2013/2014 is a big year for the SSU Department of Mathematics and Statistics. As you can see from who is writing this greeting, the department got a new chair. I am succeeding Sam Brannen who served as department chair from 2009 to 2013. Under his leadership the department weathered the worst of the California budget crisis and we redesigned our programs to better serve our students. Thank you, Sam, for keeping us afloat through these difficult times and helping us to continue in the tradition of providing a welcoming and supportive place for our students and friends alike.

The biggest change of the year comes from three retirements of long-term faculty members: Dr. Edie Mendez retired in Fall 2013 and Drs. Rick Luttmann and Bill Barnier will retire effective Spring 2014. Between the three of them they have 104 years of service to the department. We will celebrate (and cry a little) at an open house retirement party on April 25, 2014 from 4-7 pm at Prelude at the Green Music Center. It is impossible to imagine what the department will look like without Edie, Rick and Bill and we hope that they will continue to be part of our community for many years!

While we won’t be able to replace the faculty we are losing, we are starting to hire new and enthusiastic mathematicians to join our department. We are thrilled to welcome Dr. Martha Shott as an assistant professor in Fall 2014. Martha received her Ph.D in applied mathematics from UC Davis in 2011 and has been teaching for the department for the last two years as a lecturer. Her research field is in traffic flow and she has already started to involve students in her research over the past couple of years. We are looking forward to building a growing applied math concentration with her appointment.

Over the last few years we also have seen some valuable faculty members leave our department. Cora Neal transitioned to a job at Wells Fargo in San Francisco but stays connected to the department by teaching occasional courses in stats consulting and giving talks at the M*A*T*H colloquium. Scott Nickleach joined his wife in Atlanta, who took a job at Emory University. Julie Bonds followed her family to Portland, where she now teaches at the community college and Ai-Chu Wu retired to take on exciting new projects, like being a grandma. We were sorry to see all of them leave but wish them the best for their futures.

The number of math and stats majors has increased significantly recently. The new bi-disciplinary concentration that combines math with another field is very popular. It prepares students well for an increasingly multi-disciplinary work environment. We now have more than 170 majors! Our students are very active socially and academically. Throughout the newsletter you can read about students participating in competitions, presenting at conferences, organizing fundraising events and much more. We hope that with some financial help from our alumni we can support more of our students with opportunities such as conducting research with faculty and traveling to conferences.

We’d love to hear how you are doing, so just stop by the department some time or send us a quick note.

T h e  M a t h  a n d  S t a t s  D e p a r t m e n t  F a c e b o o k  p a g e  h a s  2 3 1  f r i e n d s .  H e l p  u s  i n c r e a s e  t h a t  n u m b e r  a n d  s t a y  i n  c o n t a c t  b y  f r i e n d i n g  u s :  w w w . f a c e b o o k . c o m / m a t h a n d s t a t
With a new high of over 170 current math and stats majors, the Department is excited to present a series of curriculum changes to our Bachelor degrees that have long been in the works. Starting Fall 2014, these changes should help students streamline their paths to graduation and help us run the upper-division classes that sometimes get canceled due to low enrollment. We faculty have been working very hard to design the changes and get them passed through University governance over the last several years.

Perhaps the most exciting change is that Math 220, which will now be called Reasoning and Proof, will become a 4 unit GE course satisfying area A3 Critical Thinking. Ben Ford will be teaching it in its new format in the Fall. We’re adding an analysis of different kinds of reasoning including statistical reasoning, and evaluating reasoning in real-world media.

Almost all of our upper division math classes are moving from 3 to 4 units, and we’ve restructured required classes for our different majors. One hoped-for consequence of the subsequent change in the course rotation schedule is that our senior level classes such as Math 420 (Modern Algebra II) or Math 460 (formerly 360, Complex Analysis) will run more dependably because our class sizes will be larger. The modernized curriculum is deeper. We’ve updated the content of the Secondary Track major to align better with the Common Core State Standards. Also many of the courses will include more project-based learning.

If you are currently a math major, don’t worry that these new changes will make it harder to graduate. But be sure to see your advisor – in case we need to make adjustments to your plans so that you can graduate on time. If anything, you’ll find your path to graduation will be smoother.

Math & Stats Clubs and Pi Mu Epsilon Updates

With an increase in the number of Math and Stats majors, involvement in the Math and Stats clubs along with involvement in the Pi Mu Epsilon organization has expanded in the 2013-2014 academic year. This began with active tabling and recruitment during the summer, and then continued through the launch of the fall semester with a Welcome Picnic on the commencement lawn. Following tradition, the Math Club conducted a very successful fundraiser at Halloween, selling painted pumpkins created by our very talented Math & Stats Club members. Concluding the fall semester, Martine Miller E, Stats Club VP, organized a Planetarium Show at Santa Rosa Junior College for all student organizations in the School of Science and Technology (SST), which helped the clubs achieve their central goal of building community and strengthening interaction between all students in SST.

Mid-fall semester, the groups coordinated a Pi Mu Epsilon Applied Math Conference, patterned from the first student-run conference that took place the prior year. Included were talks on sucker bets and probability paradoxes by Michael Eurgubian, the mating habits and sex determination in crocodiles by Angela Gallegos, student presentations, a poster session and graduate school information from San Francisco State and UC Davis. New this year was a career panel that included Nick Franceschine as an actuary and Gloria Hurtado as a middle school teacher. Central to Pi Mu Epsilon’s purpose, this conference promoted scholarship in mathematics and the mathematical sciences.

The spring semester included just as many engaging, community-building activities as the fall. The Math and Stats clubs participated in the fourth annual Geek Week, a friendly competition among all clubs in SST for the Darwin Cup. During Geek Week there was the Pi Day event, which was expanded. This year suffered from some rounding error in the approximations of pi, so it was on March 13th. It included professors from other departments in the School of Science and Technology, as well as student leaders from other clubs and some of the Associated Students candidates. There was also raffles and other fun games and activities to celebrate one of the most popular irrational numbers in mathematics.
Each February, the Consortium for Mathematics and Its Applications (COMAP) hosts an international competition for undergraduate students. The Mathematical Contest in Modeling (MCM) challenges teams of up to three students to research, analyze, and report solutions to open-ended problems in applied mathematics over the course of four intensive days.

In the 2013 MCM, Sonoma State had two teams participate under advisor Dr. Sunil Tiwari. Rachel (Ré) Bayless, Miguel Cardoso, and Robin Decker received the Meritorious designation for their proposed strategy to meet the water needs of the United States in an efficient and cost-effective way. The team considered the following five strategies: water desalination, pipeline infrastructure, alternative cooling systems for thermoelectric power, water reclamation, and water-use-efficient genetically engineered crops. By modeling the population of the United States as logistic with dynamic carrying capacity to reflect the choice of water technology used, the students were able to evaluate each strategy.

The second team in 2013, made up of Michael Harris, Hunter Mills, and David Tran, received the Successful Participant designation for designing a brownie pan of fixed area $A$ in order to maximize the number of pans that can fit in a conventional oven, and to optimize the distribution of heat across each pan. The team set up an optimization problem based on super-ellipses, and proposed a modular pan design that could snap together to fit any oven size.

Three teams represented Sonoma State in the MCM in 2014 under advisor Dr. Martha Shott. Robin Decker, Miguel Cardoso, and Hunter Mills formed a team of returning participants from the 2013 contest; Kyle Kucker, Martine Miller E, and Sarah Whitaker participated for the first time; and Amandeep Gill and Sean Smith rounded out the list of new participants with a two-man team.

Two teams chose to evaluate the “Keep-Right-Except-to-Pass” rule of vehicular traffic. In order to approach this problem, Cardoso, Decker, and Mills used models adapted from physics, economics, and epidemiology, while Kucker, Miller E, and Whitaker used microscopic models based on safety constraints as well as people’s willingness to obey traffic laws. Both teams incorporated statistical techniques to evaluate their results.

Gill and Smith addressed the “College Coaching Legends” problem. They were tasked with determining a list of the top 100 college coaches of all time in a sport of their choice. Gill and Smith looked at college football coaches, and designed an algorithm to rank them based on factors such as numbers of years spent coaching, performance of the team during the coach’s tenure versus the team’s global performance, and performance in more crucial games, such as championships and bowl games.

All three 2014 teams presented their papers as part of the MAA Golden Section meeting on February 22, 2014. Results for the 2014 MCM will be available online by April 29th.
In honor of Dr. Rick Luttmann’s retirement, the Math and Stats Club hosted one last Dr. Luttmann Fashion Show. Dr. Luttmann modelled a few of his favorite fashions, which are shown. Between each outfit the clubs produced talent performances, skits, and games. Jacob Holman, Math Club President, performed “Part of Your World” on baritone while Jennifer Ganeles, Math Club VP, sang an a cappella version of “My Funny Valentine.” Faculty parodies included a skit where graduating senior and Stats Club VP Martine Miller E portrayed Dr. Susan Herring and Holman portrayed Dr. Jerry Morris. Dr. Herring and Professor Elizabeth Giuliani hosted Mathematical Family Feud, a battle between two teams, math and stats majors and non-math and stats majors. Graduating senior Rachael Staudt was the MC for the event, filling up interludes with quotes from professors and math textbooks. She also read a few pieces of math poetry. The Final Luttmann Fashion Show was an amazing success, both in terms of fundraising and the fun experience for all. If you need convincing, look no further than the final paragraph of Stuart Courtney’s article on the event in the Sonoma State Star: “Looking for a great time? Then find out where the math and stats people are hanging out and party down with them.”
There have been three State of Jefferson Mathematical Congresses since the last Newsletter in Spring 2011. As usual the Sonoma State Mathematics Department sent large groups of faculty and student participants to enjoy each of these three Congresses.

The Congresses of October 2011 and October 2012 were held as usual at Dry Creek Group Campground at Whiskeytown Lake near Redding. However, just days before the 2013 Congress was to be held, the Republicans in Congress shut down the Federal government – as you probably recall. Since Whiskeytown Lake National Recreation Area is part of the National Park Service, it suddenly became impossible to hold the Congress there. As a last minute substitute, organizers chose Prairie Creek Redwoods State Park, near the Pacific Coast between Arcata and Crescent City. This park is quite lovely, with many recreational opportunities nearby, and lots of wildlife. It even has an amphitheater where we held lectures – a luxury compared to hanging a chalk board between two trees as Whiskeytown Lake. The only disadvantage is that they have no group rates, so it was quite expensive to rent 6 to 8 campsites for two nights and pay also for extra cars.

The organizers expect the Congress to return to Dry Creek campground at Whiskeytown Lake in future years. The Park Service announcement that it is closing the Dry Creek Campground due to the “sequester” has been rescinded. This year’s Congress will be held on 3-5 October 2014. All are welcome.

The Fortieth Congress was held September 30 – October 2, 2011, and included the following program:

- The Apportionment Problem. Rick Luttmann, Sonoma State University.

The Forty-First Congress was held October 5-7, 2012, and included the following program:

- An Alternate View of Finding Eigenvalues. Gregg Waterman, Oregon Institute of Technology.
- Bifurcations in the Dynamics of Student Attitudes toward Undergraduate Mathematics Class. Zaur Birkaliev, Chico State University.

The Forty-Second Congress was held October 4-6, 2013, and included the following program:

- Mathematical Creativity: If you want to get there, don’t start from here. David Scott, University of Puget Sound.

The State of Jefferson never became a political reality, but it was once seriously contemplated by the residents of southern Oregon and northern California, who felt neglected by their respective state governments in Salem and Sacramento. The idea gained popularity through the 1920’s and ’30’s, but plans fell apart when the United States entered World War II.

In 1972 the mathematicians of southern Oregon and northern California, feeling neglected by the professional associations in more populous parts of their respective states, organized what they grandly called the “State of Jefferson Mathematical Congress”. In keeping with the character of the region, the Congresses are held at campgrounds. The first was held near Weaverville in the Trinity Alps and the rest (through 2012) at Whiskeytown Lake. They were held on May weekends for many years, but switched to the first weekend of October in 1997.
For the new 5-year phase of LSAMP (Louis Stokes Alliance for Minority Participation), Sam Brannen was elected to the Program Oversight Committee for the statewide CSU-LSAMP program.

Sharon Cabaniss continues her efforts to increase diversity on campus. One of the latest activities just took place in March and April—a series of “Women Celebrating Science” speaking events during Women’s History Month. She is also a member of the Academic Senate Diversity Subcommittee and is the School of Science and Technology representative to the President’s Diversity Council.

Jean Bee Chan is currently visiting Shanghai, China (Spring, 2014) to study Mandarin and current Chinese culture, meet authors of WW II history books, and represent SSU unofficially to recruit foreign students.

Ben Ford was one of two recipients of SSU’s 2013 Bernie and Estelle Goldstein Award for Excellence in Scholarship. He is currently on leave working on a variety of projects in mathematics and mathematics education and traveling all over the United States and abroad.

Susan Herring’s scholarly work includes publishing instructional technology manuals for statistics courses. In 2013 she published an IBM SPSS® Manual as well as a Graphing Calculator Manual. Currently she is completing another IBM SPSS® Technology Activity Manual, which will be published in 2015.

Izabela Kanaana published “The distinguishing chromatic number of line graphs of complete graphs”, co-authored with Cora Neal, (December 2013), in the fully refereed journal Congressus Numerantium.

Brigitte Lahme is finishing a 3-year term as governor of the local MAA section, the Golden Section. She is very active as a content developer for IllustrativeMathematics.org, a website that provides high-quality materials to help K-12 teachers transition to the new Common Core State Standards in Mathematics.

Jerry Morris just won the 2014 SSU Excellence in Teaching award. He is very active as a member of the Harvard Calculus Consortium through writing innovative calculus materials inspired by his teaching.

After being active in faculty governance and the faculty union for a long time, Elaine Newman took on a new leadership position as SSU Chapter President in Spring 2014.

Sunil Tiwari will be enjoying a sabbatical semester in Fall 2014. He is planning to work on research projects in applied mathematics and investigate online homework programs for use in calculus.

On February 22, 2014 the SSU Department of Mathematics and Statistics hosted the annual conference of the Mathematical Association of America’s Golden Section. Over 200 math faculty, students, and community members from Northern California and Nevada attended the conference held in Warren Auditorium and the new Student Center. President Armiñana welcomed the participants to kick off a day of fascinating math talks and a student poster session. The talks include cutting edge topics like “Randomness in Theory and Practice” by Alon Amit (Origami Logic) and “Common Core State Standards – Mathematics: A perspective from a member of the writing team” by Phil Daro (Strategic Education Research Partnership).

Undergraduate and graduate students from universities throughout Northern California presented their research and scholarly activities in a poster session in the ballroom at the new Student Center. Three teams from Sonoma State presented their results from the recent Math Modeling Competition on modeling traffic flow and designing a sports ranking system. The conference was sponsored by the SSU math honor society \( \Pi \mu \varepsilon \) (Pi Mu Epsilon) and the Math and Stats clubs with many students volunteering to make the conference a great success.
WILLIAM LOWELL PUTNAM MATHEMATICAL COMPETITIONS

Rick Luttmann

The 72nd, 73rd, and 74th Putnam Competitions have taken place since the last Newsletter in Spring 2011. Sonoma State University fielded teams, as it has done every year since 1970. As usual, the median score was zero (out of 120 possible points) for all contestants, in all three years. So getting zero in such a difficult examination is perfectly respectable!

Also as usual, the participants were recognized at the Department’s annual Awards Dinners in April of each year. Cash prizes were given to those who did well. All participants received a silk-screened T-shirt to recognize their participation — with the Hindu “behold” proof of the Pythagorean Theorem stenciled on the front and “Sonoma State University” on the back.

The 72nd annual William Lowell Putnam Mathematical Competition was held on 3 December 2011. There were 12 Sonoma State participants. Five of them received 1 point, and the rest received 0. Those who received 1 point were Rachel (Rê) Bayless, Miguel Cardoso, Alex Fleischmann, Melissa Lira, and Adam Vietro; other participants were Jacob Combs, Matt Duffy, Jon Graham, Vinh Gruenhagen, Kalie Miller, Starr Porter, and Hannah Winkler.

The 73rd Competition was held on 1 December 2012. There were 9 Sonoma State participants. Only one achieved a positive score: Starr Porter received 1 point. Other participants were Rachel (Rê) Bayless, Miguel Cardoso, Julie Corrigan, Kelsi Espinoza, Michael Harris, Jana Putney, Dan Simonson, and Sean Smith.

The 74th Competition was held on 7 December 2013. There were 7 Sonoma State participants: Jacob Combs scored 20 points (ranking 597th, top 15%), Sean Smith scored 10 points (ranking 1,324th, top 32%), and Phoebe Marco scored 2 points (ranking 1,880.5th, top 46%). The other participants were Miguel Cardoso, Jacob Holman, Melissa Scott, and Kaitlyn Vigue. Just under half (49.8%, 2,049) of the 4,113 participants from 557 institutions across North America scored no points.

The William Lowell Putnam Mathematical Competition has been held every year since 1937 (except for a few World War II years) under the auspices of the Mathematical Association of America (MAA). William Lowell Putnam, scion of an established moneyed family from Boston, studied mathematics at Harvard and, although mathematics was not his profession, retained a life-long love for the field. The Competition was established after his death by his heirs to honor him by furthering intellectual competition (as opposed to sporting competition) among universities in North America.

The Competition stresses creativity in problem-solving rather than rote knowledge of mathematics. Sonoma State’s Mathematics & Statistics Department offers (as resources permit) a two-unit CR/NC fall course, Math 330 “Techniques of Problem Solving”, to help students learn to unleash and develop their full mathematical creativity.

SAM BRANNE H IS FINALLY AN SSU ALUMNUS

Brigitte Lahme

Only 26 year after starting to pursue a mathematics degree at Sonoma State University, Sam Brannen finally graduated with a BA in Mathematics Magna Cum Laude and with Distinction in 2013.

Sam received a B.A. in Asian Studies from UC Berkeley in 1983, then in the spring of 1987 he began pursuing a second Bachelor's, this time in Mathematics, at Sonoma State. He completed all requirements for a math major by the end of the spring semester of 1989 and thought he would be able to graduate, but at the last moment discovered that he had not met the CSU's U.S. History requirement (the UCs had a different requirement).

He had been accepted to a graduate program in mathematics at UC Davis, and when he told them he would not be graduating from Sonoma State, they replied that it wasn't necessary since he had an undergraduate degree and had completed the required math courses. Therefore he went on to Davis without getting his bachelor's from Sonoma State.

In 1999 Sam came back to SSU as a tenure-track professor. He always hoped to finish his degree at SSU, by taking a U.S. History class. Unfortunately there never seemed to be time. Then, two years ago, the CSU dropped the U.S. History requirement for second bachelor's candidates. So, last year Sam filled out the paperwork and applied for graduation, and was approved to graduate last spring. He walked with the rest of the graduating students in the ceremony. Sam comments on his graduation "I can now proudly proclaim that I am an SSU graduate. I have loved this university since I first came here in 1987."
If 300 Northern California math teachers were supported by the North Bay Mathematics Project (NBMP) in summer 2013, how many K-12 students have benefitted from the Project’s work over the past 10 years?

NBMP is a collaboration between the SSU Math & Stats Department, the SSU School of Education, and the Sonoma County Office of Education. Since 2000, the NBMP has worked with many districts from Sonoma County to the Oregon border to provide opportunities for over 1000 teachers in K-12 schools to deepen their understanding of mathematics and of approaches to its teaching and learning.

SSU faculty who work closely with NBMP projects include Nick Dowdall, Ben Ford, Tracey Jackson, Brigitte Lahme, and Edie Mendez in the Mathematics and Statistics Department, and Kathy Morris in Literacy, Elementary, and Early Education. September 2013 marks the completion of two large projects: Project LEAD is a 3-year, $3 million project with Santa Rosa, Petaluma, Healdsburg, and Bellevue school districts in which over 100 K-12 teachers became leaders in their districts’ adoption of California’s new Common Core State Standards in Mathematics. California Common Core powered by Student Success (C⁵) is a two-year, $500,000 intensive experience for over 25 teacher leaders from Del Norte, Humboldt, Lake, Mendocino, and Sonoma Counties, learning to be instructional leaders for their colleagues. All teacher-leaders learned strategies and mathematics to improve their own classroom practice in accordance with the new standards and presented what they had learned throughout their own county.

NBMP conducts many shorter-term professional learning opportunities for other districts and counties. In fact, we estimate that over the past 10 years, more than 40,000 students in Northern California schools have benefitted from the project’s work.

For more information about North Bay Math Project, please contact Ben Ford.
The Mathematics and Statistics Department has been very active in supporting efforts to recruit and retain a more diverse student body at Sonoma State University. Prof. Sam Brannen continues as the Coordinator of the Louis Stokes Alliance for Minority Participation (LSAMP), an NSF sponsored program designed to broaden participation in science, mathematics, engineering and technology (STEM) disciplines and increase the number of students receiving baccalaureate degrees, and ultimately Ph.D.s, in STEM disciplines. There have been at least nine Mathematics and Statistics LSAMP recipients who have graduated. Notable graduates include Nick Dowdall who got his M.A. at San Francisco State University, Chad Griffith who got his M.S. at California State University at Northridge, and Juan Muñillo Pacheco who is working on a Ph.D. at the University of Iowa. Dowdall and Griffith are currently adjunct faculty in the Department. For more information on SSU LSAMP: http://www.sonoma.edu/math/lsamp/

During the last three years, Prof. Izabela Kanaana was the Program Director of the Sonoma State University MESA (Mathematics, Engineering, Science Achievement) program which aims to recruit, retain, and graduate more students in STEM disciplines. During those three years the number of MESA members almost doubled. SSU MESA works to enrich the learning environment for educationally disadvantaged students so that upon graduation these students can enter STEM-related professions. MESA student leaders have included mathematics majors such as Gloria Hurtado, who is now an adjunct faculty member in the Department, and Crystal Ewen. Luisa Jojola is a MESA math tutor and Kelsi Espinoza was a recipient of the 2013 MESA scholarship. For more information on SSU MESA: http://mesa.sonoma.edu/

Two additional scholarship programs which have helped attract and retain a more diverse student body are NoGAP, SSU's McNair Scholars Program; and the Robert Noyce Scholarship Program for Math and Science Teachers. The main purpose of the five-year, renewable grant NoGAP Program is to place more historically underrepresented students in Masters and PhD programs. Mathematics or statistics majors who participated in the program include Kelsi Espinoza, Chad Griffith, and Brandi Loper. Griffith and Espinoza each had articles published in the Sonoma State University NoGap Journal, and they presented their research project at the annual NoGAP symposium. Espinoza is currently in a Ph.D. Statistics program at Montana State University. The Robert Noyce Scholarship Program for Math and Science Teachers seeks to encourage talented STEM majors and professionals who might otherwise not have considered the teaching profession, particularly those from underrepresented groups. Several past and present Mathematics and Statistics majors who are planning to teach have received Noyce scholarships and internships during the last five years. For more information on the NoGAP program: http://www.sonoma.edu/mcnair/; and for the Noyce Scholarship: http://www.sonoma.edu/education/scholarships/noyce/

The Mathematics and Statistics Department has also been busy reaching out to the community to attract more young students to consider studying mathematics and other sciences. An important part of this outreach is the participation by Department faculty and students in the Sonoma County Expanding Your Horizons Conference. This year’s conference was on Saturday, April 5, at SSU; and Department Chair Brigitte Lahme was again in charge of facilities planning. Expanding Your Horizons is an event to increase the awareness of young women and their parents of the importance of adequate preparation in math and science. It consists of hands-on workshops conducted by women who have chosen a career in one of these fields. At the 2012 conference held at SSU, Mathematics and Statistics student volunteers included Julie Corrigan, Robin Decker, Jana Putney, and Kaitlyn Vigue. Adjunct faculty member Elizabeth Giuliani has given several workshops in the past. The conference is being planned for 200 seventh and eighth grade students from throughout Sonoma, Lake, and Mendocino counties. For more information or to volunteer: http://www.eyh-soco.org/
Hello. My name is ____________________ , and I have a math problem. It started when I was young. My parents taught me numbers and how to count. Now counting has a whole new meaning to me.

People say that they “draw parallels”. I actually do.

I have put up floors and ceilings with no walls and no problems.

I have done group work alone in a field to craft rings and build lattices.

I have discussed Rank, know Cardinality isn’t a religious term, “pi” isn’t always a food, “e” is more than just a letter, and wonder about whether order matters.

I have worried about a “disk” and “ball” entering another “neighborhood” and getting “punctured”.

I have been accused of both playing angles and playing with angles.

I have divided, multiplied, differentiated, integrated, and regressed.

I have read books that were everywhere dense, and turned in homework that was nowhere dense.

I have seen others be bounded, limited, independent, dependent, opened, and closed.

While in the “Real” world, I made an “imaginary” friend with “complex” issues.

I have dealt with being positive and negative. Under some "parameters", I’ve even been bi-"polar".

Words like “efficient”, “sufficient”, “consistent”, "bias", and “robust” mean something different to me.

“Monte Carlo Integration” is not adding another deck to a blackjack game at a casino.

I know “Euler” is pronounced “Oiler”.

I have been asked "What are the odds?" and "Prove it!" on almost a daily basis.

I have spent days trying to find a lost "i", and weeks trying to get rid of an extra "i".

My studies have been Real, Linear, Modern, Complex, Discrete, and Finite, among other things.

I have witnessed the zeroth dimension, and peered into an infinite dimension.

I am no doctor, but I’ve been to the L’Hospital with injections.

The only bars I go to are \( \mathbf{x} \) and \( \mathbf{y} \).

I have seen chalk and a blackboard be used to create something “Golden”.

I have spent days proving the painfully obvious, yet only hours proving the unintuitive.

I have seen history be disproven and universes get created.

But I have gone off on a Tangent long enough. I’ll Secant you at the next meeting. Thank You.
A GOOD DAY
Bill Barnier

What defines a Good Day? This question came up during a walk with friends recently. Structure, the warm feeling that comes from helping someone, reading, learning, grappling with problems, and a feeling of accomplishment are all part of my recipe. Discussing ideas and sharing experiences are key to bringing it all together.

As a mathematics definition this falls short. However, it is useful as a starting point to consider what makes a satisfying career; in particular a career learning and teaching mathematics. “Choose a job you love and you will never work a day in your life,” an aphorism attributed to Confucius, is good advice if not entirely possible. I chose mathematics and the Department of Mathematics at SSU. Together, these decisions have brought me joy and reward throughout my career.

So, what is there to love about a career teaching and (mostly) learning mathematics? Starting with the doing and learning - mathematics offers questions and problems that may or may not culminate in that satisfying aha. Sometimes that aha comes in surprising ways. For example, waking up at night with the solution (or perhaps just an insight) to a problem you have worked on for several days. I solved the core problem in my PhD thesis while driving north on the 405 in West Los Angeles after several months of work.

Of course, I did not solve all of the problems I wrestled with over the years. Mathematics is a wonderful instructor of humility. However, it also gives you a feeling of power. If you can create a long difficult solution or proof, then confidence in analyzing and understanding many other kinds of problems will follow. Problem-solving, bringing to bear what you know in attacking a problem, pulling some long-forgotten fact up at just the right moment, can be pure joy.

I came to SSU after two years as a post doc at Dartmouth. The chair of our department asked me to teach Number Theory during my first year. I don’t remember whether I had mentioned to him that I had never taken a Number Theory class but I do remember that his specialty was Number Theory. Despite my anxiety, I taught it and loved it. That event epitomizes the open nature of our department. Nobody owns a course, every faculty member may choose courses they wish to teach, and we all cooperate by sharing information and materials.

The department’s emphasis on teaching is even more important. While I chose SSU because I knew the college as a whole valued excellent teaching, I soon discovered that I was among colleagues who cultivated and nurtured good teaching. For example, we meet at the beginning of each semester for our Pedagogy Workshop. Consistent with our culture, good teaching as well as scholarship related to successful teaching is emphasized in our departmental promotion criteria.

Over the years I profited from mentors, friends, and colleagues who were helpful, smart, and interesting. A high school teacher who saw some glint of talent in me and motivated me to be a better student. The first college math professor who showed me how math could be fun. My thesis advisor who guided me through the research culminating in my thesis and PhD. The first chair of our department, who hired me, encouraged me, and became a mentor, friend, and tennis partner. Colleagues who gave me their time, shared insights, collaborated, and as co-authors shared the arduous task of writing articles and textbooks.

Of all the people in my professional life, perhaps students played the greatest part in my growth. They motivated me to dig deep as I prepared carefully for each class. Only the students know how successful I was. Thousands of interactions with students over the years gave me great joy and satisfaction. It has also been wonderful to hear of their subsequent success. Many of them have gone on to careers as actuaries, teachers, stock brokers, professors, and professionals in various fields.

The aphorism of Confucius has been validated by my experience—not because I haven’t worked a day in my life, but because the work has been such a pleasure. In my professional life, a good day has been measured both by the challenges and rewards of mathematics and by my interactions with bright, articulate colleagues and students who are alive with curiosity.
I’ll admit that I never did learn to love grading exams or homework. And it was difficult to be enthusiastic about teaching the students who were not interested in learning. Fortunately, most students do want to learn, and inspired me to do my best in preparing, teaching, and advising. Here are a few of the reasons I have been proud to be a member of the Math & Stats Department:

- Department collegiality – famous and well-deserved!
- We have our personal beliefs and opinions, but common goals. We work collaboratively and positively to develop solutions.
- We enjoy socializing – from our frequent Darwin Quad lunches, to our welcome and graduation parties.
- We collaborate with other Departments and Schools – such as working with the School of Education in preparing future math teachers, developing a Master’s Program, and providing regional professional development for teachers.
- We are leaders in faculty governance, the California Faculty Association, and the Mathematical Association of America.
- We care about our students and their learning. From sharing teaching ideas at Pedagogy Workshops every semester to Lesson Studies focused on expected student thinking, our goal is active student learning, not a steady diet of professorial lecturing. This is why we continue the fight to keep our class sizes as small as possible.
- Our Math Mom, Marybeth Hull, provides the glue that holds us – professors, students and staff – together.
- Our Math students – students who care about learning and doing their best work possible in courses as well as for the Math Club and Department.
- The fun of π Day. Sharing the excitement of credential and grad school acceptances and graduation. Student challenges such as a well-reasoned argument that my interpretation of Babylonian quadratics was wrong. Enjoying the success of our graduates in the teaching community and in other professions.
- It all comes back to the people – faculty, staff, students, alumni – who make up the Math & Stats Department. Thank you, all!

After earning a bachelor’s degree in mathematics from Amherst College, I was awarded a fellowship for graduate study in Germany; so I spent the next 14 months in Europe. On my return to the US, I entered graduate school at Stanford University, where I earned a Master’s degree in mathematics. Then I enrolled at the University of Arizona in Tucson where I earned a PhD in 1966.

My first teaching position was at a small private liberal arts college in Anchorage, known then as Alaska Methodist University (subsequently changed to Alaska Pacific University). I came to Sonoma State University in 1970, and have been here ever since. – Except that I took an extended leave of absence in the early 1980’s, returned to Anchorage, and spent three years having a mini-career in Financial Planning. During that time I earned a designation as “Certified Financial Planner”. I also created a financial-planning software system on my own.

Beginning upon my return to SSU in 1984 I became active in Faculty Governance. I served almost uninterrupted for 25 years – on (and sometime Chair of) the Educational Policy Committee, and on the Academic Senate. I was Chair of the Faculty through a three-year cycle from 2000 to 2003.

I was the founding Chair of the University Scholarship Committee, having been one of the initiators of the program, and served as Chair for fourteen years.
In the fall of 1974 I launched the M*A*T*H Colloquium series, which has just completed its fortieth year. I hosted it for many of those years. I have personally delivered an uncountable number of lectures for this series.

In my first semester at SSU I put together a team to participate in the William Lowell Putnam Mathematical Competition. We have entered a team each year since then. For most of the intervening years I have been "Coach" of the Putnam team. I put together a two-unit CR/NC course, Math 330, “Techniques of Problem Solving”, to help students learn that important mathematical skills which the Putnam rewards.

I also created or developed several innovative General Education courses, including Math 111, Symmetry in the Arts and Sciences, Math 103, Ethnomathematics, and (with Jim Pedgrift) Math 105, Mathematics and Politics. I wrote two books for the Symmetry course. I also wrote several modules for the Undergraduate Mathematics Applications Project (UMAP), including “Equilibrium Populations in Singles Bars” and “Fire and Ice: The Effect of Latitude and Season on Solar Collection”. I have been an associated editor of the Problem Section of the American Mathematical Monthly since about 1977.

In 1986 I was part of a large group of Alaska Performing Artists for Peace who traveled across Russia trying to break the Cold War stereotypes by initiating cultural exchanges. At this same time I was one of about 40 SSU faculty members who believed in the principle that “Working together we can build a World Beyond War”. We initiated a public lecture series on War and Peace issues, and made it available to students as University 301, an upper-level GE course. I hosted this series for 25 years until my retirement. I routinely gave one of the lectures in the series. I hope that someday Sonoma State University can offer a full-blown Peace Studies Program, such as the one at UC Berkeley.

In 2003 I began to volunteer as a mathematics instructor at San Quentin State Prison, and continued to do so for almost ten years.

I have married twice, the first time to a woman, the second time to a man. I have no children. The first marriage carried through Alaska and from 1970 onto a mini-farm in Sebastopol. On the basis of our experience in farming we wrote two books on raising fowl: “Chickens in Your Backyard, A Beginner’s Guide”, and a similar one on waterfowl.

My second marriage began in 1980, although it was not then recognized by any church or government. It is still going strong in its 34th year. Our marriage received legal recognition in August 2008. My husband, Chuna, is a Yup’ik Eskimo from a small village near the mouth of the Kuskokwim River on the Bering Sea coast of southwest Alaska. He’s a storyteller, artist, craftsman, singer, dancer – and now museum curator, well-known in museums across the country and the world as an ambassador and interpreter of his culture.

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I have been enchanted by Eskimo culture ever since I first went to Alaska in early 1967, and this enchantment did not fade even when I moved to Sonoma County. In 1976 my then-spouse and I spent the entire summer in the village of Kikiktagruk (Kotzebue), Alaska, studying and recording Eskimo dancing. We wrote a paper entitled “Aesthetics of Eskimo Dance”, which was presented at the 1978 conference of the Congress of Research in Dance at the University of Hawai’i in Manoa and later published in its official journal, FOCUS. Throughout the ‘60’s and ‘70’s I was director and faculty advisor to university folk-dancing clubs, with a particular interest in music and dance from the Balkan region.

I officially retired from SSU in 2009, but entered FERP, the Faculty Early Retirement Program – which permits us to continue teaching half-time for five years. The final year of my FERP will be over in May.

Continue Reading at http://www.sonoma.edu/math/ luttmann.pdf
**Rick Marks:**

Joyce and I are really enjoying living in Santa Cruz. We have a view of the boardwalk and ocean three blocks away from our sunny roof deck, and many evenings we walk 15 minutes to the lovely pedestrian-oriented downtown for a Happy Hour drink, snack, and Scrabble game, followed by a movie (four theaters), some music (several clubs), or other entertainment. We're spending a lot of time with our children and grandchildren, all of whom live very close by (except for Lindsay, thriving in a PhD program in marine ecology at UCSB). We're traveling a lot: just in the past year we spent two weeks in Hawaii (including a week-long drive around the Big Island in an old VW camper), two weeks camping in the Oregon Cascades, and three weeks at our beach house in Los Cabos. Last winter I taught a math ed course at UC Santa Cruz, and two years ago an algebra course at Cabrillo College -- enough to stay active but not overtaxed. I miss all of you at Sonoma State, but I don't miss the workload! My best to everyone.

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**Emeritus Comments**

**Julie Bonds:**

Two days before Christmas, 2013, I moved to Portland, Oregon, where my brother and his family reside. I was fortunate to get a job at the Rock Creek Campus of Portland Community College. I am currently teaching the first in a sequence of 2 terms of statistics.

The Rock Creek Campus is one of 4 campuses of the college. It is located on over 200 acres about 12 miles west of downtown Portland, in the Beaverton-Hillsboro area of Washington County. Rock Creek is nestled amid farm and wetland, and is home to a fully functioning farm with sheep, rabbits, llamas and cows.

The college is on the quarter schedule, so it took me awhile not to say “semester” and exchange it for “term”. As of this writing (March 3rd), there are 2 more weeks of instruction and then finals. Surprisingly, the cycle that one encounters during the semester, (study, study harder, lose sleep, panic about grades, lose more sleep), is sped up over the 10-week term. We are now in the “panic about grades” mode.

Portland is a beautiful city and I am very glad to be living here. However, I do miss all of my colleagues and former students at SSU. I am grateful to have good, lasting memories of my time as both a student and an instructor at SSU. My experience there helped to make me a confident person and teacher. I hope to continue sharing my acquired knowledge and skills with my students here in Portland.

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**Ai-Chu Wu:**

I will be a first time grandma on January 22 with a grandson in Germany. I will visit them from late May till September.
Josh Gardner (B.A. bi-disciplinary math with a concentration in chemistry, 2012) is starting a new position as a lab technician at Volcafe Specialty Coffee testing and grading coffee beans. Previously he worked at Lagunitas Brewery in Petaluma. Josh describes his move: "I'm giving up free beer for coffee."

Michael Harris (B.A. bi-disciplinary math with concentration in computer science, 2013) will start a masters program in artificial intelligence in the fall at either the University of British Columbia or Simon Fraser University.

After finishing at Sonoma State, Helene Nehrebecki (B.A. Mathematics, 2003) moved to Arizona where she was a grad student at ASU and then a college math faculty member in Maricopa County. She, her husband of six years, and their toddler daughter just moved back to California where Helene plans to continue to help students excel in math.

Kristen Roland (B.S. Statistics, 2009) will be continuing her education in the fall at the University of Georgia in Athens. She will be pursuing her Ph.D. in Statistics with a concentration in Statistics Education.

Hannah Winkler (B.A. Mathematics, 2011) will be finishing a masters in math at San Francisco State University in Spring 2014. She is working with Matthias Beck and Federico Ardila on studying the structure of a particular family of polytopes, namely, the Gale duals of type-A root polytopes. She will continue her graduate studies in the Ph.D. program at the University of Oregon in the fall.
This newsletter is full of articles about student activities and accomplishments – going to and presenting at conferences, participating in the Putnam exam and the math modeling competition, etc. All of these activities are made possible by private donations, mostly from alumni and faculty. A $30 donation pays for a student membership in the MAA. $100 enables a 3-student team to participate in the math modeling competition. That sounds like a pretty good investment, doesn’t it?

If you would like to support our faculty and students in important extra curricular activities, you can donate by going to the department website [www.sonoma.edu/math](http://www.sonoma.edu/math). Any amount would be greatly appreciated.

Does your employer match charitable donations? Check it out and possibly double your impact.