant Professor position was offered to me, I didn't hesitate to accept this opportunity.



Mathematics was not my first choice...it was the "*only*" choice. I knew that I wanted to be in academia and only in mathematics. As a student, I never liked memorizing historical dates for the Civil War and, or complicated verb conjugation. But mathematics came to me more naturally. There is a simplicity and symmetry inherent in mathematics that can be considered beautiful. Math can unlock a world of wonder in the mundane. Nature is FULL of patterns! Fractals (shapes that constantly repeat within themselves) are found everywhere from broccoli to rivers to the veins in our bodies. The Fibonacci sequence (golden ratio) is found in sea shells at the beach, or flower petals. Rocks thrown in a pool will create perfectly shaped circles that behave in predictable ways. Mathematical formulas are used to describe wind and clouds, acceleration and deceleration of your car, the symmetry of flowers, etc. Understanding them is kind of like being able to see the matrix (I am sure you have watched that movie). Last but not the least, I realized that math is a perfect choice for a lazy person like me. You don't have to spend a lot of time memorizing stuff like other subjects. It's a one time investment and lifetime profit in return.

My first teacher in Mathematics was my elder sister, and then my father. It was very obvious to me and my family that I would pursue my higher studies in mathematics. The area of Discrete Mathematics always fascinated me, so I chose Graph Theory as my master's dissertation area and Cryptography during my PhD. I received my Doctoral degree from Indian Institute of Technology, Kharagpur on Wireless Sensor Networking, which is an application of Cryptography. Currently I am working in the area of graph theory with my husband. The type of problems I like to work on are Graph Labeling, Graph Coloring, Domination, Radio Labeling, etc. I love working on any mathematical problem or puzzle, as it helps me to unwind my mind, and reenergize for the daily life.



Besides solving mathematical problem, I love to spend my leisure time watching thriller movies, reading books, listening to soft music, stitching and obviously travelling with my family. Reading novels at bed time is my childhood habit.

Faculty and Students Participate in Human Calculator Workshop



Hongbiao Zeng, Keith Dreiling, Nicole Fisher, Scott Flansburg aka "The Human Calculator," Thomas Broxterman, Lanee Young, and Bill Weber.

"The Human Calculator," Scott Flansburg, made an appearance in Oakley, Kansas on February 24 as part of a series of workshops put together by Northwest Kansas Educational Service Center (NKESC). Fort Hays Mathematics and Computer Science Faculty, Hongbiao Zeng, Keith Dreiling, Lanee Young, and Bill Weber, and FHSU Mathematics students Nicole Fisher and Thomas Broxterman conducted sessions for the more than 80 gifted students who attended the day's events.

Flansburg is a world famous mathematical genius who holds the Guinness Book of World Records for the fastest mental computation. When setting the record, Scott correctly added a randomly selected two-digit number (38) to itself 36 times in 15 seconds without the use of a calculator. While in Oakley, Dr. Weber could barely keep up on a calculator while Flansburg demonstrated this feat. "The Human Calculator" is a best selling author and has appeared on "Oprah," "The Tonight Show with Jay Leno," "Dateline NBC," "Good Morning America," and numerous other television programs. His History Channel show, "The Human Calculator" began this spring.

The FHSU Faculty, FHSU students, and Mr. Flansburg spent the day in Oakley working with teachers and students to enhance their number sense and appreciation of mathematics. While "The Human Calculator" presented ideas for teachers to help their students calculate rapidly and accurately, and learn new and exciting ways to play with numbers, the FHSU faculty rotated sessions with the students. Dr. Zeng taught a problem solving session. Dr. Weber introduced the students to cryptography. Those students attending Dr. Young's session solved a murder mystery by applying Newton's Law of Cooling while Dr. Dreiling enlightened everyone with some mathematical magic.

After attending the event Thomas Broxterman, math education student at FHSU, said "The Human Calculator's" "enthusiasm is unreal. I hope to use his ideas in my classroom to spark students' interest for math and create a positive and fun atmosphere for learning." All students (young and old) enjoyed the presentation by "The Human Calculator". We increased our appreciation of mathematics and gained some advice to be used for the rest of our lives as Mr. Flansburg encouraged everyone to find something you love and something you are good and pursue it.



New Faculty — Lisa Colwell

I grew up on a farm in Graham County before coming to Fort Hays State University where I earned both my bachelor's and master's degrees. I taught middle school and high school mathematics in Victoria for 13 years, then taught at Hays High School for 20 years. I earned my National Board Certification in Adolescent and Young Adult Mathematics from the National Board of Professional Teaching Standards in 2002 and renewed my certification in 2012. I have been an adjunct instructor at FHSU in the Transition to Teaching program for 6 years before joining the Math Department as a full-time virtual instructor.

My husband, Kent, and I met at FHSU and have been married for 35 years. We have two grown sons who are also proud Tiger alumni. In my free time I enjoy cooking, traveling, and cheering on the Tigers and the Kansas City Royals.

2015 Faculty Scholarly Activities (when they aren't teaching)

The Mathematics Faculty are actively involved in original research, publication, problem solving and proposing. The following is a partial list of scholarly activities by the faculty in 2015.

- ∞ Several faculty worked with KAMS students on research projects.
- ∞ Various seminar presentations were given by faculty at the weekly seminar. .
- ∞ Presentations at the Kansas Section of Mathematics Association of America, Fort Scott, KS March 2015.
- ∞ Various presentations at Kansas Association of Teachers of Mathematics Conference, Maize KS October 2015.
- ∞ Engineering Our Future. Partnership Grant with Westar Energy and USD 501 Topeka. Awarded \$149,027. 2015.
- ∞ Read4Respect service-learning project: Motivating and engaging at-risk readers. *Advocate*, (23)1, 16-24.
- ∞ Trisecting an Angle Using Mechanical Means. *Convergence*. Mathematical Association of America.
- ∞ Poverty and Bullying: Healing Through Children's Literature.
- ∞ Coordinate MACS Problem Solving Sessions
- ∞ Served as Reviewer for RCML Conference 2016
- ∞ The Return of Toy Pigs to the Math Classroom, 2015.
- ∞ *Designing an Experiment in Statistics Class*. KATM Bulletin. February 2015.
- ∞ Presented on Methods of Teaching Statistics at Research Council of Learning Mathematics, Las Vegas, 2015
- ∞ Continued work on awarded grant from NSF for the Noyce Scholarship Program.
- ∞ Developed course structure, researched text options, and developed course materials for the department's new MATH 301 Introduction to Proof course
- ∞ Led Standard 5 team in development and implementation of data retreat sessions relative to COE new CAEP accreditation; the data retreat frameworks developed and implemented, including the manner in which data is being analyzed, led to CAEP national conference presentation in Spring 2015
- ∞ Assisted in continuing development /evaluation of an online entry and upgraded grading/reporting software for Math Relays
- ∞ Numerous articles and publications on Graceful Labeling
- ∞ Received Summer Research Grant for Faculty (FHSU)
- ∞ Solution to problem 1053, *College Mathematics Journal*



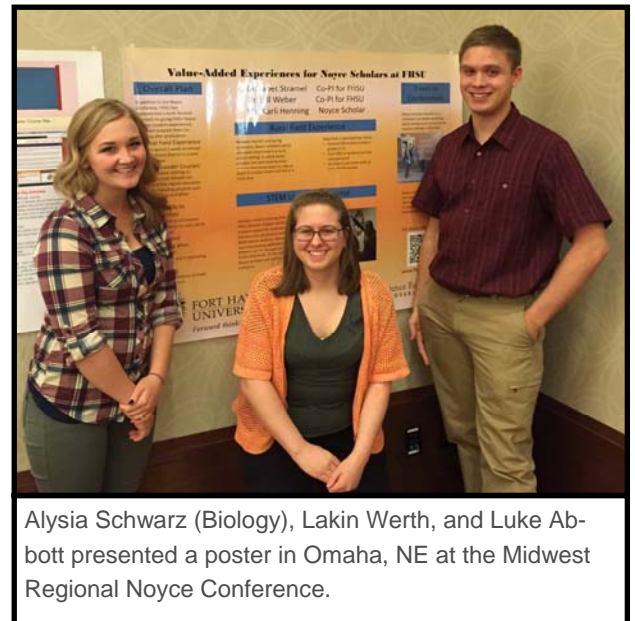
FHSU Awards 10 Math Majors over \$110,000 in NSF Grants

During the 2015-16 academic year, 10 FHSU math majors received scholarship dollars totaling \$114,000 as part of a National Science Foundation (NSF) grant aimed at recruiting the most talented math and science students to become teachers after graduation. The Noyce Teacher-Leaders for Western Kansas grant is currently in year 4 of its 5 year cycle, and will continue to award scholarship dollars for 1 more year.

Luke Abbott (Great Bend senior), Thomas Broxterman (Hoyt senior via Allen CCC), Elaina Haberer (Sylvan Grove senior), Nicole Fischer (Leoti senior via Wichita St), Sydney Heimerman (Hutchinson senior), Nicole Maurer (Udall senior via Cowley CCC), Bailey Pfortmiller (Natoma senior via Kansas St), Will Pingsterhaus (Cimarron senior via Dodge City CC), Lakin Werth (Hays senior), and Brianna Wooldridge (Hays senior) were the 2015-16 awardees. All are pursuing the teaching concentration, 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 NSF. All are progressing through their coursework, and we look forward to their graduation, so that we will have 10 excellent new math teachers in the field!

In addition to receiving scholarship money, these students 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. Students also participated in a week-long rural field experience in early January to immerse themselves within rural schools in southwestern Kansas. The students were very excited after this experience, and must have made quite a positive impression on their mentor teachers, as some of them have been invited back to southwestern Kansas to complete their student teaching experience! Finally, in addition to the scholarship money and specialized coursework, all the students participated in professional travel. Along with many of them attending the annual KATM conference, 2 of the awardees traveled to Omaha, NE with Dr. Weber to attend the regional Noyce conference, and 6 of the awardees will travel to San Francisco, CA for the NCTM National Conference in April. These “out-of-classroom” experiences will give the Noyce Scholars a leg-up on their competition as they seek jobs after graduation.

Although our current Noyce grant is in the final stages, we are planning to apply for another 5-year grant. If you know of any students who might be excellent future math or science teachers, please contact Bill Weber (bweber@fhsu.edu).... he'd be happy to visit with them about these (and other) scholarship opportunities!



Alysia Schwarz (Biology), Lakin Werth, and Luke Abbott presented a poster in Omaha, NE at the Midwest Regional Noyce Conference.

2015 Undergraduate Degrees

Aidan Winblad — BS Mathematics — Computational Physicist at Enginility Corporation — San Antonio, TX

Steiner Scott — BS Mathematics — Bartending in Hays, KS

Amanda Barnum — BS Mathematics — Teaching in Meade, KS

Erin Deenihan — BS Mathematics — Teaching in Hays, KS

Kyle Leroy — BS Mathematics — teaching at Larned High School, Larned, KS

Andrew Shaver — BS Mathematics — Teaching in Aurora, CO

Jamie Spoonemore — BS Mathematics — Teaching in Stafford, KS.

Royal Yonkers — BS Mathematics — Substitute teaching in Nebraska

THANK YOU FOR YOUR SUPPORT

The Department of Mathematics 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 . 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 Mathematics Department as recipient. We also appreciate the employers who matched your contributions.

Individuals or companies contributing to the Spring 2015 campus drive or Fall 2015 Tiger Call are:

Joan Albers, Nolan and Geralyn Allen, Patrick and Keri Applequist, James Beard, Gary and Bernice Bell, Elton and Wendy Beougher, Charles and Charlotte Bigler, Duane Blaesi, Rex and Beverly Blanding, Susan Bozeman, Jerry and Michelle Bremerkamp, Stephen and Judy Brummer, Ron and Bernice Capps, Robert and Nancy Chaffin, Kent and Lisa Colwell, Willis and Alma Crabtree, Craig and Anita Curtis, Thomas and Emily Decker, Mary Dinkel, Scott Claassen and Francine Dreiling, Keith and Pam Dreiling, Kay and Mildred Dundas, Dennis and Diana Echard, Thomas Edgett, Carolyn Ehr, Casey Eichenauer, Ken Eichman, Dan and Martha Eining, LeAnn Eltze, FHSU Math Dept, Kathryn Fritz, Rodney and Marcia Giess, Stan and Neva Griffin, Margaret Hanshew, Al and Marilyn Herren, Tom and Francine Hestermann, Jerrod and Jess Hofaker, Kent Huffman, Rodney and Karen Hunley, Idea Center, Roger and Teresa James, Justin and Amy Johnson, Loyal and Wanda Johnson, Regina Johnson, Brad Kearn, Cheryl Kessler, Vernon and Virginia Kisner, Mike and Carmen LaBarge, Darrell and Sheila Latham, Bob and Kim Lee, Rudy and Maralyn Legleiter, Don and Linda Lesovsky, Aaron Lessor, Max and Thelma Liggett, James and Judy Loesch, Thomas Lonnon, Paul and Pat Luea, Donald Mai, Blaine and Lori Maier, Jim and Shirley Malcolm, Reza Marefat, Dan and Pamela May, Mason May, Joe and Jennifer McLeland, Perry and Maria Mick, Merrill Milham, Regina Miller, Ronald and Debbie Miller, Bob and Anel Minneman, Donald Molleker, Sean Moreland, Wayne and Alberta Neel, Sylvia Nelson, Weeden and Rosalie Nichols, Larry and Celia Nicholson, Geoffrey Peter, Kale Plush, Larry and Darlene Plymell, Roger and Ruth Pruitt, Mohammad and Seddigheh Riazi-Kermani, Richard and Sharon Ruder, Jeff and Lori Sadler, Ron and Cathy Sandstrom, Robert and Christine Sauber, Dan and Mary Kay Schippers, Dennis and Gaylene Shank, James and Lida Sharp, Gail Stanley, Ralph and Mary Steinlage, Frank and Sondra Stickney, David and Betty Taylor, Jon and Carrie Tholstrup, Mike and Connie Tholstrup, K & L Trimmer Foundation, Ellen Veed, Charles and Reta Votaw, Bill and Tiffany Weber, WFLA Lodge #3 Crete, Doug and Shelley Whisler, Joe and Sandra Whitley, Marilynn Wilson, Rex and Margaret Wilson, Leroy and Sharon Winklepleck, Lori Wittrock, Lanee Young, Rick and Martha Zakrzewski, Hongbiao and Michelle Zeng

Apologies are extended if someone's name was inadvertently let 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 majors, please let us know by sending us their names.

Thank you Merrill E. Milham, ('60) for your generous donation for the Toalson, Etter and Marshall Scholarships!!!

MATH FITNESS CAMP

Students entering grades 5-7

June 13-16 9 AM to Noon

FHSU Campus — Rarick Hall 301

\$50 per camper

Have fun with your friends exploring the mathematical applications to health and fitness.

Register [HERE](#)

SUMMER 2016

MATH 010 — Intermediate Algebra — on-line

MATH 110 — College Algebra — on-line

MATH 250 — Elements of Statistics — on-line

MATH 331 — Calculus Methods — on-line

Math 673 — Problems Course — on-campus & on-line

Retired Faculty News

Ron Sandstrom

Hello fellow mathematicians and friends from crazy Ron. Last year I mentioned that I got so bored that I started substituting in our local Middle/High schools. In May the La Crosse district had a late resignation from the only mathematics teacher. With no applicants and no one on the horizon I allowed the district to talk me into teaching high school mathematics, under a STEM license, for one year. I am/was out of my comfort zone; hopefully, there will be applicant for the job for next year. But, I have to say that most days I have enjoyed myself. That did not stop us from making a trip to Prague and the surrounding area during the summer. I was able to visit the small, tree-surrounded, mountain village from which my maternal grandparents had emigrated. Coming to flat, tree-less, central Kansas must have been quite a shock to their emotional state.

Erik and family are still in Havre, Montana. Jessica and family are still in Hutchinson. Cathy had back surgery in November from which she has completely recovered and the pain is gone. Otherwise, our health is good and we look forward to a couple more overseas trips. It does not look like Antarctica is going to be on our agenda—just too far. We had asked the kids to go to the beach over Christmas break; both said let's go skiing. So we spent a week in western Colorado with Cathy's brother at Christmas. Then on to Park City, Utah for a week with the kids skiing. I also went snowmobiling---minus 15 degrees at 40 mph is really, really cold folks. To top that off we then spent 2 weeks in Hawaii with that same brother and Cathy's twin sister. Of course, we had a good time. Unfortunately, or fortunately, depending on who's talking, Dr. Young substituted for me. Now I have to live up to or down to all of the "stuff" she told them about me.

Elton Beougher

OK. This is going to be a proud granddad essay. You are permitted to just skip over it, if you don't want to hear bragging about grandkids. I just spent three delightful days with my son and his family. They have 6 children, 3 biological and 3 adopted. The biological are all blond, blue-eyed girls. The adopted are from Haiti and are black-skinned and dark-eyed, two boys and one girl. The group makes for a very interesting picture when they are all together. After the 3 girls were born my son and his wife decided to get a boy by adoption. You probably have heard that adoptions take a long time to process. Not in their case. Since the earthquake had occurred in Haiti, there was a concerted effort to get children quickly out of the country who were in orphanages and their wait was not extremely long. Their first son, Luke, was adopted about 5 years ago, at age 7, by a woman who had connections in Haiti. She would travel there and adopt several children, bring them to the States where they were re-adopted by couples seeking a child. After a short time they received word that Luke's little sister and his best friend were also available. So after much prayer and seeking advice they decided to adopt those two. They didn't have to long too wait. In fact, they received a phone call late one night that their children would be in Miami early the next morning! An acquaintance of theirs flew all 6 of their family to Miami that night in his private jet and they met their new family members and brought them home. They are Josie and Levi. So, now they were a family of 8, with two teen-aged girls, 2 boys and a girl of equal age of 8, and a girl of age 6. Quite a population explosion.

The adopted kids came to them speaking Creole (a French-native dialect) and were extremely mal-nourished. We have learned that the conditions in the orphanage were of minimal care and sustenance. One positive was that the kids were well-trained to carry out chores. I suspect that the orphanage was over-crowded and under-staffed and that not much food was available and the children were taught to take responsibility for themselves. They obeyed the adults, were well-behaved and able to take care of themselves. On the other hand I believe they learned to share their meager food with others because when they first came to their new family they would offer their food to us around the table. Quite a contrast with many children of their ages who are born into the typical American family. Also, they were amazed to learn that they could have all they wanted to eat at meal-time. Today they are well-adjusted to living here and I give credit to my son and his wife for that. They are still well-behaved and take responsibility to carry out their assigned tasks at their farm home. Each one has daily chores to do and they complete those with no complaining. They are home-schooled and take responsibility to complete their daily lessons with minimal supervision and resistance. My son's household is an interesting place to visit. Can you imagine 4 children, 3 of which are the same age of 12 years and one is 9, almost 10?

The two older daughters (ages 24 and 21) are both married and one has presented me with my first great-grandchild, now 9 months old. The 4 children still at home are all involved in sports, right now basketball and gymnastics. They all have more athletic ability than I did at their ages! It's a joy to be with them and be the proud granddad. Oh, by the way, I also have two other grandchildren, my daughter's children, who are adults and out making their mark in the world. If you aren't too sickened by this bragging, tune in next issue and I will extoll their virtues. If you made it this far in this narrative, thank you for your indulgence.

Ruth Pruitt

It has been an uneventful year, which in some respects, is good.

Darlene Plymell

I don't really have anything newsworthy to report. I mostly spend my time traveling, spending time with my grandchildren, reading, knitting, and enjoying life. When the weather is bad, I enjoy looking out the window and staying warm.

Charles Votaw

As you can see, we made it through another year. We have no trips or projects to tell about, but we are in reasonably good health and wish everybody reading this a great year.

Rosalie Nichols

We have been extremely busy. Since my husband, Weeden, became president of his Scottish clan in the United States this past June, we are traveling extensively to Scottish Festivals throughout the country. We continue to play duplicate bridge, and we are enjoying the sunshine and weather in Las Cruces, NM.

Mary Kay Schippers

The Chinese Zodiac may have called 2015 The Year of the Sheep, but for me, 2015 was The Year of the Airplane. I am now on a first-name basis with the manager of the Hays Airport (Natalie) and I can order my favorite meal at my favorite restaurant in the Denver airport without a menu (Gourmet grilled cheese sandwich with a cup of tomato basil soup. Yum! Add a glass of merlot and a John Grisham novel and a 3-hour layover suddenly becomes quite tolerable.)

Why the sudden interest in air flight, you ask? I can sum it up in one word: Grandbabies. Jared and Marli brought baby Vivian into the world on May 11 and despite our trips to Rapid City and their trip to Kansas, I still don't feel like I see her enough. But as a grandparent, is it ever enough? I mean, really?

Then of course, Brent and Sasha's four are growing up waaaay too fast, so I try to spend as much time with them as I can before they no longer want to spend time with their Grammy. (I'm not naïve. It happens. It's just another fact of life.) During most of 2015, that meant flying to St. Louis. But a career advancement took Brent and his family to Phoenix in November, so I am now a regular visitor to the Phoenix airport also.

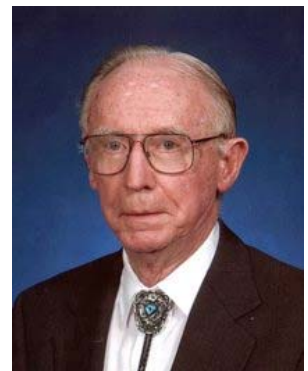
In addition to that my sisters, along with our husbands, visited Charleston in October on our latest "sister trip".

Larry Dryden

Laurence Albert Dryden, 91, passed away on Sunday, July 12, 2015 at the Good Samaritan Society Nursing Home in Ellis, Kansas.

He was born February 5, 1924 in Paris Crossing, IN, to Choral and Mary Alice (Capell) Dryden. He married Anita Klemm in 1976 in Salina, KS. She preceded him in death in December of 2010.

Mr. Dryden was a 1942 graduate of the Vernon High School in Vernon, IN and served in the U.S. Army Air Corps from October 28, 1942 to January 8, 1946. He graduated from Ohio State University in 1949 and received his Master's Degree from Fort Hays Kansas State College (currently Fort Hays State University) and taught mathematics there for 33 years. He retired from teaching in 1988. He was a member of the Methodist Church, Lion's Club, and a 50 year member of the Masonic Lodge, all in Hays, KS. His enjoyments were sleeping and pheasant hunting.



He is survived by two step sons – David (Paula) Freisner of Galveston, TX, and Lynn (Jody) Freisner of Omaha, NE; one sister – Mary Alice (Van) York of Seattle, WA; 2 step grandchildren and 3 step great grandchildren; and a nephew and care giver – Gene (Shirley) Hook of North Vernon, IN. He was preceded in death by his parents; his wife – Anita; two brothers – Russell Thomas and Robert Capell Dryden; and two sisters – Margaret Hook and Hope Lucille Parker.

Scholarship Awards for 2015-2016

by Jeff Sadler

Financial support assisted numerous FHSU Mathematics Department students as more than \$129,900 in scholarship dollars were awarded during this current academic year. The scholarships were funded from various sources, including gifts of alumni and friends of the department, the National Science Foundation Noyce grants, and Fort Hays State University's Academic Opportunity Awards. The department continues to be blessed by the amount of scholarship dollars available for supporting our student's higher education.

Eighteen dedicated students were awarded \$16,900 from the prestigious named-scholarships in the Mathematics Department. These scholarships are financed through both endowed dollars and newly received designated contributions, a portion coming from those who "fed the Tiger" during the annual TigerCall Telethon. The following FHSU students received both the deserved recognition and related awards:

Luke Abbott (Great Bend)—E. Eltze Memorial \$800 Scholarship
Danielle Nay (Bennington)—Ron and Cathy Sandstrom \$1000 Scholarship
Clay Kear (Colwich)—Ruth and Roger Pruitt \$800 Scholarship
Brett Chrisler (Hays)—P. Miller Math/Physics \$1,000 Scholarship
Samuel DeVore (Lyons)—Toalson \$1,500 Scholarship
Tyler Hinkel (Omaha, NE)—Dr. Caroline Ehr \$600 Scholarship
Mallory Diederich (Topeka)—Tebo Family \$1,200 Scholarship
Brianna Wooldridge (Hays)—Moore Family \$1,000 Scholarship
Elle Stein (Spearville)—Moore Family \$1,000 Scholarship
Jared Mick (Ellis)—Moore Family \$1,000 Scholarship
Will Pingsterhaus (Cimarron)—E.E. and L. Colyer Memorial \$1,000 Scholarship
Cinthia Rodriguez (Kansas City)—E. Veed \$1,000 Scholarship
Cinthia Rodriguez (Kansas City)—Jimmy Rice Memorial \$500 Scholarship
Kellen Griffin (Hays)—Denio \$1,200 Scholarship
Kenton Lindsey (Goddard)—O.E. and P. Etter \$750 Scholarship
Corey Dinkel (Victoria)—Marshall \$600 Scholarship
Tyler Masters (Natoma)—C.W. Lowry \$600 Scholarship
Hailey Davey (Evergreen, CO)—Baxter \$600 Scholarship
Patrick Duensing (Tecumseh)—Frances E Shockley \$750 Scholarship

The department also had up five scholarships funded by Kerry and Dorothy Bahl. Although no specific restriction or direction on the expenditure of these dollars was given by the Bahl's, the department faculty continued to direct up to \$5,000 toward student scholarships. These scholarships were designated primarily toward deserving transfer students. The following department students were awarded scholarships from these contributions:

Cheyenne Toler (Colorado Springs, CO)—\$2,000 Scholarship
Chelsea Zimmerman (Hays)—\$750 Scholarship

Also, thanks to the generosity of the TigerCall supporters, the department was able to award \$4,100 in Mathematics Departmental Scholarships, the second category of awards. This year's department scholarships ranging from \$650 to \$700 were awarded to:

Keri Asche (Buhler)
Matthew McWithey (Winfield)
Jared Hass (Superior, NE)
Kevin Jones (Cleveland, TN)
Edgar Vallejo (Hays)
Aaron Molleker (Marion)



Cinthia Rodriguez, Earl Watkins, Matthew McWithey, and Aidan Winblad enjoy the Scholarship Reception

In its ninth year, the Academic Opportunity Awards (AOA) continued to be a valuable scholarship for incoming freshmen to the Mathematics Department. This final category of scholarship provides a two-tier structure with award amounts of either \$900 or \$500. The award and amount was based upon a student's interest in pursuing a degree within mathematics as well as upon the student's high school academic achievement and ACT/SAT scores. This past year, eleven AOA scholarships worth \$8,200 were offered to students interested in beginning a degree program in mathematics at FHSU. From this group of prospective students, three began classes in Fall 2015 for a total of \$2,300 in scholarships. Those students included:

Nicolas Schmidt (Hays)
Anthony Cooper (Cimarron)
Rachel Leet (Keenesburg, CO)

Finally, six department students received scholarships from the Noyce Scholarship Program (co-directed by the Mathematics Department's 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 read the 2013-2014 MACS Newsletter cover story detailing the Noyce Scholarship Program to find more information about these unique NSF grant funded scholarships. After going through a rigorous application process, these students received \$98,000 in scholarships:

Luke Abbott (Great Bend)—\$12,000 Noyce Scholarship
Sydney Lower (Hutchinson)—\$12,000 Noyce Scholarship
Nicole Maurer (Udall)—\$12,000 Noyce Scholarship
Will Pingsterhaus (Cimarron)—\$12,000 Noyce Scholarship
Lakin Werth (Hays)—\$12,000 Noyce Scholarship
Bailey Pfortmiller (Natoma)—\$12,000 Noyce Scholarship
Nicole Fischer (Leoti)—\$12,000 Noyce Scholarship
Brianna Wooldridge (Hays)—\$12,000 Noyce Scholarship
Elaina Haberer (Luray)—\$12,000 Noyce Scholarship

Jared Mick (Ellis)—\$2,000 SEMI-Steffen Scholarship

Students awarded scholarships frequently express their appreciation for the financial assistance received, especially after realizing the support came from the donations by friends of the department. If interested in contributing either new or continued funds to any of the above scholarships area, please do so by sending a check to the Mathematics Department payable to the FHSU Foundation—specify the mathematics scholarship fund of interest on the memo line.

Additionally, the Mathematics Department asks alum and other friends for assistance in encouraging any local high school students with an interest or talent in mathematics or mathematics education toward higher education at FHSU. The department has a goal to consistently have at least thirty well-prepared freshman begin higher education in mathematics and computer science at FHSU during the fall semester after their high school graduation. To have any hope of reaching this goal, the department needs the help of its friends in various communities to connect with such students. If there are questions about departmental scholarships or if desiring to help identify and/or recruit possible future mathematics students, contact Jeff Sadler at jsadler@fhsu.edu or (785)-628-4416.



2015 Scholarship Recipients