

# STATISTICAL M $\mu$ SINGS

## GREETINGS FROM THE CHAIR

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*Robert Smidt*

Hello again. It is time for that much anticipated (or at least not terribly dreaded) Cal Poly Statistics Department Newsletter. Much has happened this past year, but, most importantly, we graduated a great senior class and those special students will be missed.

There are some personnel changes this year. **Kent Smith**, who has been on the faculty forever (which by definition is two years fewer than me), has decided to retire and enter the Faculty Early Retirement Program, becoming a *FERP*. Kent will teach half time for us during the 2008-09 academic year. Jim Daly and Jay Devore are also *FERP*'s, Jim teaches 1/2 time and Jay 1/3 time; both are still valuable members of the department (especially Jim as he loans me his mystery novels once he has read them). Another change is the welcome return of **Karen McGaughey**. Karen left Cal Poly three years ago to work as a statistician at AMD in the bay area. She has picked up valuable experience that she will be able to bring into the classroom and made connections that should help keep her research program active. At a great inconvenience, she taught advanced experimental design this past spring, involving a 400-mile round trip each Monday. I think that experience was the catalyst that brought her back to Cal Poly, reminding her of her love for teaching. Another new faculty member is **Soma Roy**. Soma comes to us from The Ohio State, where she recently finished her Ph.D. She was mentored by an OSU professor known to several of us and Soma impressed the faculty with her teaching skills during her campus visit. She will be a nice addition to the department.

This is an interesting year for the Statistics Department at Cal Poly. One big effort is a self-study of the Statistics major, part of a two-year program evaluation. Although it is sometimes painful to jump through the hoops of the self-study process, the feedback with its potential for improving the major makes the work worthwhile. This study will dovetail nicely into an accreditation review that is approaching Cal Poly, so the timing is convenient for us. Another task will be to see how we can best handle the budget cutbacks for this and potentially several years into the future. We appreciate the financial support of many of you; your generosity will make it easier for us to jump over this hurdle. We will continue to produce graduates capable of entering the workplace at a high level of proficiency or able to complete graduate degrees in Statistics and related disciplines.

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*\*Please Note.....*

*For the last few years, we have tried to publish M $\mu$ sings during fall quarter. Unfortunately Carol Morris, the department's administrative coordinator and one of the primary forces behind the newsletter, was on a medical leave for much of this academic year. (For those of you who know her, Carol is back and doing well.) During her absence several of her usual tasks were delayed, including this newsletter. So our plan is to post on the web the latest M $\mu$ sings now and then create a new M $\mu$ sings for the 2009-2010 academic year. Why am I mentioning this? Well, among the things that Carol usually spearheaded for the newsletter was the gathering of articles from you folks for our "Keeping In Touch: News from our Alumni" section; because Carol was MIA, this section is small in this current edition. Please consider writing about yourself for the next edition—your friends from the Cal Poly days would appreciate knowing how you are and what you have been doing. You could send you blurb to either Carol Morris (cmorris@calpoly.edu) or Robert Smidt (rsmidt@calpoly.edu).*

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Another notable event is the eventual construction (funding has made the starting date a bit vague) of a new science building that will occupy part of the land currently occupied by the old Science Building (the spider building is going to lose a few of its legs). On top of the noise factor during the construction, losing some of the offices in the Science Building has caused many faculty to move to new offices. In fact, one of our faculty members, **Heather Smith**, had to move her office from Faculty Offices East to the hinterlands (aka the Kinesiology Building). Being the advisor to many senior project students and a frequent statistical consultant, this is an awkward situation. We hope this problem will be alleviated once the new science building is completed.

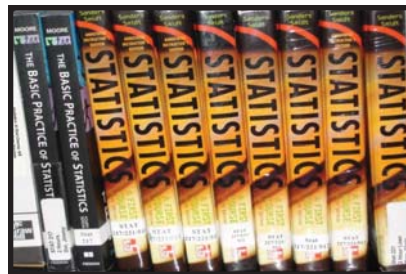
On a sad note, **Noel Wheeler** passed away this past year. Noel worked as a lecturer for us for several years and was a great teacher. Most of you probably did not know her well unless you worked as a grader for her or became involved with one of her projects, but she was a wonderful person. It saddened us to hear of her passing and our condolences go to her husband, Norm.

If you are traveling through SLO, please drop by and say hello. And before you forget, send us an update about what is going on in your life—we'll put it in the next *Musings*.

Have a great year!

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## CURRICULUM DEVELOPMENT PROJECT



By **Beth Chance** and **Allan Rossman**

We are excited about our new curriculum development project, which was recently funded by the National Science Foundation. The goal of this project is to teach concepts of statistical inference in introductory courses for non-majors using randomization tests and computer simulations, rather than normal-based parametric procedures such as t-tests. Our hope is that students can develop a more firm understanding of ideas such as p-value and statistical significance by simulating the randomization process rather than by plugging into the formula for a t-test statistic. This will definitely lead to a very different introductory course! With collaborators George Cobb of Mt. Holyoke College and John Holcomb of Cleveland State, we have been developing and class-testing activities this year with students in STAT 217 and 221, and we have conducted some classroom experiments comparing different versions of the activities. We presented a workshop for faculty at other schools in January 2008 and presented our ideas at the Joint Statistical Meetings last August. We're conducting a 3-day workshop at Ohio State this June. We have also received additional NSF funding to extend this project in collaboration with colleagues at the University of Minnesota.

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## EYE ON ADVISING S.O.A.R.

By Matt Carlton

In 2007, Cal Poly revived the summer advising experience for incoming freshmen by creating SOAR (Student Orientation, Advising & Resources). Attendees got a general orientation to the campus and the college during the first half of the day, then they divided by major after lunch to learn about their curriculum. One and a half years ago, seniors Peter Cerussi and Wade Herndon, along with Dr. Carlton, helped our newest statistics majors select their fall quarter schedules and plan their course work for the remainder of the academic year. In Summer 2008, senior Will Stevenson, Dr. Carlton, and Dr. Chance worked with the incoming class. (Incoming transfer students worked one-on-one via email with Dr. Carlton.)

During the academic year, statistics majors continue to be advised by Drs. Carlton, Chance, Schaffner, and Walker. Major advisors help students create quarterly schedules, select technical electives, and review paperwork (such as course substitutions and graduation evaluation requests). Dr. Walker also serves as the statistics minor advisor. Currently, they are advising about 70 majors and about 25 minors.

This summer, incoming freshmen and transfer students will all attend a two-day SOAR program on campus. Fall 2009 classes have been pre-selected for all students, and everyone will register for those classes during SOAR. Dr. Carlton will meet again with our freshmen to get them started on the right foot and work individually with incoming transfer students to get their community college work correctly articulated to Cal Poly. All incoming students will meet the department on Academic Day during Week of Welcome, September 15-19, 2009.

Students intending to graduate in June, 2010 or soon thereafter are reminded to submit a request for Graduation Evaluation before going home for the summer. Those same students will attend a senior project meeting this fall, where faculty will present some of their ideas.

And, as always, students can get excellent help at the College of Science and Math Advising Center, staffed by Kristi Weddige and Anya Bergman. As Dr. Carlton is fond of saying, "Anya and Kristi know everything; I know the rest."

## P-VALUES AND THE PISMO PIGEON POOP PROJECT

By: Andrew Schaffner, AKA Dr. Poop



Okay, so a few years ago some students started to refer to me as Dr. Poop. I was working with Professor Kitts in the biology department helping him study the effects of probiotics on intestinal flora. I won't go into any details on how one measures the amount and type of bacteria that live in your gut; let's just say it's nice to be the statistician working with the numbers on the computer screen rather than handling the "raw data".

I don't think, however, that this experience alone would warrant the name Dr. Poop, but then I got a call from the National Estuary Program in Morro Bay.

They were concerned about high bacteria levels in the bay, particularly fecal coliform. Yep, more poop. Poop from farm animals, terrestrial mammals, birds, pets, and yes, even people. They were interested in identifying the primary source of this pollution as well as examine some watershed management strategies for reducing contamination. I'm still working with this group on these projects. Once again, I'm glad I'm not trudging around the cow patties on the rangeland to take samples!

Having gained all of this "experience" with poop, I was chosen to serve as the primary statistical consultant for a \$600,000 grant to help identify fecal pollution sources in Pismo. As a tourist town Pismo can't afford to have its beach regularly shut down. Unfortunately this happens more often than you might expect. Some have argued that the offending pollution source is the large flock of pigeons that hang out on the pier. There were even recent plans for a mass extermination of this population! A team of Cal Poly biologists have set out to extensively monitor the beach pollution levels. This project will ultimately lead to a very interesting spatio-temporal dataset that will require complex analyses (some of which I expect will be Bayesian). The project is very exciting in that my involvement may impact local policy and deals with real problems right in my backyard. I look forward to working with several students (senior projects?) to help me analyze what will likely be some very interesting data.

### YOU CAN BE A BIG PART OF OUR DEPARTMENT! HERE'S HOW...

**Colloquium speakers sought:** We were fortunate to have a number of speakers visit the department in the past year, and we thank them for their time and effort: Karen McGaughey, then working at AMD, but now a faculty member in our department again; Jim Rutherford from Chevron; several alumni reporting back to our current students about their experience in graduate school and industry: Dawn Eash, Laine Elliot, and Clint Roberts; several faculty members from outside of our department: George Cobb from Mount Holyoke College, Marsha Lovett from Carnegie Mellon, Richard Levine from SDSU, Tom Short from Indiana University of Pennsylvania, and Jessica Utts from UC Davis.

We are always interested in hearing from our alumni. If you would like to share your experience in industry or academia with our faculty and students, please feel free to contact me to schedule a visit and seminar (ulund@calpoly.edu).

**Industry input sought:** We are continually evaluating our curriculum, adding and removing courses that we offer, and altering course content. Some of you, as statisticians working in industry, are hiring individuals such as our graduates, and we would greatly appreciate any input you may have in terms of the courses we offer and their content. We welcome you to visit our current course listings at our department's home page ([www.calpoly.edu/stat/courses.htm](http://www.calpoly.edu/stat/courses.htm)) to peruse our course offerings. If you have any comments or suggestions, please direct them to me (ulund@calpoly.edu), our Curriculum Chair, John Walker (jwalker@calpoly.edu), or our Department Chair, Bob Smidt (rsmidt@calpoly.edu).



# Pedestrian Detection



By: Samuel Frame

As a consultant for Toyon Research Corporation, I researched, developed, implemented, and tested a wide variety of learning methods which Toyon applied to classification, tracking, and data fusion/analysis problems. Aspects of this work are currently being funded by the Office of Naval Research (award number N00014-07-1-1152) through Cal Poly's California Central Coast Research Partisanship (C<sup>3</sup>RP, [www.c3rp.org](http://www.c3rp.org)). The ability to *automatically* detect pedestrians in video surveillance imagery is an emerging necessity for civil and federal law enforcement agencies, and agencies within the Department of Defense. Before any facial recognition or tracking can occur *automatically*, objects or people must be first detected. In high population density scenarios such as airports, train stations, or professional sporting events, pedestrian detection algorithms need to be extremely fast and accurate. Support vector machines (SVM), neural networks, mixture models, and boosting algorithms are competing methods which have all been suggested. For this work, we focus on *boosting* weak classifiers to detect pedestrians and select features. Boosting algorithms are attractive because they rely on simple, weak classifiers and they are computationally inexpensive. Furthermore, they serve as an internal method of selecting features.

## My Short Time in The Department

By: Jennifer Lemke

During Carol Morris' absence I filled in as the department's administrative assistant for 6 months. As you all know Cal Poly is a great place, beautiful campus, sunshine and of course a Starbucks on campus. However, the best part was the faculty and the students. Everybody was so kind and made me feel part of the statistics family. Being around students makes you feel young again I can understand why the faculty enjoys teaching. The faculty members were always patient with me while I figured how things worked around here and always thankful when I could help them. My goal while I was here was to make sure that when Carol came back all she had to do was walk in and pickup where she left off; I hope I did just that.



Jennifer Lemke, Allan Rossman  
and Lina Ignatova

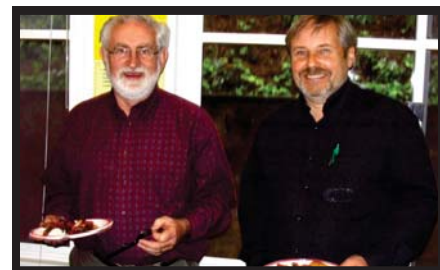
Pictures  
taken at  
my farewell  
luncheon.



Karen McGaughey, Steve Rein and Andrew Schaffner



Soma Roy and Ulric Lund



Jim Daly  
and  
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# FOCUS ON FACULTY

## Matt Carlton

I have been heavily involved in three statistics education projects in the last year. I'm serving as the project manager on an NSF grant for revamping introductory statistics courses (Profs. Chance and Rossman are the principal investigators for the grant). Also, I am one of three statisticians creating a 32-lesson video series for high school and community college statistics classes, to replace the (in)famous *Against All Odds* and *Decisions Through Data* series. The video project has been hectic at times, but I have a new-found respect for television producers and writers. (Maybe I should have joined the writers' strike!) Third, Central California Statistics Teachers (of which I am co-founder) teamed up with the Bakersfield Math Council to put on a "mock" A.P. Statistics and Calculus exam for Bakersfield-area students. About fifteen schools participated in the event in April, with prizes going to the top individual and team performances. My colleague Mary Mortlock and I wrote the statistics exam, as well as the rubrics for the "free response" questions.

On a personal note, I'm still enjoying life at the "beach bungalow" out in Los Osos, although we haven't had a department barbecue out there recently.

## Jay Devore



I am very much enjoying my partial retirement while still attempting to remain statistically active. As a FERPer (participant in the Faculty Early Retirement Program), I have chosen to teach just in the winter quarter. This past winter was my third year of doing so. I taught STAT 416 (Time Series Analysis) for the second consecutive year. I decided to forgo using a text, since most time series books are pitched

at the graduate level and those few that aren't were either way too expensive or included too much extraneous material or were otherwise inappropriate. We used MINITAB extensively and also the special purpose time series software (ITSM, for Interactive Time Series Modeling). In both years the class contained a mix of majors and non-majors: this past year there were 3 biology grad students who were hoping to use time series methodology in their research.

My next classroom assignment will be at Columbia University in New York City (both daughters live there), where I'll teach a 6-week summer course. Otherwise, I continue to be an Associate Editor for Reviews for both *The American Statistician* and the *Journal of the American Statistical Association*.

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That primarily entails finding people to review books assigned to me and then editing the reviews once they have been submitted. Sometimes I find it easier to write a review myself than to look for a suitable reviewer. I have also prevailed upon many colleagues in the department (including Walker, Carlton, Lund, Frame, Doi, McGaughey, H. Smith & Sklar) to write reviews, some more than one. And I continue to be active in textbook writing; soon I'll begin to working on the 8<sup>th</sup> edition of *Probability and Statistics for Engineering and the Sciences*. The latter book recently won a McGuffey Award for Longevity from the Text and Academic Authors Association.

On a personal note, my wife and I continue to enjoy traveling. Last year we visited Chile and Argentina for 3 weeks. I had a 3rd rotator cuff surgery in December, this time on my left shoulder. I'm now back to playing tennis and hope that my body will cooperate. Lastly, the biggest Devore family news is that my wife and I are now proud grandparents.

### Jimmy Doi



This past year I completed my 5<sup>th</sup> year of employment at Cal Poly ... time sure does fly! This year, I taught Stat 218 for the first time and I really enjoyed the opportunity to interact with some very strong life sciences students. In the upcoming 2008-09 year, I'm looking forward to joining Dr. Rossman in my first experience team-teaching Stat 150. I'm also looking forward to teaching for the first time our categorical data analysis class, Stat 418. My dissertation is related to this area of statistics and it should be a great experience getting back into this familiar material.

With respect to other professional activities, during our recent winter quarter, I enjoyed my first experience serving as departmental consultant. It was really interesting working with various clients and I learned a great deal! During the previous summer, I had the opportunity to serve as a consultant for Dr. Keith Vorst from the Industrial Technologies department and we were able to publish an article based on our work in the *Journal of Applied Polymer Science* in March 2008.

The work on another collaborative project recently came to a close as well. The collaboration background dates back to the summer of 2000 when I participated in a summer research program in Japan sponsored by the National Science Foundation. During that summer, I met Dr. Takashi Yanagawa, one of the more well-known biostatisticians in Japan, who served as my host advisor. He currently is Professor and Director of the Biostatistics Center at Kurume University. In March 2005, Dr. Yanagawa invited me for a one week visit to the Biostatistics Center where we began investigating an interesting research problem in nonparametric statistics. The work with him has led to an article that has been published earlier this year in the *Journal of Statistical Planning and Inference*.

In other news, I've really been enjoying many outdoor activities the central coast has to offer. I continue to enjoy surfing, though I'm still very much the novice! If you're ever at Pismo Beach, look for the Asian guy with the 9 foot board who keeps wiping out ... that'll be me. I also really enjoy fishing at the local lakes (Lopez and Santa Margarita) and I recently purchased a kayak to enhance the fishing experience. The nice thing about kayak fishing is, if the fish aren't biting, you can still make it an enjoyable day by paddling and getting a great workout!



## FOCUS ON FACULTY CONT...

Lina Ignatova



Almost three quarters at Cal Poly I haven't been enjoying life more. In addition to getting to know my colleagues and the students better, I am visiting different classes. This motivates me to re-develop and expand my own style as a Cal Poly professor.

Life in SLO and California is exactly what I was expecting and dreaming for a long time since I got in the US - some of the nice experiences are wine tasting and fine dining, Farmer's market on Thursday nights (which reminds me a great deal about home) or just driving along Highway 1. And there are still so many places I am planning to visit and so many things I am planning to do. Life is wonderful!



***"Teaching at Cal Poly continues to be a challenging and rewarding career."***

***-Ulric Lund***

Ulric Lund

I just finished my seventh year as a faculty member of the statistics department. The seven-year itch was easily treated and cured with the tenure that was also granted last year. Teaching at Cal Poly continues to be a challenging and rewarding career. I had a great time this past year teaching STAT 425 for the first time - our mathematical probability course. It was great working with a classroom full of our statistics majors, getting to know many of the seniors that later went on to graduate this year.

Among our seniors last year, I worked with Katherine Riester and Gabe Becker on their senior projects. Katherine continued some SAS programming work that was initiated during a summer internship with Amgen. Gabe and I explored meta-analysis together, something neither of us had much experience with. Both Katherine and Gabe look well-positioned for the future, as Katherine returns full-time to Amgen and Gabe continues his studies at UC Davis next year.

I continue working with Master's students in forestry. One of the students that I advise just spent most of the past academic year, traveling, camping, counting trees, and measuring tree characteristics in all of the redwood tree stands in the Santa Cruz mountains that he could gain access to. He is interested in how forest management regimes may affect the characteristics of redwood tree stands.



## FOCUS ON FACULTY CONT...

### Karen McKaughey

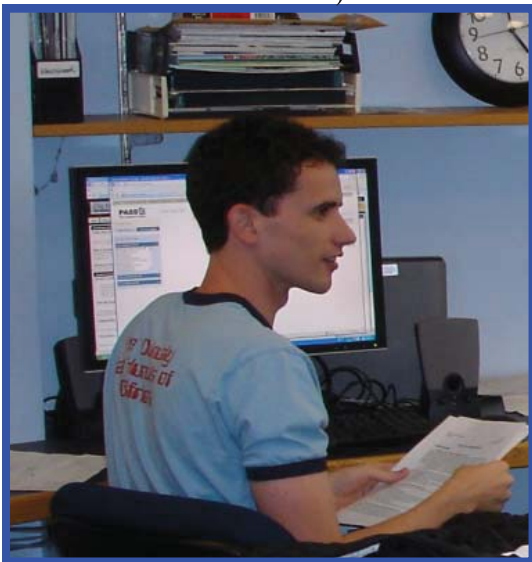


After a 3 year leave of absence working as a Statistician in industry I have seen the light and am thrilled to have returning to Cal Poly in the Fall quarter. The students taking STAT 423 in Spring 2008 share much of the responsibility for this decision. We spent every Monday evening together (for 3 ½ hours) and I enjoyed every minute of it, even though most nights after class I drove 3 hours back to San Jose so I could be at work by 8am Tuesday morning. I think most of those students can say they learned something and enjoyed the class, as well. Ultimately, that experience served as a reminder of what my passion in life is (teaching), and how much I love the students and faculty in the Stat Department at Cal Poly.

During my tenure at Advanced Micro Devices, Inc. in the bay area, I have grown tremendously as a statistician. Working with engineers on projects to enhance the performance of AMD's microprocessors, streamline the production process, and reduce variability in new processor designs, I have had to learn a multitude of statistical methods such as design and analysis of computer experiments, data mining algorithms like Support Vector Machines and Random Forests, and reliability statistics to name a few. My most recent area of concentration has been the application of more efficient Monte Carlo sampling algorithms to achieve 6 sigma characterizations of new circuit designs. This has been a challenging area of work, but one that significantly impacts the bottom line allowing for a much faster development cycle time. In addition to the statistics, I have learned lots of semiconductor technical jargon. I've learned how to juggle multiple projects at once and communicate with people from all over the world in almost every different time zone. The skills that I have attained will do much to make me a more effective teacher and consultant as I move forward with my career at Cal Poly.

While my time at AMD has been an incredibly worthwhile experience, it's time to return to what I love. I'd like to thank each member of the Stat faculty for having given me this opportunity. It's great to be back!

### Stat Majors Working in The Newland Family Lab



## FOCUS ON FACULTY CONT...

Jeff Sklar



So another year in the Statistics Department has passed, and I guess you could say that “survival” has been a primary theme of my projects.

Last summer, I worked with a former Cal Poly student on a research project that explored semi-parametric hazard models for discrete time survival data. For discrete time data, the hazard function provides the conditional probability of experiencing a target event in the next time interval, given that you have not experienced the event in the past. For example, we can model the probability that an individual graduates in spring quarter of their 4<sup>th</sup> year of college, while accounting for the effects of various predictor variables, including gender, socio-economic background, high school grades, etc. The interesting aspect of our research was to model the effects of the covariates using nonparametric regression, e.g. smoothing splines, to relax linearity assumptions. Through simulations, we compared the models with standard models that assumed the effects of the predictors were linear on the hazard.

During the academic year, I put together a proposal for a course in survival analysis methods, which I expect to be offered in the winter quarter 2010. I’m excited about this brand new course, and developing the materials for it. The course will provide students the opportunity to learn about techniques to analyze survival data, where the variable of interest is the time until event of interest occurs. Since the specific time until an event may not be completely observed (i.e. it is “censored”), we need special methods, e.g. the Kaplan-Meier estimator, to appropriately analyze data sets that may contain incomplete observations. I have already taught a rough experimental version of the course, but it will be great to see it offered on a consistent basis.

Since I’m on the topic of survival analysis, I am also currently working on a project with colleagues at Grinnell College (in Iowa) to put together material and lab activities for a book in a second course in statistics. Introductory chapters in survival analysis containing lectures, activities, and assignments will be contributed to the book. There is a fun activity that investigates the melting times of chocolate chips using survival analysis techniques. Students also learn how to implement methods and perform analyses using Minitab and R statistical software. Eventually, I plan to incorporate some of the material into the Cal Poly survival analysis course when it is offered.

The Instructional Tools in Educational Measurement and Statistics project that I was working on with a colleague from UC Santa Barbara concluded this past spring, and a paper discussing the project and its results has been published in the June issue of *Educational Measurement: Issues and Practice*. I’m also working on another paper that discusses some of the pedagogical approaches we used to convey particular topics in measurement and statistics used in the presentations.

This summer I’ve been busy serving as the statistical consultant for the department. As the statistical consultant, I’ve been assisting faculty and students on a wide variety of projects involving crabs, fish, weeds, and water flow velocities to name just a few. It has been challenging work, but it has also been a great experience to develop experimental designs, and formulate appropriate statistical models for data. You gain a special appreciation for the methods and techniques that you’ve learned throughout your formal educational training.

## FOCUS ON FACULTY CONT...

### Allan Rossman



Allan Kayaking in Fiji

As I write this in Spring of 2009, my two cats are turning a combined 32 years old; 18 for Eponine and 14 for Cosette. I am also continuing to follow my fantasy sports teams, named Domestic Shorthairs in honor of my feline friends. I was lucky to win my fantasy baseball league in 2007 but came crashing down to a 6th place finish in 2008, watching my college John Walker win the championship. My fantasy football team also fell apart in the 2008 season, failing to make the play-offs after I won the play-offs in my rookie season of 2007. But I am off to a hot start in my fantasy golf league in 2009, where I won 7 of the last 12 weeks in my 5 person league. (My probability students are currently analyzing this result to see how surprising it would be if the 5 members of my league were equally good/bad at selecting players.)

Finally, I spent a week away from both my cats and my fantasy sports teams in December of the past two years, as my wife Eileen and I went to Fiji in 2007 and Costa Rica in 2008.



### Soma Roy

When I was a kid, my favorite pastime was to play "teacher". In the absence of real students, the living room furniture played the parts of the students. Who knew that my dream would come true, and moreover, I would get to be part of one of the best schools in the nation. I consider myself very lucky to have been given the opportunity to teach (and learn – for one cannot exist without the other)

at the Department of Statistics, Cal Poly.

I came to the United States five years ago from India, and lived in Columbus, Ohio until I got my Ph.D. in Statistics from The Ohio State University (OSU) in the Summer of 2008. Now I am pursuing my lifelong dream of being in school forever. (I believe that's the only way to stay young forever. As Kathie says in "Goodbye, Mr. Chips": "I don't see how you can grow old in a world that's always young.")

My primary research is in the area of Computer Experiments. I am working with my advisor, Dr. Bill Notz, on developing sequential designs to estimate percentiles in a computer experiments setting. Another area I am interested in is that of analyzing survey data. I am looking forward to working with faculty members and students on these areas and others, as part of my research.

It was a wonderful five years at OSU, and though, it was hard to leave Columbus, I am very excited of moving to the beautiful San Luis Obispo. I hope to be all that my colleagues and students at Cal Poly wish and hope I would be. I aspire to make you proud.



***"I consider myself very lucky to have been given the opportunity to teach (and learn – for one cannot exist without the other) at the Department of Statistics, Cal Poly."***  
***Soma Roy***



## FOCUS ON FACULTY CONT...

### Heather Smith



I have just completed my twelfth year at Cal Poly. It has been another really good year. I truly enjoy teaching the *Survey Research* course and the *Consulting* course. This was my fifth year of team teaching *Consulting* with Professor Walker. Next year I will teach this course with Professor Lund. In these two classes the statistics majors and I more fully explore practical applied statistics.

I have had a busy year consulting. As part of the *Statistics Department's Consulting Service* I provided consulting services to more than forty clients throughout the university. I have also been actively working on several large research projects this year; one regarding statistical methods used in air quality monitoring, one for Cal Poly's PolyGAIT-RFID Research and Development Laboratory, and one with a researcher at Twin Cities Hospital in Templeton, California.

I continue to work with many Cal Poly students. I sat on three Masters student thesis committees this year. I had the benefit of working with four statistics majors on their senior projects. And, I am working with two students as part of the *College of Science and Math's Summer Research Program*.

Personally, life is great. My two sons (ages 10 and 12) are busy excelling in their academic, athletic, and artistic pursuits. My husband, David, continues to work hard as a research statistician at Westat Inc. This year he also worked with a statistics student on her senior project. He plays ice hockey when he can, playing and winning a big over-forty tournament in San Jose. Lastly, my extended family had an exciting year. One sister moved from a faculty position at University of South Carolina to Austin, Texas. Another sister, who is on staff at North Carolina State University, got married. And, my father will be getting married later this year. It has been a great year all around.

## Joyce Curry-Daly Scholarship



The Joyce Curry-Daly Scholarship is named in recognition of Joyce Curry-Daly, a graduate of the Cal Poly Mathematics Department and a lecturer in statistics at Cal Poly from 1970 until her death in September of 1997. During her time at Cal Poly, she was very active as the supervisor of the department tutors, and worked for many years with the SMART program, a School of Science and Mathematics program intended to encourage underprivileged students to develop a strong interest in mathematics and the sciences in junior high with the goal that they will have an interest and knowledge to pursue these subjects at the college level.

**Congratulations to:**

**Tyler Benz, Hunter Glanz and Diana Shealy**

**Winners of the Joyce Curry-Daly Scholarship in 2008!!**



## COLLEGE BASED FEES

The Statistics Department continues to use students' College-Based Fee (CBF) funds to enhance their educational experience as Statistics majors. In the spring of 2008 a committee of five students and three faculty formulated a proposal for how to spend the department's CBF funds for the upcoming academic year. Almost all of the proposed items were funded by the College of Science and Math and totaled \$45,000. Below is a summary of these items.

### Summer research experiences

Summer research provides both students and faculty an opportunity to explore projects of personal interest to them as well as helps to meet the research needs of the greater Cal Poly community. This summer two faculty members and four students will be working on four research projects.

### Purchases for student use in the STAT Lab

- Seven new computers,
- Computer maintenance needs in the lab
- Copies of the textbooks used in each of the upper division statistics classes

### Student activities

- Travel to professional conferences and career fairs
- Membership in ASA
- Reimbursement of the SAS certification exam fee,
- Partial support for the STAT Club
- Payment of miscellaneous summer research and senior project expenses



### Other selected items

- Partial funding for the Statistics Department's Speakers' Series
- Partial funding for faculty travel for professional development.
- Specifically, this August several faculty members will attend and participated in the Joint Statistical Meetings in Denver Colorado.

## STAT 325 UPDATE

By: Matt Carlton

STAT 325: Introduction to Probability Models, picks up and expands on the probability content that was previously in STAT 321. The course covers basic probability rules and combinatorics, discrete and continuous random variables, and the Central Limit Theorem. In addition, students in STAT 325 get to see Poisson processes, Markov chains, and a little bit of reliability theory. Students get several opportunities to work with computer simulation, including writing their own programs in Matlab.

On the mathematical side, the class gives students practice calculating expectation and variance for complicated expressions, which

should provide them a better understanding of and ability to manipulate all the "crazy standard error formulas" seen in upper-level course work. We hope that the course will also give students a solid foundation in the mathematics of probability before taking on the proof-based STAT 425 course.

Finally, we're excited to re-introduce applied models (like Poisson processes and Markov chains) into the main curriculum – the last course on applied probability in our department was taught over a decade ago.

## STATISTICS CLUB

The Stat Club got off to a great start this year. To welcome all of the new students to the major, we had a wonderful buddy breakfast where everyone got to meet the new people and catch up with the rest after summer break. Another event was providing a booth and game at Halloween Hoopla that takes place at Farmer's Market for the kids. This year we had a ball toss for the kids to play. Going to The Shack is one of the ways that we get to talk to our professors and hang out with each other. We all headed down there once a quarter this year. In winter, we also had a potluck where we had a chance to meet up with students and professors. Fall quarter marked the first Stat Club vs. Math Club bowling competition. Of course, with awesome bowlers including Professor Len Deaton, we beat the Math Club! March marked the Students T distribution's 100<sup>th</sup> "birthday", so Casey Word, our club co-President last year, had the idea of having a T-party in celebration of it. This included sandwiches, scones, and, of course, tea. Coincidentally, it was planned for Friday, March 14<sup>th</sup>, so we also made sure to serve some pie to celebrate  $\pi$  day. Having it in the statistics conference room was great because it was easy for students and faculty to stop by between classes and office hours.

Open House is also among the events that we participate in. We brought out the famous Plinko board where people could play for some prizes. We also sold our shirts from this year and last saying, "Eat Sleep Statistics" and "Kiss Me I'm Statistically Significant." For the first time, Stat Club Participated in Cal Poly's Relay for Life. We served also as the Data Entry and Accounting Committee for the event. RFL is American Cancer Society's big fundraiser and events like this take place in communities all over



the world. We walked around Dexter Lawn and stayed there the whole night. This year was a big success and Cal Poly raised over \$74,000 for Cancer research.

To sum it up, we had a great year. We wish great luck and success to our peers that are graduating this year, and we welcome all of the new officers to join in this great tradition.

### 2008-09 STAT CLUB

**Co-presidents: Emily Tietjen & Michelle Schaffer**

**Vice-president: Chris Moore**

**Secretary: Lauren Sweeney**

**Treasurer: Tristan Grogan**

**Events Coordinator: Juliana Fajardo**

**COSAM Reps: Katrina Jackson & Andy Zbin**

**Community Service: Andy Kaplan**

**Open House: Amber Staats**

**Sporting Events Coordinator: Tyler Benz**

**Advisors: Soma Roy**

**Jeff Sklar**



# STAT 150

## FRESHMAN ORIENTATION

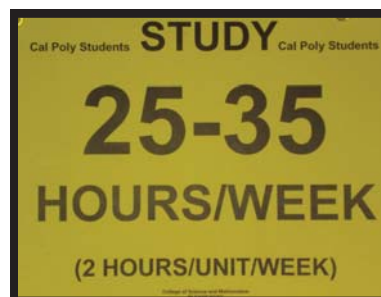
Drs. Allan Rossman and Beth Chance completed the fifth offering of Stat 150 in Fall 2007, the newly developed freshman orientation to the major. With a healthy crop of 15 incoming majors, students were exposed to several key concepts of statistical thinking and other strategies for success in college through reading and discussing essays in *Statistics: A Guide to the Unknown*, classroom activities, portfolio assignments, and other readings. In particular, students carried out several data collection projects and presentations including summarizing articles on the “Day in the Life of a Statistician,” comparing learning styles of undergraduates, analyzing human development trends with the Gapminder software, finding the findings behind a news story, holding a debate on ethical issues related to statistics, and carrying out a time management study of their own activities.



We are especially grateful to several individuals and alums who volunteered to come talk to the students about what they have been doing in their education and careers:

- Recent students Katherine Reister, Jenna Maskell, Tristan Grogan, and Hank Meisse spoke on their summer internships at Amgen, Walt Disney Studios, Shasta Health Department, and Farmer’s Insurance
- Recent students Michael Kolkowski, Peter Cerussi, Max Wise, and Danny Bragonier spoke about their on-campus summer research experiences
- Recent alums, Jessica Oltmanns, Kristen Sharp, and Rudy Angeles spoke on their current employment and study at Santa Cruz County Health Department, Gap, Inc., and Stanford University
- Faculty member Karen McGaughey discussed her current work at AMD in San Jose.

The first alums of Stat 150 are now graduating and we look forward to their feedback and reflections on how well this course prepared them for the statistics major. Please send us any thoughts and suggestions you have for this course as well! Contact Allan Rossman (arossman@calpoly.edu) if you would be interested in visiting the next crop of Stat 150 students.





# KEEPING IN TOUCH

## *NEWS FROM OUR ALUMNI*

### Lia Noble (Graduated 2008)

Life as a graduate from the Cal Poly Statistics Program has been wonderful. After graduation I went to Hawaii and explored Honolulu for a week. It was a really relaxing trip. Currently I am in Modesto, CA working for E&J Gallo Winery as an intern with the lead statistician. I am doing design of experiments (DOE) related work and I am having a great experience at the winery. It is amazing how much I have learned about statistics in the real world and all of my background at Cal Poly, especially STAT 323 and STAT 423, is really helpful. In September I will be moving back to the coast and living in Monterey, CA. I will be starting a job with Northrop Grumman and joining my fellow graduates Mike and Peter. My job will involve SAS programming at Northrop Grumman. I really miss San Luis Obispo and everyone at Cal Poly. I hope everyone has a great fall quarter!

### Clint Roberts (Graduated 2003)

I graduated from OSU with a Ph.D. in Statistics on June 8th. Then on June 14th I got married. I met Rachel at OSU and we graduated together (she with a Pharm.D.). We honeymooned in Fiji and had a wonderful time that was both relaxing and adventurous (scuba diving). And 4 days later, we packed up and moved to Richmond, Virginia. I have started my new job at Capital One, and Rachel is working at Virginia Commonwealth University Hospital. We are having a great time being newlyweds and exploring a new city too. Perhaps someday will look into teaching again (even in a business school), but for now, I have a lot to learn, and my job gives me many challenges that I am excited about tackling.

### Tristan Grogan (Graduated 2009)

I'm doing well. Just at home in Redding for a little while longer. I will be starting the Gallo statistics internship in Modesto May 18th and working there for three months. I just found out that Long Beach wants me as a graduate assistant as well as a student, so I'm pretty sure I'll be going there at the end of August.

### Susyn C. Normington (Susyn Heidenrich) (Graduated 1999)

The time has finally come for me to leave Fair Isaac. As my first job out of college I definitely beat the odds by staying for 8 years, but I am ready for something new! I got a job at Wells Fargo working in the Corporate Credit Modeling and Analytics team in San Francisco. That's a fancy way of saying that I'll be doing the same thing as before, but just within one company rather than for external clients. I'm hoping the pace will be a little more relaxed and I'm really looking forward to learning something new!

*\*Alumni, Family and Friends,*

*Please consider writing about yourself for the next edition, we like to see pictures too! Send your blurbs to [cmorris@calpoly.edu](mailto:cmorris@calpoly.edu) or [rsmidt@calpoly.edu](mailto:rsmidt@calpoly.edu). Thank you.*



# DONORS, WE THANK YOU!!

*We wish to extend a sincere "Thank You" to the following contributors who gave to the Statistics Department and/or the Joyce Curry-Daly Endowment Scholarship fund. Because of your generosity, we've been able to provide scholarship support for Statistics majors, as well as keep the Newland Family Statistics Laboratory equipment and software updated.*

*July 2007 through May 2008*

- James and Wendy Daly*
- Jay and Carol Devore*
- Roxy Peck*
- Mr. and Mrs. Glen Dorin*
- Kevin and Tonya Gregory*
- Cheryl and Robert Neher*
- Andrew Skrylov*
- Edward Lopes*
- Edward Ellis Jr.*
- Jasonn and Margaret Beckstrand*
- Michael S. Han*
- Richard and Erin Schimke*
- Elisabeth Smith*
- Northrop Grumman Corporation*



Your support is truly appreciated by faculty, staff and students!

If you are interested in making a tax-deductable contribution to the Joyce Curry-Daly Memorial Scholarship Fund or to the Statistics Department,  
Please contact:  
College of Science and Math  
Director of Advancement  
(805) 756-7375

**Note:** Every effort has been made to ensure the completeness and accuracy of the listing of contributions. If you find a an error, please e-mail

Carol Morris at: [cmorris@calpoly.edu](mailto:cmorris@calpoly.edu)

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# ALUMNI – WE’D LOVE TO HEAR FROM YOU!

Tell us about your career, family, etc. via e-mail at [cmorris@calpoly.edu](mailto:cmorris@calpoly.edu), or complete the “Statistics Alumni Update” form and mail to the address listed below.



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Name: \_\_\_\_\_ Graduation Year/Degree: \_\_\_\_\_

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Employer and Position: \_\_\_\_\_

Employer Address: \_\_\_\_\_

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May we include your update in our next newsletter? (circle one)      YES      NO

E-mail information to [cmorris@calpoly.edu](mailto:cmorris@calpoly.edu) or mail form to:

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