

SUMMER 2015

Meta

Featuring statistics alumni,
faculty, students and news

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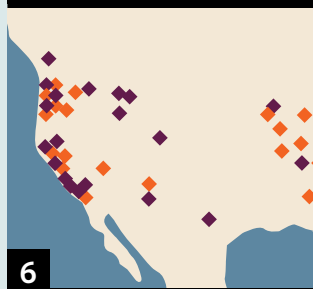
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Page 14-15
Oregon Agricultural College
'No. 54. Scene at O.A.C., Corvallis, Ore.'

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2



6



12



14

Meta 2015

Contents

2 News

Awards, recognition and new faculty and graduates

6 Alumni updates

Alumni land top jobs and academic positions
A statistician at Intel

8 Infinite Possibilities Conference

The biennial 10th Infinite Possibilities Conference (IPC) was held at Oregon State University (OSU) on March 1-3

10 Student spotlights

Timothy Michael Skalland and Lu Wang describe what makes Statistics so special

12 Recent retirements

Thank you to our esteemed and beloved colleagues for their many years of service

14 Retrospective

A history of the Department of Statistics

A Message from the Department Chair

In our recent alumni surveys, many of you expressed interest in a newsletter to learn about developments in the department and to keep up with former colleagues. So welcome to the first edition of the Department of Statistics newsletter!

I hope you enjoy our department updates of news, people, events and research highlights. Please also visit our website for the latest news and upcoming seminars at <http://stat.oregonstate.edu>.

I have been the Department Chair since 2011 and would like to extend my personal thanks and appreciation to the two previous chairs who continue to offer me advice and encouragement: Bob Smythe, who was Department Chair from 1999-2008, and Dan Schafer, who was Department Chair from 2008-2011.

It has been an exciting time in the department with many changes in the past five years. Jeff Arthur, Dan Shafer, Bob Smythe and Dave Birkes are all enjoying their well-earned retirement. Paul Murtaugh and Cliff Pereira just retired last month, although Cliff will continue to support consulting efforts. Although we will greatly miss our retiring faculty, we are excited about being able to hire eight new faculty. This new influx of people has created a young, vibrant department and has introduced several new lines of research.

We welcome the following talented assistant professors: **Sarah Emerson** (2010), **Claudio Fuentes** (2011), **Charlotte Wickham** (2011), **Yuan Jiang** (2011), **Thomas Sharpton** (2013, joint appointment in the departments of microbiology and statistics), **Debashis Mondal** (2014), **Duo Jiang** (2014) and **Sharmodeep Bhattacharyya** (2015). In addition, we welcome **Sastry Pantula**, the Dean of the College of Science who was the former chair of the Department of Statistics at North Carolina State University.

I also want to thank our extremely generous alumnus Jack Borsting for his support of our graduate students. Scholarships for graduate students is the lifeline for a strong academic department. Thank you, Jack, for helping us attract extraordinary and talented students from across the nation.

Thanks and congratulations to our alumni, students and faculty for their excellent achievements and dedication to learning, which continues our tradition of being a welcoming and outstanding department. We look forward to hearing from you so please keep us updated with any news. We will share alumni updates in future issues.

I look forward to seeing many of you at our Statistics Department reception during the Joint Statistical Meetings in Seattle!

Ginny Lesser
Chair



Upcoming events



AUG 11, 2015. SEATTLE, WA
OREGON STATE UNIVERSITY
STATISTICS ALUMNI GET TOGETHER

We hope to see you at JSM 2015 in Seattle! Join OSU Statistics faculty and alumni for a mini “reunion” at the Sheraton Hotel - Ravena C in Seattle from 5:30-7 pm.

We look forward to re-connecting with you and sharing our successes and progress with you.



WORLD
STATISTICS
DAY
20.10.2015
BETTER DATA.
BETTER LIVES.

OCT 20, 2015.
STAY TUNED: WORLD STATISTICS DAY

The World Statistics Day was proclaimed by the United Nations General Assembly in 2010 to recognize the importance of statistics in shaping our societies.

News

Awards, recognition plus new faculty and graduates

Find more online: stat.oregonstate.edu/people

SHARMODEEP BHATTACHARYA

Hire: Assistant Professor

Dr. Bhattacharya comes to Oregon State after a year as a postdoctoral researcher in the Department of Statistics at University of California, Berkeley, where he was involved in projects within the Life Sciences Division at Lawrence Berkeley National Laboratory. He completed his Ph.D. in Statistics from UC-Berkeley and received his bachelor's and master's degrees from the Indian Statistical Institute.

University of Chicago. He received the prestigious National Science Foundation CAREER award (\$400,000) and a 150,000 NSF grant (2009-2011) for his work on spatial statistics and Markov Random Fields. Mondal received his Ph.D. in statistics from the University of Washington and obtained his bachelor's and master's degrees from the Indian Statistical Institute.



Sharmodeep Bhattacharya

DUO JIANG

Hire: Assistant Professor

Dr. Duo Jiang received her Ph.D. from the University of Chicago in 2014. Jiang's research interests are in statistical methods and tools for application in genetics and other biology-related fields. She has developed methods for studying independent data in the context of genetics association studies. Jiang actively consults and frequently collaborates with researchers in life sciences. She earned her B.S. in Mathematics from Tsinghua University.

THOMAS SHARPTON

Hire: Assistant Professor in Microbiology and Statistics

Dr. Sharpton is developing the quantitative biology curricula and is teaching courses in bioinformatics and microbial genomics. Prior to arriving at OSU, he obtained a PhD in Microbiology with a Designated Emphasis in Computational Biology from UC Berkeley, and subsequently worked as a Bioinformatics Fellow at the J. David Gladstone Institutes.



Duo Jiang

DEBASHIS MONDAL

Hire: Assistant Professor

Dr. Mondal's research interests include spatial statistics, matrix-free methods, Markov chain Monte Carlo and time series analysis. He focuses on research applications in agriculture, astronomy, atmospheric sciences, geographical epidemiology and environmental sciences. Prior to joining Oregon State, Mondal was an assistant professor in the Department of Statistics at the

His laboratory is broadly oriented towards understanding how microorganisms that live on humans influence health. To this end, his lab develops and applies computational and statistical procedures to mine and interpret massive digital biological datasets (e.g., genomes and metagenomes) generated from disease models and human clinical studies.

JEFFREY KOLLATH

Horne Award for Excellence in Teaching

Jeffrey Kollath received the Frederick H. Horne Award for Sustained Excellence in Teaching at the 2015 College of Science Winter Teaching and Advising Awards.



Debashis Mondal



Thomas Sharpton

Kollath described the lessons he learned many years earlier as a mathematics teacher in suburban Chicago and how they have helped him successfully teach large undergraduate lecture classes at Oregon State. “You have to remember the audience you have and keep your expectations high as well as realistic,” said Kollath.

The award recognizes excellence in teaching science by a faculty member who has repeatedly demonstrated exceptional instructional qualities and has had a significant impact on students.



Jeffrey Kollath

ROBERT SMYTHE

2013 AAAS Fellow

Emeritus Professor Dr. Robert Smythe was elected a 2013 fellow of the American Association for the Advancement of Science. He was recognized for his distinguished contributions to probability theory, design of randomized trials, analysis of algorithms and for applications of probability and statistics to science policy. Smythe was one of 338 AAAS members honored with the prestigious distinction in 2013 for scientifically or socially distinguished efforts to advance science or its applications. He is one of 44 OSU faculty who have been elected fellows since 1965.

Smythe served as chair of the Statistics Department from 1998 to 2008. Although Smythe retired in 2010, he continues to work on his research and collaborate with former students on academic papers.



Robert Smythe



SASTRY G. PANTULA

Hire: Professor and College of Science Dean

Dr. Pantula was appointed College of Science Dean in 2013 and is a Professor of Statistics. Previously, he served as director of the National Science Foundation’s Division of Mathematical Sciences from 2010–13. Pantula was a statistics professor at North Carolina State University since 1982, serving as department chair for eight years. He also directed the university’s Institute of Statistics.

A fellow of the American Statistical Association (ASA), Pantula served as ASA president in 2010. He is also a fellow of the American Association for the Advancement of Science. His research areas include testing for trends in correlated data, unit root hypothesis testing, linear and nonlinear mixed and random coefficient models, spatial statistics and industrial statistics. Pantula received both his bachelor’s and master’s degrees from the Indian Statistical Institute in Kolkata and his PhD in statistics from Iowa State University.

News

(Continued)

YANMING DI

Promotion

Dr. Yanming Di has been promoted to associate professor with tenure in 2015. His research interests include statistical genetics/genomics, disease mapping, RNA-Sequencing, gene expression and regulation. Di received a prestigious \$567,599 National Institutes of Health grant for his work on RNA-Sequencing gene expression analysis.

Di's research is multifaceted and interdisciplinary in nature. He has broad experience in developing statistical methodology and computational tools for large-scale genetic and genomics data. Di has entered into high-powered collaborations with researchers across Oregon State.

With colleagues from statistics as well as the Center for Genomics Research and Biocomputing (CGRB), Electrical Engineering and Computer Science and the Department of Botany and Plant Pathology, Di has developed and implemented statistical tools for analyzing RNA-Sequence gene expression data, integrated the tools into an easy-to-use software package and developed visualization techniques to effectively communicate statistical conclusions to biologists.

ALIX GITELMAN

Promotion

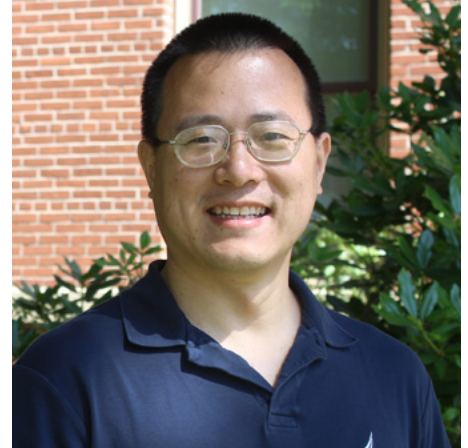
Dr. Alix Gitelman was promoted to professor in 2015. In addition to serving as an academic statistician and statistical consultant, Gitelman teaches and advises graduate students

both within the Statistics Department and across the University. She sees the three major components of her position—teaching, research and consulting—as synergistic. She teaches the popular Bayesian statistics course which has resulted in consultation and collaborations cross the University. Her statistical consulting work informs her teaching and research, which enables her to see how scientists use—and sometimes misuse—statistical methodology. Similarly, many of Gitelman's advising and mentoring relationships have crossed over into consultation work.

Gitelman devotes time and energy to create an open, welcoming environment in her classes so students feel comfortable to ask questions. To create an innovative and dynamic learning environment, she combines lectures with small group work and computer activities. She also tries to strike the right balance of lightheartedness in class, acknowledging “statistics is difficult enough on its own.”

Gitelman enjoys helping people whether by facilitating learning and knowledge discovery and advancement or, even more fundamentally, by facilitating cogent thinking that connects scientific inquiry to questions that can be answered using data.

Her research focuses on statistical methodology, which expands her knowledge of the natural and environmental sciences.



Yanming Di



Alix Gitelman

HIGHLIGHTS

The Department of Statistics hosted a number of important seminars and conferences the past couple of years, from celebrating the International Year of Statistics to assessing the impact of big data on statistics. The Department graciously accepted SAS's generous donation of data software for our students and faculty. This donation will help us accelerate the implementation and launch of our new MS in Data Analytics program.

Here are some of the highlights:

Distinguished Lecture on Big Data

The College of Science held its Distinguished Lecture in October. John Sall, co-founder and Executive Vice President of SAS Institute, Inc., discussed how to effectively analyze Big Data in order to find meaning and significance in the plethora of information.

JMP Software donation

Students and faculty in the Department of Statistics and the College of Science will now be able to use the influential JMP statistical software for academic research and instruction and to explore vast amounts of data, thanks to a generous donation by SAS—a leading global statistical software company based in Cary, North Carolina.

SAS has also gifted its data mining software, Enterprise Miner, a powerful data mining software used to create accurate predictive and descriptive models for large volumes of data.

Students in the Department of Statistics' new MS in Data Analytics program will have an opportunity to use this software. The program addresses the increasing demand for a workforce able to manage, analyze and effectively make use of exploding amounts of data.

ICSA/KISS conference

The department sponsored a joint conference of the International Chinese Statistical Association (ICSA) and the Korean International Statistical Society (KISS) in Portland from June 15-18. College of Science Dean Sastry G. Pantula was the banquet speaker and delivered a presentation called "The World of Statistics."

Other news

Marie Davidian, 2013 President of the American Statistical Association (ASA) presented a lecture, "The Right Treatment for the Right Patient (at the Right Time): Personalized Medicine and Statistics."

Ron Wasserstein, the Executive Director of ASA discussed, "Probability and the Oregon Lottery" in April 2015.

To mark the International Year of Statistics, Tim Hesterburg of Google, Inc., gave a presentation on "Apps, Earthquakes, and Survival: Some Statistical Stories from Google and Beyond" in fall 2013. ■

Congratulations!

Recent PhD graduates

XUAN CHE, 2012

"Spatial Graphical Models with Discrete and Continuous Components"

Advisor: Alix Gitelman

URAN CHU, 2012

"A new approach to pricing real options on swaps: a new solution technique and extension to the non-A.S. finite stopping realm"

Advisor: Bob Smythe

YAN FANG, 2012

"Extensions to Gaussian Copula Models"

Advisor: Lisa Madsen

DAVID DAIL, 2012

"Conditioning on Unobserved Period-Specific Abundances to Improve Estimation of Dynamic Populations"

Advisor: Lisa Madsen

SHUPING JIANG, 2013

"Variable Selection in Semi-Parametric Models"

Advisor: Lan Xue

LUNA SUN, 2014

"Statistical methods for serially correlated zero-inflated proportions"

Advisor: Alix Gitelman

GU MI, 2014

"Statistical analysis of RNA sequencing count data"

Advisor: Yanming Di, Dan Schafer

QUINN PAYTON, 2015

"Modeling density dependence in the presence of measurement error"

Advisor: Paul Murtaugh, Ginny Lesser

Alumni

Friends in high places: Alumni land top jobs

We are proud of our students and their accomplishments. Our graduates in the master's and doctoral programs have shone in industry, research and academic jobs.

The current surge in digital data and an ever-growing need to process and analyze big data have rendered statisticians even more desirable in a wide range of industry and research jobs and our graduates are faring exceptionally well.

Here is where statistics alumni have been hired since 2000:

AC Nielsen Marketing Research Company
Amgen
Bureau of Labor Statistics
Cadmus Group Portland
Cancer Research and Biostatistics
Census Bureau
Centers for Disease Control & Prevention
Clever Set, Inc.
Department of Forest Resources
Dynamic Measurement Group, Inc.
Eli Lilly and Company
Ernest & Julio Gallo Winery
Fred Hutchinson Cancer Research Center
Hewlett Packard
HSBC Credit Card Services
International Game Technology (IGT)
Insights Now, Inc.
Intel
John Deere & Co World Headquarters
Kaiser Permanente Center for Health Research
King Yuan Electronics Co., LTD
Kirtland Air Force Base
Mayo Clinic Department of Systems and Procedures



Merck & Co. West Point, Pa
Momentum Marketing Intelligence
Monsanto Company
NOAA Great Lakes Environmental Research Lab
Oregon Department of Fish and Wildlife
Oregon Office of Economic Analysis
Oswego County Board of Education Services
Pacific Corp Portland
Pacific Northwest National Laboratory
Polimetrix
Rentrack Corporation
Research Triangle Institute International

Southern California Coastal Water Research Project
Southwest Oncology Group
SPRI, Biostatistics and Data Management
State of Alaska Fish and Game Commercial Fisheries
The Corradino Group
USDA Forest Service
Veterans Health Services R & D
Weyerhaeuser Company

ACADEMIA

Nearly one-fourth of the 122 Ph.D. graduates have secured academic

positions at universities in the United States and abroad:

Acadia University
Cal Poly, San Luis Obispo
California State University, Chico
California State University, Los Angeles
Cleveland State University
Colorado State University
Harvard T.H. Chan School of Public Health
Idaho State University
Montana State University
Montana Tech
Naval Postgraduate School
New Mexico State University
Oregon Health Sciences University
Oregon State University
Penn State University
Portland State University
Santa Clara University
Simon Fraser University
Sonoma State University
State University of New York
Syiah Kuala University, Indonesia
The National Institute of Development Administration, Thailand
Universidad de Concepción, Chile
University of Alaska
University of California, San Diego
University of Grenoble, France
University of Louisville
University of Neuchatel, Switzerland
University of New Brunswick
University of Oregon
University of Portland
University of Puget Sound
University of Texas
University of Tunis, Tunisia
University of Wisconsin-Stout
University of Wyoming
Washington State University

A STATISTICIAN AT INTEL

Theresa Utlaut acquired the skills that have formed the foundation of her highly successful career at Intel from an MS and Ph.D. in statistics at Oregon State University. Although Utlaut always had a fondness for numbers, she wasn't sure about the sort of statistics she would eventually like to pursue. Thanks to the versatility of statistics, its wide-ranging applications to many areas and the incredible flexibility of the Oregon State statistics program, Utlaut was able to discover her true statistical calling.

Utlaut joined Intel Corporation in Hillsboro immediately after completing her PhD in 1998. Prior to that, Utlaut interned at the multinational technology company for three summers, where she realized that she liked and excelled at statistical applications in industry.

"I had an offer for an internship for the fourth summer. But then my manager said, 'Just finish up your degree and come work for us full-time,'" said Utlaut.

Under the guidance of her PhD advisor, David Birkes, Utlaut worked on what she describes as a "theoretical thesis." Utlaut also gratefully remembers her Consulting Practicum seminar led by Cliff Pereira and Scott Urquhart, a long-standing and highly regarded course in the department where graduate students learn to apply statistical skills to projects and real-world data problems across disciplines.

Utlaut credits her training in both the theoretical and applied aspects



Theresa Utlaut

of statistics at Oregon State with her being extremely well prepared for her job at Intel.

"My theory training with Birkes helped me figure out how to ask questions and gave me a deep understanding of how things operate. Pereira's and Urquhart's consulting seminar helped me learn how to talk to clients, take charge by visiting their labs, see what they are doing and ask them questions about their projects," said Utlaut.

Almost 17 years later, Utlaut continues to shine at Intel. Currently she is a statistician in the Logic Technology Development group and is responsible for providing statistical training, consulting and support in the development of the next generation microprocessor. Utlaut has also diversified her expertise by studying engineering courses while at Intel. "I am a much better statistician while I am learning the engineering part of things," said Utlaut. ■





Infinite Possibilities

The biennial 10th Infinite Possibilities Conference (IPC) was held at the Oregon State University in Corvallis on March 1-3. The IPC is a unique national academic conference focused on empowering, educating and promoting the careers of underrepresented minority women in the fields of mathematical and statistical sciences.

The Departments of Statistics and Mathematics at OSU co-hosted IPC 2015, which received generous support from the National Science Foundation (NSF), the National Security Agency (NSA) and OSU. IPC is a program of Building Diversity in Science (BDIS), a nonprofit organization that encourages diverse students to enter STEM disciplines. The model for the annual conference is joint hosting between a University Partner and the nonprofit. Lan Xue, associate professor of statistics, was the co-chair of the local IPC organizing committee.

The conference attracted over 175 diverse participants from nineteen states, Mexico and Puerto Rico. Over 80 students, including undergraduates, graduates and postdocs, participated in a rich mix of research talks on statistics and mathematics, professional

development workshops, panels on race/gender in the context of quantitative sciences and a short Biostatistics course, "Encompassing Variability in the Search for Truth," jointly taught by Renee Moore of North Carolina State University and Portia Parker of the SAS Institute.

Over three days, students networked, conversed and learned from an impressive cohort of high-achieving women of color statisticians, mathematicians and quantitative scientists.

Statistical talks featured the diverse uses of the statistical software R, tools for predicting patterns in genetics data, analyses of Alzheimer's disease studies among many others.

A panel on "The Big Data Boom," was led by OSU statistics chair, Ginny Lesser and featured a talk by statistics professor and College of Science Dean, Sastry Pantula. The panel highlighted the need for a combination of foundational statistics courses, training in software programming tools such as SAS, R and Python and computer science skills in areas such as data mining to succeed in the current data-driven job market. ■

Student spotlights

TIMOTHY MICHAEL SKALLAND

Timothy Michael Skalland hails from a family of statisticians. Not surprisingly, after he completed his bachelor's degree in mathematics and physics from William Jewell College in Liberty, MO, just outside of Kansas City, he decided to apply to graduate programs in statistics. Skalland enjoyed mathematics in college and was drawn to statistics because it promised exciting career opportunities. Skalland's stepfather, who received his PhD from Oregon State University Statistics in 1979, had found his professors inspiring and his time in Corvallis enjoyable. An offer of admission along with financial aid from OSU Statistics helped seal the deal for Skalland.

Skalland credits his advisor, Sarah Emerson, for motivating him to continue research as a doctoral student after completing his master's degree. Skalland, who is co-advised by Paul Murtaugh, has focused his doctoral thesis on the optimum design of group sequential clinical trials. As he prepares for his defense in September, Skalland finds himself weighing job options in both academia and industry. While he has discovered a love and talent for teaching during his time at OSU, his doctoral research on clinical trial design makes him highly suited for a number of jobs in the biotech and pharmaceutical industries.

Skalland's time in the Statistics Department has also been significantly shaped by his work as a coordinator and consultant for the Statistical Consulting Service—a key program

in the department that offers advice on statistical design and analysis to University researchers and students.

A class on Advanced Experimental Design with Cliff Pereira, Skalland points out, had a transformative impact on him, opening the doors to his own Ph.D. research on design, enhanced his work with the Consulting Service and deepened his love for statistics.

“The reason I really like statistics is because it lets me play in everybody's backyard. Through the Consulting Service and just working with anybody on campus I have learned almost every department or subject can use statistics in some form, whether it is designing a clinical trial, setting up an observational study in the wild or tracking clams growing in a lab,” said Skalland.

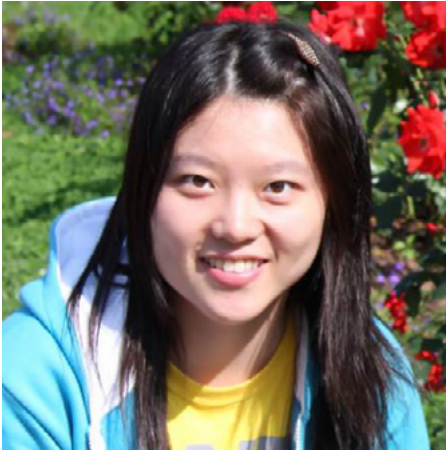
“A big part of my consulting process, which I really enjoy, is interacting with lots of different people on different topics and being able to explain tough statistical concepts in a straightforward manner,” added Skalland, who has worked with diverse projects in horticulture, forestry, soil sciences, biology, chemistry, economics and design and human environment as a statistics consultant.

Skalland says he is possibly the only individual in Corvallis who doesn't enjoy hiking. Instead, in his free time, Skalland plays on two bowling leagues, does trivia nights in town and is part of a Statistics Department indoor soccer league for both professors and students.



“I have learned almost every department or subject can use statistics in some form, whether it is designing a clinical trial, setting up an observational study in the wild or tracking clams growing in a lab.”

Timothy Michael Skalland



“The consulting practicum helps us to communicate with clients and helps them with their projects and questions. It is very challenging and rewarding.”

Lu Wang

LU WANG

A native of Beijing, China, Lu Wang arrived a little over four years to pursue graduate studies in Oregon State University’s Department of Statistics after completing her B.S. in statistics from Nankai University. Under the guidance of Dr. Lan Xue, Wang is currently completing her dissertation and plans to graduate in June 2016.

Wang, who was offered admission by a few other universities in the United States, chose statistics at Oregon State because she liked the rigor and intellectual diversity of its graduate programs. Wang’s hunch that OSU Statistics would train her very well in a rich mix of theory and applications has proven right. One of her favorite seminars, the department’s famed Statistical Consulting Practicum has given Wang ample exposure to the application of statistical methods to solve real world problems.

As part of her work in the seminar and with the Statistics Student Consulting service, where graduate students like Wang provide statistical advice on University-related research projects, Wang has gained valuable experience working in multiple research areas including social science, horticulture, botany and plant pathology, food science and agriculture science.

“The consulting practicum helps us to communicate with clients and helps them with their projects and questions. Sometimes in classes we only learn the theories and methods but we don’t have a chance to apply them. You need

to learn how to communicate with people with no statistical background. It is very challenging and rewarding,” said Wang.

Wang is excited about her dissertation on non-parametric models and its many potential applications.

“A non-parametric model helps us estimate the function of any kind of relationship between predictor X and response Y without any parametric parameters or restrictions. The application is very wide here. For example, you can apply it to the economic field and to explore the relationship between money and labor you put into production versus the output. We don’t have any restriction on our modeling so there will be a large variety of applications compared with other models,” said Wang.

Wang is keenly interested in pursuing academic research and teaching after graduation. Thanks to her varied experiences in OSU Statistics, she also looks forward to working in industry should the right opportunity emerge.

Wang enjoys her life in Corvallis. An avid player of table tennis and badminton and a fan of American fast food, she likes Corvallis for its quiet and natural beauty, which Wang points out, suits her studious and thoughtful nature very well. ■

Retirements

Two esteemed and beloved colleagues retire

PAUL MURTAUGH

Associate Professor Paul Murtaugh steps down after 26 years of service. Dr. Murtaugh joined Oregon State University's Department of Statistics after completing a Ph.D. in biostatistics from The University of Washington in 1989. His primary research interests are in statistical ecology, biostatistics and survival analysis.

CLIFF PEREIRA

Research Associate and Director of the Statistical Consulting Practicum, Cliff Pereira has retired after more than 30 years of service in the Statistics Department. Pereira entered OSU's graduate program in statistics in 1979 and was hired as a researcher after completing his Ph.D. in 1985.

Among other things, Pereira will be remembered for his invaluable and pioneering contributions in strengthening and leading the Statistics Student Consulting Service in the department. Originally created by Lyle Calvin, a former chair of the department, Pereira took over the program in 1991 and was instrumental in turning it into a highly effective and successful training ground for future applied statisticians. As part of this effort Pereira taught the Statistical Consulting Practicum where graduate students obtain practical experience by tackling statistical problems that stem from current research done within a wide range of academic departments across campus.

"Cliff has personally provided statistical

advice to countless researchers on campus and has also directed the consulting practicum that provides critical experience to all our students. His extensive expertise will be missed by the department and by the OSU community," said Virginia Lesser, chair of the Statistics Department.

Pereira's significant pedagogical contributions in the consulting practicum and in his Advanced Experimental Design course have impacted and transformed the careers of many Statistics students over the years. He has enjoyed helping graduate students apply what they have learned in their classes to real-world problems in a wide range of disciplines and settings. These practical skills have proven to be very valuable in the job market.

In his long career at the helm of the department's statistical consulting program, Pereira has worked directly with hundreds of researchers at OSU, assisting them in designing their studies and analyzing their data. Pereira, who has undergraduate and master's degrees in biology, claims his most satisfying direct consulting has been with the many excellent researchers in the College of Agriculture and in the Environmental Health Sciences Center on campus.

"Above all, I am going to miss the human interactions both within the Department and across campus – many of which are about how to do the best research we can in the face of real-world constraints and variation. It's about helping people solve interesting problems both at the



Paul Murtaugh
26 years of service



Cliff Pereira
31 years of service

study design stage – how can we get the most informative data? – and at the data analysis stage – how can we most effectively visualize and analyze the data?" said Pereira.

He will work part-time in the department for a while as he helps the statistical consulting program transition toward new leadership and management.

Pereira and his wife Chere, who is Chief Pre-health and Pre-medical Advisor in the College of Science, will continue to live in Corvallis. Pereira keenly looks forward to devoting more time to his numerous interests in music, gardening, traveling, hiking and bird watching. ■

Scenes from Statistics retirement parties



Alix Gitelman, Dan Schafer and Jeannie Sifneos



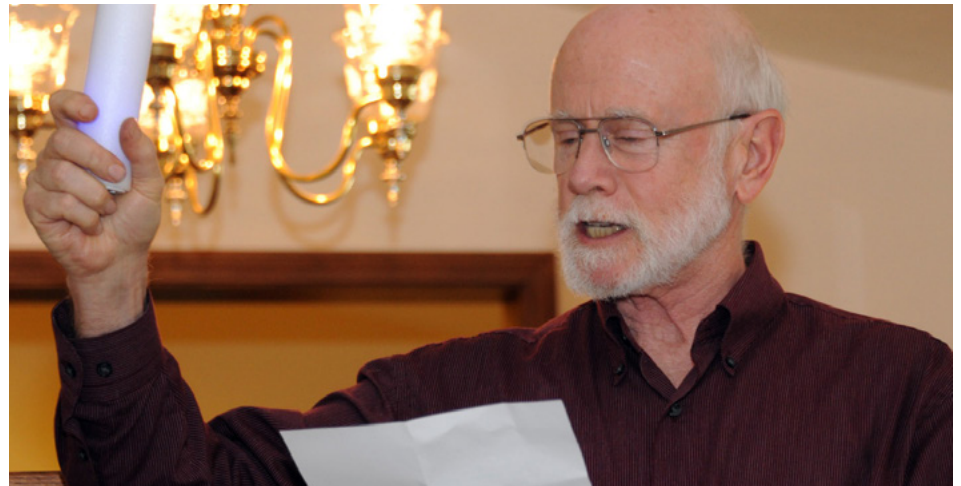
Dave Birkes with his new Beaver sweatshirt!



Bob Smythe, Ginny Lesser and Dan Schafer



Dan Schafer at his retirement party.



Bob Smythe reading a limerick to honor Schafer at his retirement

Retrospective

A history of the Department of Statistics by Daniel W. Schafer

Read more online: stat.oregonstate.edu/content/history-department-statistics

THE BIRTH OF THE DEPARTMENT:

1919-1957

In 1919, the Oregon Agricultural College offered its first two statistics courses: one introductory course and one upper-level course both with the same name, Elements of Statistical Methods in the Economics and Sociology Department. During the next decade, more statistics courses were introduced in the Departments of Mathematics, Business Administration, Education, Economics and Sociology, Farm Crops and Agricultural Economics.

In 1932, the Mathematics Department introduced the Mathematical Theory of

Statistics sequence for its own majors. The instructor, William Kirkham, had just published the book *Elements of Mathematical Theory of Statistics* with Forestry and Economic Applications in 1931. Kirkham also started a university statistical consulting service in the 1930's, but the program petered out during the Depression and was discontinued.

After World War II, new assistant professor Jerome Li joined Kirkham and P.C. Hammer to teach statistics courses in the mathematics department.

Several events in 1946 and 1947 strengthened the statisticians' ties

with the Agricultural College, paving the way for the birth of the Statistics Department.

Li assumed two major responsibilities: taking over the Applied Statistics courses when Hammer left for Wisconsin in 1947 and reviving Kirkham's statistical consulting and computing service for the Agricultural Experiment Station. Apparently motivated by colleagues in Agriculture, Li dropped the calculus prerequisite from the Applied Statistics course to make it more accessible to agriculture graduate students. Initially taught to six graduate students from the Agriculture



N°54. SCENE AT O.A.C. CORVALLIS, ORE

College, course enrollment in the sequence increased manifold when GIs returned from the war.

In 1953, the Statistical Consulting and Computing Service became the Department of Statistical Service. Lyle Calvin from North Carolina State University was the first faculty hired at the University to have a Ph.D. in Statistics. Calvin was hired as an



Retrospective

(Continued)

assistant professor of statistics. Roger Petersen, another Statistics Ph.D. from North Carolina State, was hired as an Experiment Station assistant professor in 1955. With its own budget for statistical service and two additional assistant professors devoted entirely to statistics, the Department of Statistical Service became the center of statistics on campus.

In 1957, the Department of Statistical Service was organized as an instructional unit in the School of Science, independent of the Mathematics Department, and was responsible for coordinating statistical instruction on campus. The Department was physically located in Extension Hall in the home of the consulting and computing service. Li, Calvin, Peterson and Richard Link were the original faculty members, with Li the first chairman.

At that time, the department offered a master's degree in Statistics and minor degrees on master's and Ph.D. degrees in other departments.

GROWTH OF THE DEPARTMENT

UNDER CALVIN:

1961–1981

In 1961, Oregon State College was renamed Oregon State University, the Statistics Department acquired its first computer—an IBM 1620, and Jerome Li served his last year as chairman.

Lyle Calvin was chair of the Statistics Department from 1962 to 1981. More than any other person, Calvin shaped

the modern Oregon State University Statistics Department. In the early 1960's, Calvin envisioned a future where faculty who could participate in both consulting and research and could focus particular interests in areas of fisheries and wildlife ecology, system simulation, stochastic processes, biometry and sampling techniques.

While the department anticipated an increase in the training of mathematical statisticians, it's clear that Calvin placed a major emphasis on applied programs for instruction, research, and service; as well as on research into methodology associated with consulting services projects.

This vision fueled remarkable growth. Sixteen tenured or tenure-track faculty members were hired in a 7-year span from 1962 to 1969: Donald Chapman, William Lowry, Donald Jensen, Edwin Hughes, Donald Guthrie, Kenneth Rowe, Scott Overton, David Faulkenberry, Donald Pierce, Thomas Lindstrom, Fred Ramsey, David Thomas, Charles Land, Norbert Hartman, Hugh Dan Brunk and Justus Seely.

The first statistics master's degrees were granted in 1962. In 1965, a doctoral program was added and new minors were offered in Biometry and Operations Research. The first five Ph.D. degrees in the Statistics Department were awarded in 1969.

Despite the rapid growth of the Department in the 1960s, its status was not altogether secure. The Dean

of the College of Science didn't see a need for statistics, which prompted intense discussions about the future of the department. This came to a head in 1968, when Calvin commissioned an outside review by David Blackwell, William Kruskal, and Lincoln Moses. In their report, these eminent statisticians found much that was good, praised the department for its collaboration with other units and determined the primary weakness to be a deficiency of mentors for Ph.D. students. The recommendation to hire a senior faculty member forced the dean's hand. The department was allowed to continue and to search for a senior faculty, which led to Hugh Daniel Brunk's hiring. Brunk's pioneering work in isotonic regression and mathematical statistics immediately enhanced the reputation of the department.

MILESTONES:

THE SURVEY RESEARCH CENTER

The Oregon Fish and Wildlife Service was legally mandated to estimate the effects of fisherman and hunters on fish and wildlife populations, but lacked the expertise to do it themselves. Calvin, Roy Young, the Dean of Research and Bob Mason used their funding to create the Survey Research Center (SRC) in 1973. The SRC resided in the Statistics Department, with Calvin serving as director. This made sense because most survey centers that were forming in social science departments lacked the statistical expertise to produce credible results. At that time, Iowa State and Oregon State had the only Survey Centers that were embedded in Statistics Departments.

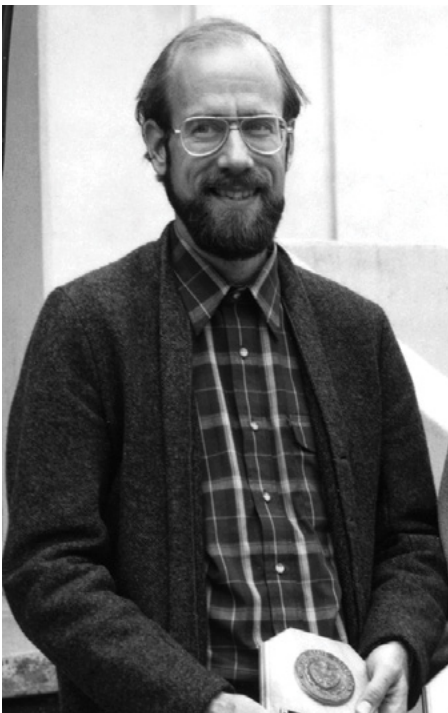


Lyle Calvin

RECENT ERA:

1982-2010

Dave Faulkenberry became the department chair in 1981 when Calvin stepped down to become Dean of the Graduate School. Justus Seely took over from 1984 to 1997. When Seely retired, the department had limited senior faculty so the department conducted an external search that led to the hiring of Bob Smythe, who had been chair at George Washington University.



David Birkes

Smythe served as chair at OSU from 1998 until 2008 with Dan Schafer following him in 2008. The economic picture for higher education in Oregon was bleak during this time. The Statistics Department owes a great deal to Seely and Smythe for their perseverance in representing the department through this period.

The gender composition changed remarkably in these years. In 1982, all 14 of the Department's tenure-track faculty members were male (and mostly named Dave, Dan, or Don). In 2010, there were four male and five female tenure-track faculty members. In 2009, Ginny Lesser became the first female promoted to full professor and became the chair of the department in 2011.

ENVIRONMENTAL STATISTICS AND OTHER CONTRIBUTIONS

Early collaborations with the College of Forestry, the Department of Fisheries and Wildlife and the Geography Department led to an emphasis on statistics associated with natural resources and environmental

monitoring. Calvin worked on salmon returns to Oregon's rivers and streams for many years. W. Scott Overton (1965-1993) had a joint appointment with the College of Forestry and worked closely with the Environmental Protection Administration (EPA), making major contributions to several aspects of EPA's National Surface Water Surveys conducted in the 1980s and to EPA's Environmental Monitoring and Assessment Program (EMAP).

Don L. Stevens (2001-2010) obtained EPA funding for the Department through the Designs and Models for Aquatic Resource Surveys (DAMARS) program. He continued to refine and promote an environmental sampling methodology that he had developed with another former student, Tony Olsen.

Other notable research contributions include Brunk's pioneering work on isotonic regression and Pierce's major contributions to methodology for radiation health epidemiology.

Several faculty members had substantial impacts on students, including Dave Thomas, whose knowledge, sensibility and generosity defined the culture of the department for many years; Justus Seely, whose commitment to the department and students was exceptional (and often entertaining); and Dave Birkes, who has played an unheralded role in the completion of many Ph.D. theses. Birkes won the Statistics Students' Teacher of the Year award in 10 of the 39 years it's been given. ■



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