



# The Y-Distribution

Brigham Young University

Department of Statistics

Vol. XXI July 2017

## FROM THE CHAIR

DR. WILLIAM F. CHRISTENSEN



It has been a season of change and growth for the department this year. Change came in the form of new leaders in both the College and the department. After 5 years at the helm, Dennis Tolley stepped down as chair to have more time to pursue exciting new research opportunities. Dennis Tolley and Gil Fellingham (Associate Chair) have led the department through a period of unprecedented growth in our number of majors, increasing from just over 200 in 2012 to nearly 450 today. During that period the statistics faculty also gained two positions, thanks in large part to the sacrifices and efforts of Dennis and Gil. We are indebted to their service, vision, and passion for BYU.

On July 1, Shane Reese was appointed the Dean of the College of Physical and Mathematical Sciences (CPMS), which houses the departments of Chemistry, Computer

Science, Geology, Math, Math Ed, Physics, and Statistics. Shane is the first statistician to lead CPMS. Although we are sad that his presence in the Talmage building will be less ubiquitous, we are thrilled that his leadership, vision, and enthusiasm will be of benefit to an even larger slice of BYU's students, alumni, and faculty.

Also on July 1, I assumed the duties of chair. Gil Fellingham will continue as Associate Chair until January 2018 when David Dahl will return from a sabbatical to assume the role. I am grateful to them for their willingness to serve. Because I have taken classes from or worked with nearly all of BYU's former department chairs, I accept this position with humility and a great sense of weight. I have experienced first-hand their commitment to the welfare of their students and have also witnessed their devotion to BYU. I owe each a debt of gratitude and pledge to build upon the solid foundation that each has helped to develop.

Our majors are graduating in a timely fashion and finding good jobs. In the most recent College Commencement, the Department of Statistics awarded 98 Bachelor's degrees, accounting for 25% of the College's undergraduate degrees. The Department of Statistics also awarded a little more than one third of the College's graduate degrees with 15 M.S. diplomas awarded. A hearty congratulations to all of our wonderful and accomplished students!

I would like to conclude by thanking our alumni who financially support our scholarships and programs and volunteer their skills and advice in developing our academic programs. You are our greatest asset and we are proud of your work and your lives.

These and many other accomplishments are due in large part to our dedicated and talented faculty who educate so many majors and service-course students AND succeed in scholarship and leadership in the profession. Below are a few of the projects and success

stories that are associated with our faculty.

**Dr. Candace Berrett's** research focuses on Bayesian spatio-temporal models for environmental applications. This year she was granted continuing faculty status and promoted to associate professor. She continues working with collaborators across the department, university, and nation.

**Dr. David Dahl** recently finished a grant from the National Institutes of Health on Bayesian nonparametric methodology for protein structure prediction. He continues to study flexible Bayesian models for clustering and feature allocation and looks forward to teaching the graduate Bayes course next academic year. Dr. Dahl also has several projects in statistical computing and is advising two graduate students.

**Dr. Dennis Eggett** has been busy this year with the Consulting Center and projects involved therein. He has been working with the IACUC committee on campus.

**Dr. Gilbert Fellingham** continues his work in sports analytics. This year he'll be working with the football team to determine the risk associated with certain play-types to help solidify the coaching staff's offensive philosophy. This coming year he'll have students working with football, men's and women's basketball, women's volleyball, men's and women's tennis, and men's and women's soccer teams. He is also working on a project to help identify ideal team makeup in beach volleyball. He continues to work on the value of nonparametric Bayesian methods in prediction of performance. He will also be working as the volunteer assistant coach with the women's volleyball team this year.

**Dr. Scott Grimshaw** continues to collaborate on research projects in higher education administration and spot-welding technologies for automotive applications. He also does research combining data from different entertainment platforms and modeling audience to allow decision makers to predict the impact of their choices.

### DEPARTMENT OF STATISTICS FRIENDS AND ALUMNI OPEN HOUSE BREAKFAST 2017



If you are attending the JSM 2017 in Baltimore, Maryland, please meet us at our

annual Brigham Young University Friends and Alumni Open House Breakfast. We look forward to seeing you there!

Date: **Tuesday, August 1, 2017**

Time: **7:00 AM**

Location: **Hilton Baltimore**

401 W Pratt St, Baltimore, MD 21201

Room Name: **Ruth**

**Dr. Brian Hartman** continues to work on the interface between statistics and insurance. This year he published papers in health insurance, long-term care insurance, and electric utility risk management. He is currently working on projects in long-term care, loss reserving, health insurance, and finance. This year he was invited to speak at the CAS Spring Meeting, SOA Annual Meeting, Life & Annuity Symposium, and the Enterprise Risk Management Symposium.

**Dr. Matthew Heaton** is working on applying spatial methodology to applications in traffic safety, disease, agriculture, remote sensing, and forestry. He is collaborating with researchers from the Departments of Health Science, Plant and Wildlife Science, Geography and Civil Engineering. His research, along with student support, is currently funded by the National Institute of Environmental Health Science and the National Science Foundation.

**Dr. John Lawson** published two articles last year. The first, "Mixture Experiments in R, using mixexp", was published in the *Journal of Statistical Software*, and the second, "Practical comparison of traditional and definitive screening designs in chemical process development", appeared in the *International Journal of Experimental Design and Process Optimisation*.

**Lynne Nielsen** completed developing the Stat 121 course offered by BYU Online on a large scale. She has also been collaborating with faculty from the School of Education to publish research on flipped classrooms and enhanced instructional dialogue in distance education. She continues to be involved in BYU's WomanStats project whose aim is to make the linkage between the status of women and fate of nations visible and demonstrable. She has been exploring the relationship among inequitable family laws, level of violence against women, and state peacefulness with data from 176 countries funded by grants from the Department of Defense.

**Dr. Garritt Page** continues to work on dependent random partition models, repulsive processes, and functional clustering. These projects are very much collaborative and include folks at BYU and at universities in Chile and Scotland. He also was able to spend the summer at the Basque Center of Applied Mathematics developing methods to estimate growth curve derivatives as well as

perform a bit of sports analytics.

**Dr. Shane Reese** spent the last year working on projects with the Exercise Sciences Department doing functional analysis of movement patterns. Jointly with Dr. Page and Dr. Dahl, Dr. Reese has been developing nonparametric Bayesian approaches for clustering functional movement patterns to better help clinicians. Dr. Reese has also worked jointly with Dr. Christensen developing spatio-temporal models for mass balance of glaciers in Antarctica and high mountain Asia (Himalayas). In addition, continual work in collaboration with Civil Engineering (Dr. Grant Schultz) on effects of safety interventions in traffic studies (funded by UDOT) has been a focal area for the year. Closely related is Dr. Reese's involvement with a National Academy of Sciences committee tasked with the evaluation of safety in guardrail end treatments nationwide.

**Dr. Robert Richardson** has continued researching methodology in spatio-temporal modeling with integro-difference equations. He has also been researching flexible non-linear spatio-temporal methods using stochastic differential equation representations. Current research projects including modeling processes motivated by stochastic differential equations with non-Brownian motion error processes. This last project will have applications in chemistry, ecology, and actuarial science

**Dr. Del Scott** has been teaching at BYU for 40 years, as of this month. He began his first year of teaching in July of 1977. He started school in 1964 as a statistics major and, except for his time at graduate school and while serving a mission, has spent the last 53 years here at BYU.

**Dr. Shannon Tass** has been working on several collaborative projects this year. She is a member of the Autism Connect research team, a multidisciplinary group at BYU committed to improving the lives of individuals and families with autism spectrum disorders through scientific research. Her work with this group has prompted her to pursue a new research area in statistics and analysis for brain imaging, specifically fMRI. She also continues to have fruitful collaborations with faculty in the geology department. A paper with her collaborators about the spatial patterns of structures on Jupiter's moon Io is soon to appear in the journal *Icarus*.

**Dr. Dennis Tolley** has been working on statistical methods in gas chromatography as well as working on the "denumeration" algorithm. Both of these projects entail both mathematical development and statistical implementation. Although this last year has seen progress on both of these, with his release as Chair, he anticipates more time for both of these projects and more progress in finalizing results. He is also adding to his worklist, research on some basic models for analysis to stochastic process data, assuming a non-Gaussian response variable. These models are readily applicable to a family of actuarial problems.

## NEW FACULTY



**Richard Warr** will be joining our faculty as an Assistant Professor Fall 2017. He earned a Ph.D in Statistics from the University of New Mexico (2010).

Before joining our faculty, Richard served in the U.S. Air Force (1997-2017). During a portion of that time he was an Assistant Professor of Statistics at the Air Force Institute of Technology (2010-2014).

His current research interests are in applied probability, Bayesian nonparametrics and multi-state models. Richard's teaching experience includes several introductory probability and statistics courses, Bayesian inference, computational statistics, and reliability.

## VISITING AND ADJUNCT FACULTY

**Taylor Redd** will be joining our faculty as an adjunct instructor in Fall 2017. He received his bachelor's in Math in 2009 and his master's in Statistics in 2011, both from BYU. Since then, Taylor has held statistician and data science positions at various start-up companies (Qcure and Qualtrics). He is currently a Data Science Consultant at Adobe Systems in Lehi where he works with Adobe's clients to better understand their web traffic data. His areas of interest are Bayesian methods, big data analysis, data visualization, and statistical programming.

**Carly Pendelton** has been an instructor for the past year. She is teaching our online classes, Stat 121 (Intro to Stat) Stat 123 (Intro

to R Programming) and Stat 124 (Intro to SAS Programming).

**Dr. Jie Wang** has been working on some projects as part of developing her teaching for our survival analysis course, Stat 538. These projects covered general survival data modeling, survival models with time-dependent variables, and model selection and assessment methods, etc. This work will help the students to understand survival data modeling more deeply and thoroughly.

**Dr. Brad Barney** has been working with Garritt Page and other colleagues on three projects; two related to Bayesian geometry and one focused on Bayesian methodology for the construction of growth curves for pre-term infants. He continues working on applications of Benford's law to forensic accounting and is also investigating the impact of course instruction on student performance with colleagues from Georgia.

**Jared Ward** is currently teaching our advanced SAS programming courses. Congratulations to Jared for finishing 6th in the 2016 Rio Olympic's men's marathon with a time of 2:11:30. He also competed in the Boston Marthon in April and finished in the top ten with a time of 2:15:28.

**Dan Williams** has been an adjunct faculty member since fall 2003. He teaches our Methods of Survey Sampling each fall. He uses the biannual Utah Colleges Exit Poll activities to supplement the students' education where they receive practical experience with real time survey sampling.

**Dr. Greg Snow** teaches our statistical computing course (Stat381) every winter semester and an evening section of Stat 121. He has been with us since September 2003.

## AWARDS

**Gil Fellingham** received the Distinguished



Citizen Award from the College in February 2017. He has completed 14 years as Associate Chair and Graduate coordinator for the Department of Statistics. This tenure of

service has been under three different chairs. All have glowing praise for Gil's service to the department and the University. Gil has also been involved in university activities with service in the athletic department as a member and chair of the University Athletic Advisory Board.

## OPPORTUNITIES TO TEACH

Ever thought it would be nice to contribute to the teaching mission at BYU? We regularly need adjunct professors to teach daytime and evening classes. If you think you might be interested in teaching classes, let us know. We are particularly in need of adjunct faculty to teach on campus, but there are periodically opportunities to teach in the Salt Lake Center or online. We generally need persons with at least an M.S. in statistics or biostatistics. To get on our list of potential instructors, send an email to Ruth Dauwalder at [ruth@stat.byu.edu](mailto:ruth@stat.byu.edu).

## 42ND ANNUAL SUMMER INSTITUTE OF APPLIED STATISTICS



We had a great turnout at our 42nd annual Summer Institute. We were very honored to have Dr. Robert B. Gramacy from Virginia Tech, Department of Statistics present at our

42nd Annual SIAS.

The presentation covered statistical techniques at the interface between mathematical modeling via computer simulation, computer model meta-modeling (i.e., emulation/surrogate modeling), calibration of computer models to data from field experiments, and model-based sequential design and optimization under uncertainty (a.k.a. Bayesian Optimization).

The treatment included some of the historical methodology in the literature, and canonical examples, but primarily concentrated on modern statistical methods, computation and implementation, as well as modern application/data type and size. We returned at several junctures to real-world experiments coming from the physical and engineering sciences, such as studying the aeronautical dynamics of a rocket booster re-entering the atmosphere; modeling the drag on satellites in orbit; designing a hydrological remediation scheme for water sources threatened by underground contaminants; and studying the formation of super-nova via radiative shock hydrodynamics.

We would like to thank Dr. Robert B. Gramacy and all those who attended. Next year's SIAS will be held June 20-21, 2018. We look forward to seeing you next summer.

## Dean's List 2016

### Winter 2016

Rylan Bateman  
Mary Castro  
Micheal Christensen  
Gavin Collins  
Brandon Cook  
Joseph Cook  
Mark Cooley  
Jackson Curtis  
Nathaniel Duren  
Jacob Eliason  
Shandon Esplin  
Robert Gardner  
Emily Gatenby  
McKay Gerratt  
Elizabeth Hilton  
Caroline Hilton  
Justin Holmstead  
William Horton  
Benjamin Housley  
Simi Im  
Benjamin Jensen  
Jonathan Jensen  
Micaela Johnson  
Cameron Johnson  
David Lowe  
Ian McGetrick  
Patricia Miller  
Alexander Neilson  
Marelise Oberholzer  
Megan Oldroyd  
Sierra Pugh  
Gavin Ritchie  
Braden Sharp  
Emmy Smith  
Dean Sobczak  
Astrinia Subiantoro  
Andrew Sutton  
Michael Vaughn  
Juo-Chun Wang  
Spencer Wright

### Spring and Summer 2016

Regan Hartley  
Parker Howell  
Macy Pingree  
Emma Stewart  
Andrew Sutton  
Brittney Warner

### Fall 2016

Gabriel Adams  
Trevor Alder  
Nathan Andrews  
Elizabeth Bingham  
Emily Birrell  
Andrew Call  
Mary Castro  
Carver Coleman  
Gavin Collins  
David Daniel  
William Dixon  
Nathaniel Duren  
Elizabeth Gibbs  
Elijah Harmon  
Colin Hatch  
Nathaniel Jenkinds  
Thomas Jensen  
Christopher Kim  
Alexander Neilson  
Spencer Newcomb  
Marelise Oberholzer  
Thomas Ottinger  
Gavin Ritchie  
Samantha Sargent  
Madison Smith  
Dean Sobczak  
Astrinia Subiantoro  
Andrew Sutton  
Cason Wight

## 2016-2017 SEMINAR SPEAKERS

During Fall semester of 2016 and Winter semester of 2017, we were pleased to have many great presenters at our Thursday Seminar series. Those who presented during Fall 2016 included **Dr. Matt Bekker**, (Tree – Ring Tales), **Dr. Jenny Brynjardottir** (Learning About Physical Parameters – The importance of Model Discrepancy), **Devin Francom** (Predicting the Path and Inferring the Source of an Atmospheric Release), **Dr. Laura Hatfield** (Incorporating decision-maker loss functions in safety monitoring), **Dr. Anthanasios Kottas** (Bayesian nonparametric modeling for dynamic ordinal regression relationships), **Samuel Pimentel** (Large, Sparse Optimal Matching in an Observational Study of Surgical Outcomes), **Dr. Peng Shi** (Pair Copula Constructions for insurance Experience Rating), **Dr. Mickle South** (Statistical Challenges in the Everyday Life of a Clinical Researcher), and **Richard Warr** (A Hierarchical Nonparametric Bayesian Model that Integrates Multiple Sources of Lifetime Information to Model Large-Scale System Reliability).

Those who presented during Winter 2017 included **Dr. William Christensen** (Assessing latent dimensionality of a symptom battery in a sample with many subjects exhibiting no symptoms), **Dr. S. McKay Curtis** (Correlation \*is\* causation, It just may not be the causations you're looking for), **Dr. David Dahl** (Attraction Indian Buffet Distribution), **Dr. Bailey Fosdick** (Standard Errors for Regression on Relational Data with Exchangeable Errors), **Dr. Brian Hartman** (Bayesian multivariate regime-switching models: an application in correlated assets), **Dr. David Rackham** (Diagnostic Classification Modeling), **Dr. Dongchu Sun** (An Objective Prior for Hyperparameters in Normal Hierarchical Models), **Dr. Jessica Utts** (Data versus Belief: Statistical Studies of Psychic Abilities), and **Jared Ward** (Optimal Pacing in the Marathon).

It is always wonderful to have experts come and share their knowledge and experiences with our faculty and students. Our students look forward to and appreciate their presentations. We would like to thank all of those who participated in our Thursday Seminars.

## MASTERS GRADUATES AND PROJECTS

Beginning in 2017, those graduating with MS degrees either produced a portfolio of all the class projects completed during their graduate studies and defended three of those projects; or, if selected by a graduate faculty member, they could defend a research project in an area of interest of that faculty member.

### April 2017

#### Kaitlin E. Gibson

- Identifying Crash Risk Factors on an Interstate Network

#### Stephen B McKechnie

- BParameter Estimation for Kyperexponential Distribution
- Predicting Attrition of Valuable Employee
- Predicting Ozone Levels in the United States

#### Devin Paul Eddington

- Gene Analysis Simulation Study on AIC and BIC for Mixed Models
- Covariance Structure Selection
- Bayesian Hierarchical Models to Model Cognitive Responses

#### Braden Kinard

- An Ordinal Logistic Regression Model of Vote Share Swing in the 2016 Presidential Election
- A Bayesian Hierarchical Model of Airbnb Listing Prices
- Multiple Imputation in Job Performance Analysis

#### Kaylea R. Drake

- An Investigation into Methods of Estimation for the Scale Parameter of the Rayleigh Distribution
- An Analysis of Flight Departure Delay
- Understanding the Relationship Between Ozone and CMAQ

#### Matthew Goodwin

- Using Bayesian Compressive Sensing to Characterize Nonlinear Chirp Signals

#### Samuel Wold

- Expected Re-Sale Price of Used Cars

- Identifying Characteristics of Successful Home Run Hitters

- Analysis of the RBI statistic for the 2016 MLB season

#### Sean Miner

- UAGriculture Analysis Using a Gaussian Process
- The Cauchy Distribution with a Finance Application
- Identifying Characteristics of Successful Home Run Hitters

#### William White

- Estimation of NBAscoreing distributions using a finite Bayesian mixture model
- Predicting Used Car Prices
- Evaluation of the Effect of Ankle Taping Methods on Injury

#### Madison Phan

- A Study of Ground Level Ozone,
- Predicting Nu Skin Customer Ranking
- Predicting Nu Skin Customer Rank

#### Nathan W. Bean

- Modeling the Number of Goals in a FIFA World Cup Match
- Estimation of the Parameters of the Fisher-Bingham Distribution
- Modeling the Number of Absences at Secondary Schools in Portugal.

#### Nate Packard Garrett

- Using Gaussian Processes to predict Ozone levels
- Simulation Study of the Pareto Distribution
- Bayesian Hierarchical Model on Car MPG

#### Kevin Hilton

- Skew Normal Distribution
- Modeling the Number of Absences at Secondary Schools in Portugal
- A Bayesian GLM to Improve Jazz Shottng

#### Stephen G. Merrill

- Modeling NBA Shooting Efficiency
- Predicting U.S. Ozone Levels Using CMAQ & EPA Station Data
- Frechet Distribution Parameter Estimation

**Spencer Galbraith** - Realignment of Areal Data Using Spatial Point Process

## June 2017

### Kristina Murri

- A Study on Taping Procedures with Mixed Models

- The Burr Distribution

- The Relationship Between Happiness and Job Performance

## UNDERGRADUATE MENTORING

This year we had 32 students mentored by our faculty. Below is a description of the projects they worked on this year.

**Trevor Alder (Dr. Gil Fellingham, mentor)** researched the effect of play time on tennis and classifying countries by economic and other measures. The tennis research involved analyzing how the tennis team played as the length of points, games, and sets increased. The world research on countries involved creating a system to rate each country on a scale from 1 to 10. The scale was created by a k-means clustering algorithm.

**Christopher Beckett (Dr. Gil Fellingham, mentor)** studied NBA Injury Data. His main result was a SQL database of NBA Injuries dating back to 2004 using espn.com, prospectstransactions.com, and sportvu data and entering data by hand into excel. He also collected statistics about each of the NBA players from 2016 down to 1980 using the stats.nba.com API through python.

**Mason Blackham (Dr. Gil Fellingham, mentor)** worked with the BYU Men's Basketball team to improve the Rebound Rating system. He presented his findings at the spring research conference. The rebound rating system, which is based off of box outs and checking the opposing players defensively, can help the team improve their defense and can improve their skills to bring them to the top of the NCAA and even Professional level.

**Tanner Brotherson (Dr. Gil Fellingham, mentor)** researched the tactics/plays a team employed in their attempts to score a basket in basketball in the 2013/2014 season. The most significant difference was the San Antonio Spurs. They employed different tactics in the post season compared with the regular season when they played the Miami Heat.

**Michael Christensen (Dr. Shane Reese, mentor)** worked with statistical models that have been developed to better understand components of climate change in the regions of Antarctica and High Mountain Asia.

Climate change has massive short- and long-term consequences for human populations and ecosystems around the globe, yet there still exists uncertainty regarding the exact nature of climate trends as well as the interactions between different climate factors.

**Gavin Collins (Dr. William Christensen, mentor)** researched building models for various applications of a certain nanocomposite sensor. These sensors could be inserted into a shoe to estimate the number of calories burned during running or to estimate continuous measurements of a three-dimensional ground reaction force. Another application involves the insertion of these sensors into helmets in an effort to estimate impact forces.

**Andrew Flint (Dr. Gil Fellingham, mentor)** analyzed games and spotted trends for the BYU men's soccer team that help them achieve success on the field.

**Mitchell Gillspie (Dr. Gil Fellingham, mentor)** worked doing data analytics for the BYU Men's soccer team. He discovered a lot of interesting trends and patterns in the play style of the team.

**James Griffin (Dr. Gil Fellingham, mentor)** researched rugby statistics. He worked on team and individual performance, set piece play, number of phases to score, average distance from goal of a scoring possession, and number of kicks that were effective.

**James Hill (Dr. Gil Fellingham, mentor)** has been working for the last two years for Dr. Gilbert Fellingham as a research assistant. Their current project is to work with men's volleyball data to determine the first side out percentage by area the serve lands in. They performed Bayesian statistical methods to find the probability and the results which showed that some areas do differ in probability of first side out.

**Ben Jensen (Dr. Gil Fellingham, mentor)** researched ranking NFL quarterbacks in a Bayesian framework. Using Bayesian statistics, we can rank NFL positions and players in order to evaluate current contracts and team structure. This gave him the programming experience and analytical skillset to easily transition to the real world.

**Heehoon Jung (Dr. Gil Fellingham, mentor)** worked to build performance curves to predict future performances of young athletes using track and field data.

**Matt Oehler (Dr. Gil Fellingham, mentor)** worked on a problem that entails beach volleyball team optimization. He used data from the 2016 Rio Olympics to assess which skill types of players, based on their skill-sets, make the best team.

**Cory Ortiz (Dr. Gil Fellingham, mentor)** worked with Jenna Lambourne and with the women's basketball team. Their main focus was on the statistics that are not usually kept track of. They wanted to see how shot clock usage affected the points per possession for BYU. Their results were pretty conclusive as they found that the more efficiently the basketball team used the shot clock, the more probable they were to win.

**Braden Sharp (Dr. Gil Fellingham, mentor)** worked with the women's soccer team, helping them increase their offensive efficiency by tracking which strategic decisions have the highest probability of resulting in a goal. Between the 2015 and 2016 seasons, the team increased its scoring percentage from 6.8 to 15.6. Their research was integral in this improvement.

**Alison Stewart (Dr. Brian Hartman, mentor)** Alison's goal in research was to create a predictive model that used the claim costs and variable data in 2012 to predict the cost in 2013.

**Dean Sobczak (Dr. Candace Berrett, mentor)** studied statistical visualization techniques. He did this by designing a web-based application that housed several plots and filters for some data collected in conjunction with the Speed Matters research paper published last year. The data examined the relationship between typing speed and grades earned in first-year law school courses.

**Andrew Wiser (Dr. Gil Fellingham, mentor)** studied the relationship between strength training and how difficult a player perceives practice. He looked at practice ratings prior to games to determine if strenuous practices before games affected in-game performance. There were no significant results, but they hope further evaluation will allow a better understanding of how players are affected by practice.

## ALUMNI UPDATES

Thanks to all the alumni who have sent us updates. We feature those on our department website ([statistics.byu.edu](http://statistics.byu.edu)) as monthly spotlights and on our alumni bulletin board. Here are a few of the updates from our alumni:

**Cameron Gleed** has worked as an actuary at the Milliman Seattle Health Practice for four years. He achieved his Fellow of the Society of Actuaries (FSA) in March 2017. In June 2017, he moved from a cubicle to an office with a view of downtown Seattle, which is arguably just as great as finishing all the actuarial exams. In his free time, he enjoys taxidermy, embroidery, and Nordic skating.

**Doug Hicken** recently changed jobs from running finance and ops for a business intelligence startup (Grow), to Director of Operations at another Provo startup, Chatbooks. There he is responsible for all printing and shipping of customer book orders, international growth and operations, sourcing and pricing of all non-book products, and internal tools and software. He has become, against his will, a heavy Excel, Tableau, and Redshift user and enjoys the heavy data analysis and pricing negotiations that have become part of his daily routine.

**Lori Lyn Price** graduated in November from the Harvard Extension School with a master's degree in history. Her thesis was titled 'Gender and Domestic Medicine Analysis of a Seventeenth-Century Receipt Book'. She also celebrated 15 years working as a biostatistician at Tufts Medical Center in Boston, MA in December.

**Paul Sabin** is in his second year working full-time as a Sports Analytics Specialist at ESPN while continuing his work towards a Ph.D. in Statistics at Virginia Tech under Dr. David Higdon. He expects to graduate in 2018.

**Keith Stoddard** is currently working for Humana in Green Bay. He works on rate fillings in the state of Ohio. He has his ASA.

**Rob Versaw** took on the role as the Director of Mobile Apps at Overstock.com last year. He has seen an increase of over 400% in profitability of the iOS and Android apps. This past spring, he was nominated and selected as a member of the Forbes Technology Council, based on his work at Overstock. Specifically, his team's apps have

won awards from multiple design and retail competitions, including "Editor's Choice" from Google. Additionally last fall he started a non-profit with fellow BYU Statistics alum Jared Ward to sell apparel in order to benefit orphans in the Congo.

**Nathan Stephens** works at RStudio as Director of Solutions Engineering where he gets to work with the R community and make RStudio products better. Nathan lives in the Baltimore - Washington DC area with his wife and two sons.

**Christina Hammond** is a data scientist at Oracle, in a division called the Oracle Data Cloud. They do digital advertising consulting as an independent third party for advertisers and digital publishers such as Facebook, Google, and Snapchat. At ODC, She manages a small team called Strategic Analytics, which produces industry-facing research. Her team publishes best practices in the field and supports our client partners & executive team with data-driven insights. They work at a fast pace, and every day is different. On a personal note, Christina and her husband, Craig, just built a new home north of Denver and they are loving suburban life.

P.S. Her team is expanding! She'd love to have a BYU Statistics alum (with 2+ years experience) join her. Reach out to her on LinkedIn for details!

**Alexis Merrill** graduated with a bachelors in chemistry and masters in statistics and has spent the last 14 years at home with her four children. Pursuing both disciplines has given her opportunities for freelance projects and confidence in programming.

**Brian Bowers** is working now as the Chief Operating Officer for Jamberry. His major has led him into Engineering Product Development, and Lean Manufacturing. This allowed him to become heavily involved in Manufacturing and Supply Chain Operations, and to ultimately lead the Operations of several companies.

**Kevin Crookston** is working as a Test Data Analyst for TRAX Test Services. He has found throughout his career that he has met very few people who's careers relate to their majors. He believes, "the primary reason for getting a college degree is to learn how to learn, how to think technically, how to solve problems, how to overcome challenging tasks, and how to work with a team."

**Doug VanDerwerken** received his PhD from Duke in 2015. He is now an Assistant Professor at the United States Naval Academy working in the Mathematics Department.

**Nathan Sandholtz** is working towards getting his PhD in statistics at Simon Fraser University. He said that the program at BYU helped him to gain a basic understanding of many topics in statistics. He said, "without the BYU statistics program I wouldn't have heard about the Department of Statistics at Simon Fraser and so I'm sure I wouldn't be where I am today."

**John Wald** loves working with numbers and being able to see how research can make a big difference for so many companies. He is currently working as the Director of Research for Lighthouse Research.

**Barrett Jones** is working as a Programmer Analyst for the New York Presbyterian Hospital. His work has helped him to learn more advances in analytical methods.

**Guinan Lian** received his masters in statistics from BYU in 2005 and is working as a Clinical Statistician for Abbvie Inc., in Chicago.

**Jeff Lingwall** is an Assistant Professor of Business Administration at Truman State University. His statistics background was a tremendous asset for studying economics and teaching in a business department. He received his bachelors and masters in Statistics from BYU.

**G David Booth** is working as the Senior Director of Business Unit Quality at Smiths Medical. He leads teams that are responsible for assuring that the design and development of medical devices, as well as the analysis and resolution of quality issues that customers may experience, is executed in a disciplined and statistically valid manner.

**Neal Peterson** is working as an Anesthesiologist for the US Air Force. His bachelors in statistics was a great background for medicine and has given him an edge interpreting which studies had merit. He continues to read scientific articles and will occasionally use statistics to improve his practice by analyzing patient data, workflow, and safety areas.

## Alumni and Friends of BYU Statistics



### Keep Us Posted

We want to know about what's new with our Alumni. Let us know about any new achievements that you may have by emailing us at [acetz@stat.byu.edu](mailto:acetz@stat.byu.edu). You may also visit our website at [statistics.byu.edu](http://statistics.byu.edu) for more information about the Department of Statistics.



### Recruit an Intern or a Graduate

Send an email to [ruth@stat.byu.edu](mailto:ruth@stat.byu.edu) with the job description, qualifications, and how to apply for the position. The information you provide will be forwarded to students and/or recent graduates of the Department of Statistics.



### Get connected on

If you haven't already, create a professional profile on our group for yourself on **LinkedIn**: [Alumni and Friends of BYU Statistics / Actuarial Science](#). Stay up to date!

Like us on **facebook** at: [facebook.com/byustatistics](https://facebook.com/byustatistics)

## Make a Gift

Exciting things are happening in the Department of Statistics. As we strive to achieve the department's goal to help students develop their intellect and faith, our faculty teach the latest new concepts and skills, and administration and staff encourage and serve students. All help strengthen testimonies of Jesus Christ.

Your support helps this happen. Each donation makes a difference; no matter the size. Please make a gift and continue the tradition of giving back.

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