One of the less common duties of a department chair is to handle any unfinished business for faculty in memoriam. When our esteemed colleague Professor Peter Hall passed away in January 2016, he left us with a great deal of treasures, including a multi-year grant award from the National Science Foundation (NSF). Since NSF did not like any dead person as an award holder, I had the honor of becoming the principal investigator of Peter’s award, and inherited a few bucks to spend (well, it was much more than a few bucks). Following Peter’s wishes, the money was used to support our semi-starved graduate students. People were happy.

Then troubles came. Last summer was the time to submit a closing report for Peter’s grant to NSF. I did not know what to do and what to write. So, I asked Google God, who then told me that Peter published at least 7 papers in the topmost journals in the past 12 months. “Geeze!” I said. “Peter was still publishing 18 months after his death.” It was truly remarkable especially considering Peter was seriously sick for a prolonged period of time before his death. (A major part of my report was the summaries of these 7 papers and NSF accepted it within 2 days of submission.)

Yeah, why did he choose us? And I think a main reason was, after all, the quality of our faculty is not that bad.

We are not a big department, but we have world leaders in many subfields of statistics. Our faculty are award-winners and have served as the editor-in-chief for quite a few leading journals. We publish in the highest quality outlets. On top of that, we are running one of the largest statistics undergraduate programs in the country. And our graduate programs are in high demand. Indeed, we are damn impressive!

Thanks to the support of our UCD senior administration, we will have two new faculty members join the department in July, which will make our faculty size record high. I promise, we will keep up the legacy that Peter left with us.

Lastly, if you did not know Peter, he was one of the foremost and prolific researchers in our field. Among his many honors, he was named in 2013 as an officer of the Order of Australia, the highest honor of that country. In the same year he was also elected as a Foreign Associate of the National Academy of Sciences in the U.S. You can read more at: http://peterhallmemorial.ucdavis.edu/
DEPARTMENT ANNOUNCEMENTS

Professor Emeritus Prodyot Kumar (PK) Bhattacharya passed away on March 9, 2018. He was one of the founders of our department, as well as a leading researcher in nonparametric statistics, stochastic processes, sequential statistics, and change-point problems. He is survived by his wife, Mrs. Srilekha Bhattacharya, and his two daughters.

New Faculty Hires, arriving Fall 2018

Krishna Balasubramanian joins us from Princeton University where he currently works as a postdoctoral scholar at Statlab (ORFE) with Professors Jianqing Fan and Han Liu. He previously worked in the Department of Statistics at the University of Wisconsin-Madison. He received his PhD in Computer Science at Georgia Tech in 2014. His research focuses on addressing inferential and computational issues that arise in statistical problems.

Shizhe Chen joins us from Columbia University where he works as a postdoctoral research scientist at the Department of Statistics and the Grossman Center for the Statistics of Mind. He received his PhD in Biostatistics at the University of Washington. He is primarily interested in emerging statistical problems in learning large complex biological systems from massive data, and recently developed an interest in applications in neuroscience.

Staff Changes

Pat Aguilera, the Management Services Officer (MSO), retired in June of 2017 after 15 years with the Statistics department. Prior to her time with us, she served as the MSO for School of Medicine - Internal Medicine for 2 years. Pat retired with 20 years of UC Davis experience. We’ll miss you, Pat!

Pete Scully was promoted to MSO in June 2017, following the retirement of Pat Aguilera. Pete has worked in the department for 11 years as the Graduate Program Coordinator, and we are grateful to have him in this new role.

Jillian Hancock joined the department in May of 2017 as the new Master’s Program Coordinator. She previously worked in the Yellow Cluster for 1.5 years. She is a UCD alum.

Cristeta Rillera was hired as the new Graduate Program Coordinator (PhD) in August 2017. She previously served as the Graduate Program Coordinator for the department of Neuroscience for over 10 years. She is also a UCD alum.
**Faculty Spotlight**

**Distinguished Professor Hans-Georg Müller** received two awards this year. In January, he received the Gottfried E. Noether Senior Scholar Award for 2017. This prestigious award is presented alongside the Noether Junior Scholar Award by the American Statistical Association, and carries an endowment fund to recognize distinguished researchers and teachers and to support research in the field of nonparametric statistics. The recipient of this award is invited to deliver a special lecture.

In June, he also received the Humboldt Research Award. This award is granted in recognition of a researcher's entire achievements to date to academics whose fundamental discoveries, new theories, or insights have had a significant impact on their own discipline and who are expected to continue producing cutting-edge achievements in the future.

**Professor Jiming Jiang** was designated a Yangtze River (Changjiang) Scholar in 2016. This award is widely considered as the highest academic honor issued to an individual in higher education by the Ministry of Education of the People's Republic of China. Dr. Jiang is among 53 scholars worldwide, and across all subject fields, who have been awarded this year's Chaired Professor Awards. He is the only 2016 recipient in the field of "mathematical statistics".

**Distinguished Professor Emeritus Francisco Samaniego** was elected as a 2016 Fellow of the American Association for the Advancement of Science (AAAS). The AAAS is an international non-profit organization formed in 1848, whose mission seeks to "advance science, engineering, and innovation throughout the world for the benefit of all people." In October 2016, the AAAS Council elected 391 members as Fellows of the association, in recognition of their contributions to innovation, education, and scientific leadership. The tradition of electing AAAS Fellows began in 1874 to recognize member for their scientifically or socially distinguished efforts to advance science or its applications.

**Student Shoutouts**

**2017 Best Student Paper Award**

Graduate student Haoran Li was announced as the winner of the Best Student Paper Award from the International Chinese Statistical Association (ICSA). Haoran, who joined the PhD program in 2013 from Shandong University, won the award for his paper entitled "An adaptable generalization of Hotelling's T2 statistics in high dimension". The paper was presented during the annual three-day meeting of the International Chinese Statistical Association held from June 25-28, 2017 in Chicago, IL. Congratulations, Haoran!

**MPS Dean's Graduate Student Prize**

Jilei Yang is a PhD candidate in who is interested in graphical models, machine learning, and statistical modeling for business applications. He received the Division of Mathematical & Physical Sciences Dean's Graduate Student Prize in June 2017. Winners are chosen for their high academic standing, scholarly achievement, and a record of outstanding undergraduate teaching. Jilei is the first Statistics student to receive this prize.
Faculty Research

Here's what a few of our faculty members are up to with their research:

Hao Chen, Assistant Professor
My research interests are developing new non-parametric tools for analyzing high-dimensional data and non-Euclidean data, such as new two-sample tests based on similarity and new anomaly/signal detection methods for streaming data. I am also interested in developing efficient statistical tools for analyzing genomic data.

Cho-Jui Hsieh, Assistant Professor
Our lab is mainly working on efficiency and robustness of machine learning. In terms of efficiency, we are interested in developing novel optimization algorithms and distributed training methods to speed up deep neural network training. We are able to train a state-of-the-art ResNet-50 model in 15 minutes using a CPU cluster. Furthermore, we develop algorithms to facilitate the use of deep and complex models on mobile devices by compressing the model and speeding up the prediction time. Finally, we are extensively working on adversarial examples in deep networks---how to attack, how to defense, and how to provide performance guarantee for state-of-the-art networks.

Hans-Georg Müller, Distinguished Professor
Hans-Georg Müller works in Functional Data Analysis, with recent emphasis on foundational questions such as how to construct a density in function space, multivariate functional data, where data consist of a vector of random functions, and functional data on Riemannian manifolds. His interests also include the modeling of samples of random functions and the development of tools such as Frechet regression for the analysis of general random objects. In applied research, he continues to work on statistical methods for neuroimaging and growth modeling, and also participated in a consortium to sequence the wheat D genome (Aegilops Tauschii), which very recently completed its work and published the sequence in Nature. Statistical modeling was instrumental to infer features of the evolution of this genome.
New Major Track! Fall 2017

A new Statistical Data Science track was launched this year within the Statistics undergraduate major. This track emphasizes data handling skills and statistical computation and is recommended for students interested in statistical learning methodology, advanced data handling techniques, and computation aspects of statistical analysis.

Surge In Undergraduate Majors

The Statistics major for undergraduates has surged in the last academic year. Last year, we had about 460 declared majors, and we expect to reach around 600 by the end of this academic year.

RTG Symposium

The Research Training Group (RTG) Statistical Sciences Symposium: Geometry, Statistics, and Data Analysis was held in May 2017. It featured presentations from an array of speakers, including faculty from UC Davis, Stanford, Duke, Notre Dame, Göttingen, and a few of our fellow UC campuses. This symposium was organized by Hans-Georg Müller, Xiaodong Li, and Wolfgang Polonik.

iidata: Data Science Convention

The iidata 2017 convention was held on February 4, 2017 at the UC Davis Conference Center. This is the 2nd annual data science convention at UC Davis, entirely run by students, and was attended by over 300 people. This event is meant to bring together students, mentors, and industry workers who are passionate about data science.

This year included 2 competitions: an on-site Timed Analysis Competition and a long-term Predictive Modeling Competition. Undergraduate and graduate students from UC Davis and neighboring universities had an opportunity to present their research in exhibitions.

There were hands-on workshops on topics such as Intro to R, Intro to SQL, Computing in R, Intermediate R., and Shiny. Tech Talks included presentations from tech companies, such as Cisco, Lumo Bodytech; financial companies, such as TrueAccord and River City Bank; and a nonprofit company dedicated to AI research, Machine Intelligence Research Institute (MIRI).
2017 Awards Ceremony

Each Spring we hold an awards ceremony to honor our outstanding undergraduate and graduate students. Here are the recipients for the 2016-17 academic year:

**Undergraduate Awards**

**Departmental Citations:**
Chad Pickering, Patrick Vacek, Graham Smith, Christopher Wong, Richard Safran, David Fung, Tiffany Chen, Edie Espejo, Rico Lin, Un Leong, Daniel Iong

**Outstanding Performance:**
Un Leong, Daniel Iong, Andrew Chin, Courtney Louie, Xinyue Li, Yuwei Chen, Ziheng Zhou, Ming Huang, Runsheng Lin, Eric Painting, Nina Magnuson, Yi Zhu, Yurne Zhang, Yuqing Liu, Weizhou Wang, Haozhe Gu, Huiling Chen

**Outstanding Undergraduate Student:**
Edie Espejo

**Graduate Awards**

**Julius Blum Award**
Yaqing Chen

**Peter Hall Graduate Student Research Award**
Xiongtao Dai

**Alan Fenech Outstanding Student Service Award**
Teresa Filshstein, Irene Kim

**Statistics Excellence in Graduate Student Teaching Award**
Nick Ulle

**Statistics Teaching Recognition Award**
Dmitriy Izyumin, Michael Bissell, Jilei Yang, Lynna CHu, Tania Roy, Ozan Sonmez, Yang Zhou, Qi Gao, Chris Conley, Olivia Lee, Hao Ji, Alice Li, Katie Dahlhausen

**Outstanding Masters Student Award**
Junwen Yao, Xinyi Hou

**Graduate Studies Travel Awards**
Xiongtao Dai, Yifei Wang

**Dissertation Year Fellowship**
Jilei Yang
After spending a year at Colorado State University following the completion of my PhD at UC Davis in 2013, I have been serving as an assistant professor in the Department of Mathematics at Western Washington University in Bellingham, Washington. I consider myself fortunate as the PhD program has helped me immensely to build my career in academia where I enjoy both research and teaching. My research interests include multiple comparisons, time series analysis, statistical graphics, and applications to psychology, finance, and environmental science.

At UC Davis, I investigated nonparametric volatility modeling and forecasting, a timely topic back then due to the financial crisis in 2008. One important lesson I learned from that project is that it takes a great deal to understand what data are actually trying to tell us. Data are often skewed, heavy-tailed, and/or noisy, requiring appropriate data transformation(s) and signal extraction to come up with something useful and reliable. Unfortunately, it is often the case that users of statistics simply report p-values or fit a model without checking underlying mathematical assumptions, a dangerous practice. Instead, appropriate visualizations of the original data or the residuals can in fact greatly enhance understanding of the data we are dealing with.

I am happy to note that my PhD experience at UC Davis has had positive impacts on the statistics program at Western Washington University. For example, the exploratory data analysis (EDA) is now greatly emphasized in my linear regression and time series courses. With solid EDA, several student project reports have already resulted in publications or formal presentations. On a greater scale, that experience helped me play a central role in developing the Statistics major and minor. We are expected to have our first graduates with the Statistics degree at the end of this academic year, and I am very much excited about it.

I earned my Master in Statistics and Ph.D. in Epidemiology from the University of California, Davis in 2017. After graduation, I joined 23andMe R&D as a Scientist in Biostatistics, and is mainly working on developing analytical methods and conducting statistical analyses using large complex genotypic and phenotypic data. 23andMe’s mission is to help people access, understand, and benefit from the human genome, and the huge health database offers me great opportunities to gain hands-on data experience in a commercial environment to better understand wellness and disease.

As a health professional for more than ten years, I have long been impressed by the significance of statistics in improving people’s quality of life. Having studied epidemiology and worked closely with many statisticians, I have seen the application of statistics first hand, which sparked my long-term desire to pursue an advanced degree as well as obtain systematic and extensive training in statistics. Therefore, I started to take courses from the Department of Statistics, and officially enrolled as a master student in 2016. The MS program prepares me comprehensive training in statistical concepts, methodologies and data analysis skills. The courses are well-designed and large research-based. The faculties in the department are very kind and helpful, and their teachings are impressive and clear.

I would suggest students who enrolled in other majors and are interested in statistics applying for the double major master program. The systematic training will be better and more effective than the self-learning, and will definitely be beneficial to your career. Moreover, for current and future statistic students, I would highly encourage you to take advantage of research opportunities in our Statistics Department or other related departments at Davis as early as possible, and obtain more hands-on project experience in real data using your strong analytical skills.
ALUMNI CORNER

One of the most common question I get is “What is an Actuary?” It almost sounds like we are not from this world. (Maybe we really aren’t?) To answer this question, we have to go all the way back to 2012, when I was finishing my last year of undergraduate study in Mathematics and Statistics at UC Davis. That’s when I completed the first actuarial exam, which by statistics only have 40% passing rate, and submitted my application for the Integrated Degree Program (IDP), a one-year Master’s program. At the time, there was zero (if not negative) correlation between the two events.

However, I soon found out that a tenure track is not for me, and the probability that I become unemployed is 100% if I don’t find a career path before I graduate in summer 2013. That’s when I tried to take the second actuarial exam and failed miserably, realizing that knowledge is not power, but applied knowledge is power. Since then, I spent hours of preparation on the exams and, thanks to law of large numbers, my effort eventually paid off and I am now an Associate of the Society of Actuaries (ASA) working at Delta Dental of California as an Actuary Supervisor. The moral of the story? If you try something hard enough and the possibility is non-zero, the likelihood to get your desired results converges to 1.

But wait! What is an Actuary anyways? In short, we are the ones that manages risk for large corporations, insurance companies, investment banks, pension funds, social security, or anyone that deal with risk. One of the most important metric for becoming an actuary is knowing how to ask “good” questions, which I have learned throughout my Bachelor’s and Master’s study in Statistics at UC Davis. To give a few examples, we often have to ask ourselves whether the model that we have built reflect the accurate assumptions, whether the factors that we have analyzed are truly independent, and whether the conclusions we draw are statistically significant. Often times, there is more than one way to analyze the data and different analysis could provide similar or completely opposite results, which then lead to the question “why are they different?” and “Which one is more accurate?” It may take years of experience and practice to ask and answer these questions, which is also the fun part of doing actuarial work.

There is always risk, and there is always data.
UC Davis gets a new Chancellor! Dr. Gary May joined us on August 1, 2017 as our seventh chancellor. He previously worked at the Georgia Institute of Technology for nearly 30 years, and most recently served as the dean of the school's College of Engineering. May received the Presidential Award for Excellence in STEM Mentoring in 2015 from President Barack Obama. He has worked hard throughout his career to establish more diversity in higher education and the workplace. May's strategic plan for UC Davis, titled "To Boldly Go...", stems from his love of the Star Trek television series, and focuses on retaining excellence and innovation across campus.

The UC Davis Silo area has been under construction throughout the 2016-17 academic year, and was completed in Fall 2017. The outdoor patio has been revamped to include space for 4-5 food trucks, with the Shah’s Halal Food a continuing staple and the rest rotating daily. Due to the Sodexo contract ending, many restaurants in the Silo closed, including Starbucks, Pizza Hut, Carl's Jr., and Taco Bell. These have been replaced with Peet’s Coffee, university-run Spokes Grill, and Crêpe Bistro, a new built-in location of the crêpe stand that was in the previous iteration of the Silo. Much-needed additional seating was added as well. The Silo Market, located in the South Silo, also recently opened, providing Aggies with deli sandwiches, personal-sized pizzas, and an array of pre-made meals, drinks, and packaged snacks. The Gunrock, previously known as Gunrock Pub, reopened sans alcohol sales—which they say they did not sell much of previously.

The 103rd Picnic Day was held on April 22nd, 2017, coinciding with Earth Day. The theme for the annual event was "Growing Together", which highlights the growth of UC Davis from its humble beginnings as the University Farm. While the event normally serves as an open house for UC Davis, this year’s event also celebrated the city of Davis’s 100th anniversary.
Sketching Davis

The sketches throughout this newsletter are drawn by none other than our own MSO, Pete Scully. Pete is an avid urban sketcher who draws the everyday world around him in ink line and watercolor wash using his sketchbook to have a conversation with his environment. He has released two books on sketching, and will be attending the 9th International Urban Sketchers Symposium in Porto, Portugal this summer.

Gifts large and small make all the difference to our department and help to support our outstanding academic programs and make innovative statistical research possible.

To make a gift, please contact Charlene Mattison at 530-752-3429, or at cmattison@ucdavis.edu. 

Or, you can make your gift online.

Would you like to be in our next newsletter? Do you have a story to share?

Please get in touch at stat-grad-staff@ucdavis.edu.

We love to hear from our alumni!

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