



# The Y-Distribution

Brigham Young University

Department of Statistics

Vol. XXIV June 2023

## FROM THE CHAIR, DR. DAVID B. DAHL



We are excited to bring you a new issue of the Y-Distribution Newsletter! Here are some of the highlights since our last newsletter in 2019.

Dr. Shane Reese, Professor in our

department, is the new BYU president! The department as a whole and many of us individually have been blessed by Shane's teaching, mentoring, and friendship. We are excited that he can now bring his unique assets to the entire BYU community as President. See the next article for all the details.

We are now in a new building! After many happy decades in the venerable Talmage Building, growth in the department and college necessitated a move to the new West View Building, across the street from the Talmage Building. Stop in to see us next time you are on campus! See the article and picture on page 3.

Scott Grimshaw served as Department Chair from 2019-2022. I personally am very grateful for Scott's willingness to serve and his tireless leadership during a tumultuous time. Grant Jensen, Dean of the College of Physical and Mathematical

Sciences, summarized things well by saying, "We're tremendously grateful for Professor Grimshaw and his leadership during such pivotal and important years. It's no small thing to lead a department that is growing very quickly with soaring enrollments and majors. Scott cares deeply about the department and faculty – it was always evident in the way he advocated for you at our meetings. He has served the department well including shepherding it through the pandemic, overseeing the transition to a new building, working with three different deans, and hiring many talented faculty and staff. He served during a tumultuous time with big transitions, and we look forward to now having his deep experience in other high-impact university assignments."

As Chair, I am so grateful to be working with Candace Berrett (Associate Chair, Graduate Coordinator) and William Christensen (Associate Chair, Undergraduate Coordinator). I have learned so much from them and our weekly chairs' meeting is a pleasure.

In terms of new faculty, we are grateful to have Drs. Fisher (2021), Sandholtz (2021), Perrett (2022), and Rhodes (2023) join us. Each brings unique expertise and energy to our ever-changing discipline, and they continue our tradition of excellence. We will miss our retiring faculty: Lynne Nielsen (2022) and Dennis Eggett (2023). We have also had several promotions over the years: Berrett

(Professor, 2022), Richardson (Associate Professor, 2021), Petersen, Warr (Associate Professor, 2023), Heiner, White, Zabriskie (Candidacy for Continuing Faculty Status, 2022).

We are so grateful to have Brandon (business manager), Kimri (secretary), and Jamison (computer support) who have filled big shoes left by Ruth, Amy, Diana, and Pete. Given our size, our staff run a very efficient operation with the excellent help of many student employees who serve the students and faculty so well.

There are a lot of exciting things in the department around data science, actuarial science, and statistical science. Keep up with the department by visiting our website: <https://statistics.byu.edu>

### BYU FRIENDS AND ALUMNI OPEN HOUSE BREAKFAST 2023



If you are attending JSM 2023 in Toronto, Canada, please meet us at our annual Brigham Young University Breakfast. We look forward to seeing you there!

## SHANE REESE NAMED PRESIDENT OF BYU



President C. Shane Reese's appointment as President of BYU was announced on March 21, 2023. Reese is a Professor in the Department of Statistics, former Dean

of BYU's College of Physical and Mathematical Sciences (CPMS) and served as BYU's Academic Vice President since 2018 until becoming President on May 1, 2023. He succeeded President Kevin J. Worthen, who became the 13th president of BYU in 2014.

Dr. Reese is a respected scholar in the field of statistics and has contributed to a broad range of research in the areas of Bayesian inference, model selection, and data

analysis. In 2013, he was elected as an ASA Fellow, a significant accomplishment in the field of statistics. He has received numerous awards for his research, including the Presidential Early Career Award for Scientists and Engineers in 2009, which is the highest honor given by the US government to early-career scientists and engineers.

Dr. Reese is most known to his former students for his teaching and

mentoring excellence, whose impact reaches beyond the classroom experience. In 2003 he mentored his first MS student, Mike Smith, who commented on Dr. Reese's mentoring, saying, "His patience and his rigor were two attributes that I saw and try to emulate even today in my role as US Head of Methodology and Analytics at SKIM." Another student, Thomas Leininger adds, "It was clear from day one that Shane really cares about his students." Nick Martineau valued Reese's personal investment in him, saying, "As a finance major, I was very much underprepared for the statistics MS program, but Dr. Reese took time with me nearly every day during the summer before the program started. He taught me R, got me working on a research project for BYU, and set me up with the right prerequisite math courses so that I could get a bit more up to speed...He even showed up with a crib as a gift when he found out I was going to have my first child." Katie Larson Allen worked as his research assistant when Reese became the

Dean of CPMS and noted Reese's continued investment even with the change in his role, "Despite his shift in responsibilities, Dr. Reese stayed focused on helping individual students. I knew I had his full attention when I was in his office."

As the new president of BYU, Dr. Reese is expected to continue the institution's tradition of academic excellence and commitment to its religious mission. Regarding Dr. Reese's commitment to academic excellence, Brittany Spencer says, "Dr. Reese changed my life because he believed in me at a time when I didn't recognize I could believe in myself. He pushed me to grow, to tackle hard problems, and to keep at it when I felt like giving up. I'm sincerely grateful for his mentorship." Andrew Stacey reminisced on Dr. Reese's commitment to BYU's religious mission. He stated, "On the last day of that class, Dr. Reese told us eloquently that, although the content of the class was true and important, his

testimony of Christ as his Savior was the driving force in his life. That day illustrated to me everything that is great about BYU and about the Department of Statistics: the ability to learn transformational course content, taught by an incredible teacher, who then ties in this world's most incredible message." In his inaugural address, Dr. Reese emphasized the importance of providing a holistic education to students, saying, "Our aim is to graduate men and women who are not only intellectually skilled, but also morally and ethically grounded, who are not only technically proficient, but also broadly educated, who are not only successful, but also humble and compassionate."

We are elated by Dr. Reese's new assignment. As the first statistician to be president of this beloved university, we have high hopes and expectations for the next few years. We've seen him accomplish great things within the department and trust that he will bring great things to BYU.

## NEW BYU STATISTICS CLUB

Dr. Brinley Zabriskie has been serving as the faculty advisor of the new BYU Statistics Club. She summarized their activities this year below.

Spurred by enthusiastic undergraduate students, the BYU Statistics Club—a student chapter of the ASA—was reinstated in the Fall of 2022 and has had many early successes. After six months, the club had more than 270 members.

Prior to Fall 2022, students who are representative of the membership filled club leadership positions. Each statistics degree emphasis (biostatistics, data science, etc.) was represented in leadership, as were both graduate students and statistics minors. Having representatives from all areas has helped the club focus on common needs and tailor events for specific groups. The leadership team has had a bonding activity and frequent leadership meetings to keep the club running smoothly.



Pictured above are members of the 2022-2023 BYU Statistics Club Leadership

The first club-wide activity was an opening social. Approximately 150 club members came together to get to know each other in fun ways. A highlight was the interactions students had with faculty members.

The club has started the following activities since it was reinstated:

1. A career in data seminar series in which industry professionals speak to club members twice a month and share insights about how learning statistics can benefit them now and in the future.
2. A student mentoring program in which student mentors are available to advise and support other students.
3. A data competition in which groups of students analyze data and present their findings to a panel of industry judges.
4. A volunteering program in which students have volunteered for a department end-of-semester breakfast, several university fairs, and a community outreach program.

## STUDENT HIGHLIGHTS

Below you will find glimpses into the sentiments expressed by a few of our students regarding their experiences in the Department of Statistics.



**Emily Liu:** Hello, my name is Emily Liu. My drive to make an impact on the world began when I worked as a pharmacy technician during my

undergrad. While there, I saw many patients struggle to find drug treatments that were fit for their needs. I thought there must have been a better way to predict what medications would work best for which patients. When I took Stat 121, I realized that being able to draw statistical inference from current data to predict future outcomes could be applied to the medical field and improve therapeutic outcomes. Thus, my passion for statistics--specifically biostatistics--was born. This drive has led me to multiple biostatistician internships at companies such as Mayo Clinic and perform cancer research including multiple myeloma research. This has also led me to pursue a master's degree in statistics at BYU, which I recently completed. Extensive research collaboration with the BYU Statistics Department Faculty, namely Dr. Brinley Zabriskie, has been one of the highlights of my BYU experience. I attribute much of my success to her mentorship, along with

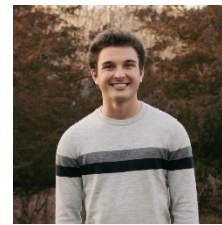
the support of other statistics faculty members for which I am forever grateful.



**Jacob Miller:** As my time at BYU is coming to a close, I cannot help but feel immensely grateful for the people in the Statistics Department at BYU.

My undergraduate experience only lit a passion inside of me to complete the statistics master's program here. I was able to pass two actuarial exams and complete two actuarial consulting internships before starting graduate school. Research with Dr Sandholtz and Dr Hartman was one of the highlights of my experience because I was able to work on a unique NFL fourth down concept for my master's project while being mentored by two amazing professors. In addition, I went headfirst into my dream subfield of statistics by receiving an Honorable Mention in the NFL's annual Big Data Bowl with my cohort-mate Nate Hawkins. During the summer worked as a Sports Analytics Intern at a company that prices specialty insurance products for professional athletes (which brought together my actuarial experience and my research interests). Even though grading your fellow peers isn't always the easiest thing to do, being a TA for Stat330 (Regression), Stat469 (Analysis of Correlated Data), Stat495 (Data Science in Sports), Stat535 (Linear Models), and Stat536 (Statistical Learning and Data Mining) allowed me to

learn material more deeply and appreciate the foundations that build important concepts are built on in order to assist the students. Finally, I just want to reiterate how supportive, kind, and encouraging the professors in the Statistics Department are -- they are what make an education at BYU inspiring and uplifting!



**Sam Spackman:** My name is Sam Spackman, and as the 2022-2023 President of the newly established BYU Stats Club, I am excited to share

our achievements from the past school year. With a focus on building unity within the department, we organized various social and career-focused events that served over 300 unique visitors, including a data-modeling case competition with industry professionals as judges, 8 different in-person info sessions with other working professionals, and several different social events. In just two semesters, we have grown the club to about 300 members and now developed a strong leadership infrastructure with 27 student volunteers. I am proud to have been a part of this effort and to have helped create a supportive community for statistics students and faculty that will last for years to come. Thank you, alumni, for your continued support of our department and its students!



## NEW BUILDING

Since 1971, our department has been located in the James E. Talmage building. As of August 2020, that has changed! We are now located in a newly constructed building: The West View Building. Because of our explosive growth, the Talmage no longer had sufficient space for our department. This new building features increased lab, meeting, and office space to address that growth.

The West View Building now stands directly west of the TMCB. It contains our department, the economics department, and the Neal A. Maxwell Institute for Religious Scholarship. If you find yourself on campus, please stop by and check out our new home! We would love to see you and hear what you've been up to.

## RESEARCH HIGHLIGHTS



**Dr. Scott Grimshaw** works on statistical process control where he uses data to monitor the quality of process output. Control chart methods need to be created or

modified with modern changes in instrumentation and data storage. When he came to BYU 30 years ago, he was fortunate to work with Chuck Jensen (MS 1996) and David Meade (MS 1994) on a capstone project with the BYU Creamery. Chuck was able to convince them that taking a sample of 8 bottles each hour would help them prevent their filling machine for chocolate milk from over or under filling, and David pointed out that even the most passionate statistician didn't want to update separate control charts for the 8 filling heads. Now we have high frequency and high velocity data streams because instruments can measure every bottle filled. A couple of his recent papers have shown how to modify current control chart methods when process data are correlated because ignoring the correlation yields frequent false alarms. And in a surprising application of control charts outside manufacturing, the motivating examples in these papers are from BYUtv where decision makers relied on dashboards for the data.



**Dr. Matthew Heiner:** Common themes in Dr. Heiner's research include mixture modeling, time series, and sparse signal recovery, with applications in

environmental sciences and sports. Together with recent graduates Taylor Grimm and Hayden Smith, Drs. Heiner and Christensen published an article in collaboration with Dr. Steve Leavitt (Biology, BYU) examining the use of "rock posy" lichens as bioindicators of air pollution. To characterize chemistry profiles of lichens collected across the Intermountain West, they developed a novel multivariate receptor model to detect sparse signals from common pollution sources and dust deposition. Dr. Heiner's current students assist in developing and testing algorithmic

enhancements to widen applicability of slice sampling, a popular Markov chain Monte Carlo (MCMC) technique. The approach facilitates Bayesian inference in settings that have traditionally required highly specialized algorithms. They have applied their sampler to modeling fluctuating seasonal effects on nitrate levels in rivers.



**Dr. Garritt Page:** The main area of Dr. Page's methodological research is in Bayesian model-based clustering

with a particular focus on infinite/finite mixture models and random partition models. With collaborators in Italy, he is developing a class of Bayesian finite mixture models that will allow practitioners to better harness the flexibility that these methods afford by permitting them to incorporate prior information associated with the number of data driven clusters in an intuitive way. His hope is, by connecting prior parameters to scientifically meaningful objects, applied scientists will be able to more effectively regulate these powerful statistical tools. Dr. Page is also currently working with a number of undergraduate and graduate students in the department. Many of these students are involved in a sports analytics group in which they are furthering knowledge with regards to volleyball, ice hockey, tennis and basketball.



**Dr. Shannon Tass** works in the exciting and innovative field of Computational Health Science, where she collaborates with a team of Public

Health, Computer Science, and Statistics faculty and students. Their shared goal is to tackle health-related challenges by utilizing advanced computer science and statistical tools. Within this dynamic lab, Dr. Tass leads various projects, including analyzing emergency department data to better comprehend the factors behind mental health-related hospital visits. Additionally, her interests lie in developing and studying models for text data, particularly for identifying and comparing topics. She's also deeply

passionate about promoting best practices in data science education through multidisciplinary applications. Recently, Dr. Tass had the pleasure of working on a couple of exciting projects: one that uses deep learning models to classify tweets that showcase benefits or barriers to COVID-related public health behaviors (such as masking and getting vaccinated), and another that uses machine learning models to identify unknown geological structures on Saturn's moon Titan.



**Dr. Dennis Tolley** currently does research in developing an intrinsic data model for analysis of real-world processes. Tolley's

two major application areas for this research effort are statistical mechanics and long/short term actuarial methods. Although these two application areas may seem far apart, the underlying data models are very similar. For example, at the microlevel chemical processes can be boiled down to the distribution of energy of the particles and the location/orientation of the particles in the system. Flow of energy, amount of work done, spontaneity, dispersion, transport, concentration batteries, etc. are all based on the probability distributions for the particles in these systems and how constraints of the system change these distributions. Long/short term actuarial models for life and health have the same general set up. The probability distribution of health, chronic conditions, comorbidities and risk factors and the evolution of these distributions over time dictate both health care need (and cost) and mortality outcome. The constraints on these distributions and their change are the principal drivers of insurance risk, required reserves, premiums, actuarial gains, etc. When analysis of data is too far "downstream" from the intrinsic data model the statistician often must make involved assumptions regarding the data that, theoretically, might have been discoverable by an understanding of the constraints underlying the fundamental process.

## REVAMP OF STAT 121

Dr. Matthew Heaton received a CPMS grant to improve our “Principles of Statistics” course (STAT 121, formerly known as STAT 221). As part of the changes, he, with a team of students, created an R Shiny app (example picture below) that guides students through the data analysis process and helps them understand difficult concepts such as the Central Limit Theorem. To explore the app yourself, visit: <https://rconnect.byu.edu/Stat121V2/>

Stat 121 Analysis Tool ☰

Exploratory Data Analysis  
 Normal Probability Calculator  
 Central Limit Theorem  
 Analysis for Means <  
 Analysis For Proportions <  
 Regression <  
 >> Simple Linear Regression  
 >> Multi Linear Regression

### Simple Linear Regression

1) Dataset Selection

**Data Selection**

Use Preexisting Dataset  
 Upload Your Own Dataset

**Select Dataset**

Car Prices ▼

Description:

Sample size: 205

Display Dataset

Show 5 entries Search:

car_ID	gas	turbo	four.door	front.engine	wheelbase	carlength	carwidth	carhe
1	1	Yes	No	No	Yes	88.6	168.8	64.1
2	2	Yes	No	No	Yes	88.6	168.8	64.1
3	3	Yes	No	No	Yes	94.5	171.2	65.5
4	4	Yes	No	Yes	Yes	99.8	176.6	66.2
5	5	Yes	No	Yes	Yes	99.4	176.6	66.4

Showing 1 to 5 of 205 entries Previous 1 2 3 4 5 ... 41 Next

Select This Dataset

2) Select Variables

3) Exploratory Data Analysis

4) Check Regression Assumptions

5) Regression Analysis

6) Prediction

## NEW FACULTY



**Jared Fisher** joined our faculty in July 2021. He finished his Ph.D. in the Department of Information, Risk, and Operations

Management from University of Texas at Austin in May 2019. Dr. Fisher's teaching experience includes University of Texas at Austin (2017, 2019), University of California, Berkeley (2019-2021). His research interests include Bayesian methods, causal inference, time-series, sports analytics, and applications in economics, finance, and education.



**Jamie Perrett** joined our faculty in July 2022. He earned his Ph.D. in statistics from Kansas State University in 2004. Dr. Perrett's research

interests are in statistics education

(distance education and online learning), linear models, design of experiments, unreplicated experiments, and mixed models. His teaching experience includes Kansas State (1999-2004), University of Northern Colorado (2004-2008), Texas A&M (2008-2022).



**Alex Petersen** joined our faculty in August 2020. He earned his Ph.D. in statistics from the University of California at Davis in 2016. Dr. Petersen's teaching experience

includes University of California at Davis (2013-2014) and University of California at Santa Barbara (2016-2020). His research interests are in functional and object data analysis, graphical models and covariance modeling, distributional data analysis, functional connectivity estimation, and nonparametric statistics.



**Jake Rhodes** finished his Ph.D. in Mathematical Sciences with a statistics specialization from Utah State University in August 2022. After

graduation, he began work as an assistant professor at Idaho State University. He will be joining the department on June 15th. His research areas include manifold learning, dimensionality reduction techniques, and the development of applications in machine learning.



**Nathan Sandholtz** joined our department in September 2021. He graduated with his Ph.D. in statistics from Simon Fraser University in August

2020 and then was a post-doctoral fellow at the University of Toronto. Dr. Sandholtz's research areas include inverse optimization, Markov decision processes, decision analysis, and Bayesian modeling.

## RETIRING FACULTY



**Dennis Eggett** will be retiring from the Department of Statistics in August 2023. Dr. Eggett has been the director of the Consulting Center since 1997.

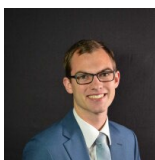


**Lynne Nielsen** retired from the Department of Statistics in July 2022. Dr. Nielsen led our introductory statistics course from 2000-2022, teaching many sections while training and

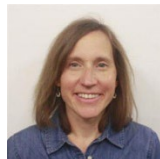
mentoring hundreds of TA's.

We want to thank Drs. Eggett and Nielsen for all the time and effort they have dedicated to our department and wish them a happy retirement!

## NEW ADJUNCT FACULTY



**David Teuscher** joined our department in Fall 2022 and is teaching our STAT 121 course.



**Jennifer Yamamoto** joined our department in Winter 2023. She currently teaches our STAT 121 course.

## NEW STAFF



**Matthew Jewel** joined our department in Winter 2023. He is our new STAT 121 Course Coordinator. With the new revisions to our STAT 121 course, Matthew has taken a huge responsibility to help manage that course.



**Kimri Mansfield** joined our department in September 2021 as our Department Secretary and

Graduate Program Manager. She manages our internships and is the first person to answer questions and provide academic advising to students.



**Jamison Orton** joined our department in Summer 2022. He is our department's Computer Support Representative (CSR). Former CSR Pete Dotson described Jamison as having "the ability to acquire new skills by independent study and by collaborating with fellow workers, subject matter experts around campus, and user

community support resources available on the internet."



**Brandon Smith** joined our department in December 2019 as our Business Manager. Brandon keeps our office running smoothly and all our finances in order.

Thank you to all our new staff members!

## RETIRING STAFF



**Peter Dotson** retired from our department in August 2022. He was our Computer Support Representative (CSR) for 22 years.



**Ruth Dauwalder** retired from our department in November 2019. She was the department's Administrative Manager with special stewardship over finances and career services.

## OPPORTUNITIES TO TEACH

Do you want to contribute to the teaching mission at BYU? We regularly need adjunct professors to teach daytime and evening classes. If you are interested in teaching classes, let us know. We generally need people with at least an M.S. in statistics, biostatistics, or a related field. To get on our list of potential teachers, contact Brandon Smith, [bsmith@stat.byu.edu](mailto:bsmith@stat.byu.edu).

## AWARDS

We have wonderful faculty and staff here at the BYU Department of Statistics and these awards give just a glimpse into their greatness. Here are a few of our department's more recent recognitions.

### Melvin W Carter Professorship

David Dahl: September 2019  
William Christensen: September 2020  
Del Scott: September 2021

### Faculty Heritage Fellowship Award

Matthew Heaton: September 2019  
Garritt Page: September 2019

### Data Science Faculty Fellowship Award

Matthew Heaton: September 2020  
Scott Grimshaw: September 2021  
Shannon Tass: September 2021

### Young Scholar Faculty Fellowship

Alexander Petersen: September 2021  
Brinley Zabriskie: September 2022  
Matthew Heiner: September 2022

### Alvin C. Rencher Award

Candace Berrett: September 2020  
Garritt Page: September 2020

### Statistics Fellowship Award

Philip White: September 2020

### External Funding Excellence Award

Matthew Heaton: September 2022

### Teaching Excellence Award

Natalie Blades: September 2022

### Early Career Teaching Award

Candace Berrett: September 2022

### SAERA AWARD

Brandon Smith: March 2022  
Jamison Orton: January 2023  
Kimri Mansfield: April 2023

We are proud of all our faculty and staff and grateful for their hard work!

## 45TH ANNUAL SUMMER INSTITUTE OF APPLIED STATISTICS (SIAS)



We are honored to have **Dr. Robert McCulloch**, Professor at Arizona State University, as our presenter at this year's summer institute. His presentation will highlight modern computing power that has led to a breakthrough in our ability to learn high-dimensional, complex relationships from data. Perhaps two key modeling approaches that have led to breakthroughs in application are ones based on neural networks and ones based on ensembles of trees. In this course, we learn a Bayesian approach to modeling with ensembles of trees. The basic approach is called BART for Bayesian Additive Regression Trees. The Bayesian approach allows for Markov chain Monte Carlo stochastic exploration of the model space, uncertainty quantification, and Bayesian model elaboration. BART is one of the few modeling approaches which can exploit the powerful Bayesian conceptual toolkit.

This year's summer institute will occur **June 21-22, 2023**. If you would like to attend, please register for the conference by **June 14<sup>th</sup>, 2023**. For more information on the schedule of SIAS and to register, visit <https://statistics.byu.edu/sias>.

## DEAN'S LIST 2022

### Winter 2022

Carson Payne	Gavin Hatch
Davis Dowdle	Jared Lane
Tyler Ward	Jacob Smith
Mary Curtis	Madeline Smith
Joshua Halverson	Nicholas Vorster
Seth Peacock	Gavin Williams

Daniel Sumsion	Andrew Milane
Ryan Wolff	Nathan Nielson
Michael Cannon	Andrew Carpenter
Joseph Cieslewicz	Claudia Caten
Sarah Didericksen	Yong Nan Chang
Ty Hawkes	Hannah Gartz
Benjamin Kearsley	Jared Grooms
Samuel St Clair	Porter Holyoak
Tyler Zaugg	Jacob Johnson
Elissa Bailey	Howard Mckeeon
McKay Baker	Mary Nydegger

Aubree Curtis	Jackson Passey
Benjamin Dahl	Patric Platts
Nathan Swihart	Tanner Thygerson
Gretl Wagner	Emily Watabe
Matthew Zollinger	

### Spring 2022

Landon Collins	Emily Watabe
Emily Anderson	Madison Portrey
Levi Williams	

**Summer 2022**

Derek Meyer  
Patric Platts

Landon Collins

**Fall 2022**

Ryan Wolff  
Jacob Johnson  
Brett Pedersen  
Rebecca Linford  
Daniel Sumsion

Spencer Hogan  
Carson Payne  
Mary Ebbert  
Jackson Passey  
James Christensen

Joseph Cieslewicz  
Samuel Balls  
Braden Critchfield  
Gavin Hatch  
Dallin Johnston  
Alexis Layton  
Sienna Shepherd  
Scott Brown  
Daisy Harris  
Nathan Nielson  
Brody Anderson

Sujin Leek  
Yong-Non Chang  
Davis Dowdle  
Jamie Herron  
Benjamin Kearsley  
Lorenzo Shakespeare  
Ellen Wight  
Devan Gwynn  
Talmage Hilton  
Levi Williams  
Andrew Carpenter

Katheryn Crandall  
Moroni Egburhe  
Ty Hawkes  
Matthew Lindeman  
Seth Peacock  
Patric Platts  
Avery Smith  
Matthew Van Leeuwen  
Joseph Wilson

Sedona Dettwiler  
Sarah Fullmer  
Cameron Jensen  
Michael Okuda  
Justin Pferdner  
Adam Simpson  
Jacob Smith  
Gretl Wagner

**2022-2023 SEMINAR  
SPEAKERS**

During Fall '22 and Winter '23 semesters, we were pleased to have many great presenters at our Thursday Seminar series.

Speakers included:

**Joey Stanley (BYU):** Modeling Change in American English Accents

**Hans Müller (UC-Davis):** Statistics for Random Objects

**Brad Barney (Utah):** Clinical Research

**Volodymyr Melnykov (Alabama):** Finite Mixture Modeling in Stylometry

**Rebecca Nichols (American Statistical Association):** Go Forth to Serve: Statistics Service Opportunities to Enhance your Career and Make a Difference in the World

**Abel Rodriguez (Washington):** Analyzing Cognitive Social Structures

**Jonathan Chipman (Utah):** Experimental Design with Sequential Rematched Randomization

**Christopher Challis (Wells Fargo):** Consumer Modeling at Wells Fargo

**John Kidd (UVU):** Expectation-Maximization Algorithms and Mediation Analysis

**Jake Rhodes (Idaho State):** Random Forest Geometry-Preserving Proximities with Applications in Manifold Learning

**Daniel Bauer (UW-Madison):** Calculation of the Enterprise Capital via Least-squares Monte Carlo – Regress Now or Later?

**Richard Hahn (Arizona State):** Feature selection for Casual Interference

**Alejandro Jara (Catholic University of Chile):** A Class of Random Bernstein Copula Models

**Dave Higdon (Virginia Tech):** Computer Model Calibration and Agent Based Models

**Evan Johnson (Rutgers):** Tools and Methods for Profiling Host-Microbe Interactions in Pulmonary Diseases

**Christophe Giraud-Carrier (BYU):** Meta-learning and Dataset Embedding

**Erin Schliep (NC State):** Correcting for Informative Sampling in Spatial Covariance Estimation and Kriging

**Felipe Barrientos (Florida State):** Differentially Private Methods for

Managing Model Uncertainty in Linear Regression Models

**Logan Clarke (BYU Grad Student):** Multinomial Classification of Costa Rican Household Poverty Level

**Elizabeth Petersen (BYU Grad Student):** Grade of Membership Scores in Estimating Heterogeneous Treatment Effects for Instrumental Variable Scenarios

**Joshua Christensen (BYU Grad Student):** Posterior Sampling for Non-Gaussian Dynamic Linear Models

**Tamara Broderick (MIT):** An Automatic Finite-Sample Robustness Check: Can Dropping a Little Data Change Conclusions?

**Martina Narcisi (University of Bologna-Italy):** On the Effect of Confounding in Linear Regression Models: An Approach Based on the Theory of Quadratic Forms

We value having experts share their knowledge and experiences with our faculty and students. Our students look forward to and appreciate their presentations. Thank you to those who participated. For more information on each seminar visit:

<https://statistics.byu.edu/seminars>

**MASTER'S GRADUATES AND  
PROJECTS****2020**

**Jason Colgrove (Dr. Brian Hartman):** An Actuarial Approach to Personal Injury Protection Severity

**Matt Drewes (Dr. Natalie Blades):** A Multivariate Approach for Evaluating Rapid Diagnostic Tests for Malaria Featuring Prediction Performance Analysis and Bayesian Variable Selection

**Spencer Ebert (Dr. Shannon Tass):** Application of Machine Learning Techniques on Therapist Notes to Assess Suicidal Ideation

**Zoe Gibbs (Dr. Brian Hartman):** Using Asymmetric Cost Matrices to Optimize Care Management Interventions

**Celeste Ingersoll (Dr. Matthew Heaton):** Bayesian Approach to Real-time Spatiotemporal Prediction Systems for Respiratory Syncytial Virus

**Hyejung Lee (Dr. Dennis Tolley):** Detection of Analyte with Bivariate Absorbances in Liquid Chromatography

**Jeremy Meyer (Dr. David Dahl and Dr. Richard Warr):** The Attraction Indian Buffet Distribution (AIBD)

**Spencer Newcomb (Dr. David Dahl):** A Sequentially-Allocated Merge-Split Sampler for Conjugate Dirichlet Process Mixture Models

**Aubrey Odom (Dr. William Christensen):** Structural Equation Modeling to Assess Relationships Between Media Impact and Scientific Impact of Academic Articles

**Hannah Nyholm (Dr. Robert Richardson):** Computer Model Validation via Bayesian Gaussian Processes

**Timo Pew (Dr. Richard Warr):** Justification for Considering Zero-Inflated Models in Intersection Safety Analysis

**Wendy Wang (Dr. Robert Richardson):** Comparing Classification Methods for Estimating Severe Car Crashes

**Brittany Russell (Dr. Dennis Tolley):** Combining Data Sets Using Bayesian Missing Data Models: An Analysis of Rheumatic Heart Disease in Samoa



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