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SAMPLER

STATISTICS & ACTUARIAL SCIENCE FALL 2021

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From the Chair

Dear Friends of the Department of Statistics and Actuarial Science,

Greetings from Iowa City!

Kung-Sik Chan

This past year has been challenging because the department had to make manifold adjustments due to the Covid-19 pandemic; for instance, classes were mostly online or hybrid and meetings were mostly held via Zoom, even for PhD defenses. Fortunately, the transition from in-person teaching to online or hybrid instruction was largely successful. Our current plan is that teaching will be in-person in the fall.

Despite the gloomy situation, the department has made progress in extending our programs in data science. We have been partnering with Computer Science in offering the BS program in data science since three years ago; currently, we have about 30 students in the BS data science program, with growing student interest. We have also adopted data science in lieu of statistical computing as one of the four concentration areas of our PhD statistics program. Moreover, we have proposed a new MS program in data science (MSDS) which was recently approved by the provost. The MSDS awaits final approval by the Board of Regents, with the tentative plan of student enrollment starting in fall 2022. The expansion of the undergraduate and graduate data science programs aligns well with our faculty's emerging strength in data science, and furthers our teaching missions to meet the growing local and national needs for data scientists.

The Society of Actuaries (SOA) has recently announced some major changes in its Associateship level examinations. In particular, an Advanced Topics in Predictive Analytics requirement is added. Much of predictive analytics involves data science and statistical techniques and methodologies — the specialty of our department. The recent changes announced by the SOA will necessitate changes in our actuarial science curriculum to cover topics pertinent to the theory and practice of predictive analytics. Interestingly, the actuarial curriculum changes provide a unique opportunity for us to instill an actuarial science flavor in our new MSDS program (if approved).

Our actuarial science program continues to do well. In the past year, 22 UI alumni became Associates of the Society of Actuaries, four became Associates of the Casualty Actuarial Society, nine became Fellows of the Society of Actuaries, and three became Fellows of the Casualty Actuarial Society. We have successfully recruited a new actuarial faculty member, Dr. Josh Zhiwei Tong. Josh received his PhD from the University of New South Wales Business School in the summer. His research interests include credit portfolio losses, financial networks and systemic risk, and insurance under information asymmetry.

Some news about our faculty: Professor Jian Huang was recently elected a fellow of the Institute of Mathematical Statistics for his fundamental contributions to high-dimensional statistics, survival analysis, and statistical genetics and genomics. Professor Kate

From the Chair cont'd.

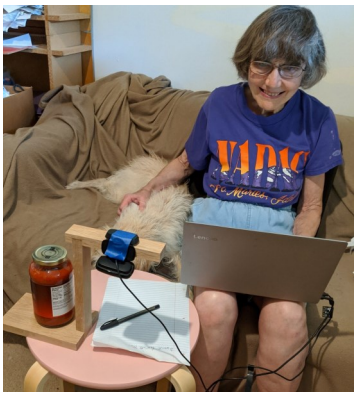
Cowles retired in the summer of 2021. Kate joined our department in 1997. She is a phenomenal teacher, having received the CLAS Collegiate Teaching Award and the UI President and Provost Award for Teaching Excellence. She was the director of the Geoinformatics for Environmental and Energy Modeling and Prediction (GEEMaP) program, the first NSF-funded cross-disciplinary PhD training program at the UI. Professor Mike Jones also retired in the summer of 2021. Mike's primary appointment was with Biostatistics, with a secondary appointment with us. He has supervised several of our PhD students and we thoroughly enjoyed the enlightening interactions with Mike over the years. We hope to see both Kate and Mike visit the department in their retirement, and even work in the shared office for our emeritus professors. Professor Montse Fuentes left the UI in the summer of 2021 to become the president of St. Edward's University. We wish Montse great success in steering St. Edward's to excellence!

We are grateful for receiving strong support from our alumni and friends, as well as from insurance companies, over the years. For instance, two of our alumni, Mr. Hassan Kamil and Mr. Tidjo Thierry Kuagbenu, gave two superb talks via Zoom from Malaysia and France, respectively, to our actuarial science students in the last academic year. As well, we are heartened by the strong alumni participation in the Gold Rush event organized by the Actuarial Science Club and Dr. Michelle Larson in 2020 to raise funds to reimburse actuarial exam fees. Our students and faculty members greatly benefit from the generosity of our alumni, friends and partnering corporations including Aegon Transamerica and Principal Financial Group. Thank you! While such student support has been generally geared toward undergraduate education, we are pleased to report the creation of the Aegon Transamerica Scholarship for promoting graduate education in actuarial science. The scholarship will facilitate recruiting and training talented domestic students from the state of Iowa and the Midwest to become thriving actuaries.

With the Covid-19 pandemic hopefully ending soon, the campus is gradually opening. We are enjoying seeing students, staff and faculty bustling safely once again on the campus this fall. If you plan to travel to Iowa City, please consider dropping by Schaeffer Hall so we can catch up with you.

Faculty News

Since joining our department in 1997, **Kate Cowles** has been an inspiration. We congratulate Kate on her retirement this year! Kate's dedication to the profession, especially to her students, along with her sustained record of research and teaching, has garnered her many deserved recognitions, such as the University of Iowa President and Provost Award for Teaching Excellence in 2015.



Kate Cowles practicing Zoom the day before her first-ever Zoom class in Fall 2020.

Over the past year and due to the Covid-19 pandemic, all of our faculty's invited lectures have been online instead of in person. Here's an abbreviated list of presentations:

Joyee Ghosh, *Bayesian model averaging for predicting tropical cyclone activity*, International Society for Bayesian Analysis World Meeting, 2021; and *Bayesian modeling of North Atlantic tropical cyclone activity*, International Indian Statistical Association (IISA) Conference, 2021.

Joseph B. Lang, *Slicing and dicing a path through the fiducial forest*, Purdue University, and London School of Economics, UK, 2021.

Sanvesh Srivastava, *Divide-and-conquer Bayesian inference in hidden Markov models*, Department of Statistics and Data Science, National University of Singapore, 2021; *Distributed Bayesian varying coefficient modeling using a Gaussian process prior*, New England Statistical Society, and International Indian Statistical Association Conference, 2021; and *Gaussian process regression and classification using international classification of disease codes as covariates*, Joint Statistical Meetings, 2021.

Faculty News cont'd.

Boxiang Wang, *M-optimal design for ridge regression*, Quality and Productivity Research Committee, Tallahassee, Florida, 2021; and *Computation and inference for large-margin classifiers*, Department of Biostatistics, University of Arizona, 2021.

We continue to conduct innovative and important research thanks in part to grant support, including:

Kung-Sik Chan, **Ambrose Lo**, **Elias Shiu**, **Qihe Tang** (University of Iowa); and **Yiqing Chen** (Drake University). "Modeling, measuring, and managing catastrophe risks" funded by Society of Actuaries Centers of Actuarial Excellence (CAE) Research Grant. June 2018 – January 2022.

Jian Huang (University of Iowa). "Integrating multi-dimensional omics data for quantifying disease heterogeneity" funded by National Science Foundation. August 2019 – July 2022.

Sanvesh Srivastava (University of Iowa) and Rajarshi Guhaniyogi (University of California-Santa Cruz). "Aggregated Monte Carlo: a general framework for distributed Bayesian inference in massive spatiotemporal data" funded by National Science Foundation. June 2019 – May 2022.

Our faculty also remain leaders in the publishing world. For example:

Huang, J., Jiao, Y., Jin, B., Liu, J., Lu, X., and Yang, C. (2021). A unified primal dual active set algorithm for nonconvex sparse recovery. *Statistical Science*.

Huang, J., Jiao, Y., Liu, J., and Yang, C. (2021). REML: Regression with marginal information and its application in genome-wide association studies. *Statistica Sinica*.

Johannes Ledolter and Lea Vandervelde have written a slim introductory monograph on text analysis, *Analyzing Textual Information: From Words to Meanings through Numbers*, published by Sage in June 2021.

Lo, A., Tang, Q., Tang, Z. (2021). Universally marketable insurance under multivariate mixtures. *ASTIN Bulletin: The Journal of the International Actuarial Association*, 51(1), 221-243. Coauthored with PhD student Zhaofeng Tang.

Lo, A. (2021). *ACTEX Study Manual for Society of Actuaries Exam PA (Predictive Analytics)*. New Hartford, CT: ACTEX Learning.

Lo, A. (2021). *ACTEX Study Manual for Casualty Actuarial Society Exam MAS-I (Modern Actuarial Statistics I)*. New Hartford, CT: ACTEX Learning.

Luo, L., and Song, P.X.K. (2021). Multivariate online regression analysis with heterogeneous streaming data. *The Canadian Journal of Statistics*.

Gerber, H.U., and **Shiu, E.S.W.** (2021). Equivalence Principle and Jewell's Inequality. *European Actuarial Journal*.

Gerber, H.U., **Shiu, E.S.W.**, Yang, J. (2021). An Actuarial Approach to Pricing Barrier Options. *European Actuarial Journal*, 11, 333-339.

Shiu, E.S.W., and Xiong, X. (2021). An Elementary Derivation of Hattendorff's Theorem. *European Actuarial Journal*, 11, 319-323.

Shyamalkumar, N.D., and **Srivastava, S.** (2021). An Algorithm for Distributed Bayesian Inference. *STAT*.

Lim, H.B., **Shyamalkumar, N.D.** (2021). Evaluating medical underwriters in life settlements: problem of unreported deaths. *North American Actuarial Journal*.

Faculty News cont'd.

Srivastava, S., and Xu, Y. (2021). Distributed Bayesian inference in linear mixed-effects models. *Journal of Computational and Graphical Statistics*.

Im, Y., Huang, Y., **Tan, A.**, and Ma, S. (2021). Bayesian finite mixture of regression analysis for cancer based on histopathological imaging-environment interactions. *Biostatistics*.

Jin, R., and **Tan, A.** (2021). Fast Markov chain Monte Carlo for high dimensional Bayesian regression models with shrinkage priors. *Journal of Computational and Graphical Statistics*.

Wang, B., and Zou, H. (2021). Fast and exact cross-validation theory for large-margin classification. *Technometrics*.

Hao, B., **Wang, B.**, Wang, P., Zhang, J., Yang, J., Sun, W.W. (2021). Sparse tensor additive regression. *Journal of Machine Learning Research*.

Song, R., and **Zimmerman, D.** (2021). Modeling spatial correlation that grows on trees, with a stream network application. *Spatial Statistics*.

Zimmerman, D., and Ver Hoef, J.M. (2021). On deconfounding spatial confounding in linear models. The *American Statistician*.

Zimmerman, D., and Lim, H.B. (2021). The middle-seed anomaly: Why does it occur in some sports tournaments but not others? *Journal of Quantitative Analysis in Sports*.

Dale Zimmerman also saw two books published in 2020 by Springer: *Linear Model Theory, with Examples and Exercises*; and *Linear Model Theory: Solutions to Exercises*.

Possible Department Name Change

The term "data science" was coined by the renowned statistician Jeff Wu in 1985. In a short span of not even 40 years, data science has grown so much that it has already impacted almost every aspect of society, commerce, industry, science, arts, etc. The challenges to learn with massive data routinely collected in our digital age engender the new disciplines including data science, data engineering, business analytics, health analytics, predictive analytics, etc. Data science is an evolving interdisciplinary field. Its core concerns data wrangling, data visualization and learning with massive data. Data science channels new energy and breaks new ground in statistics and actuarial science research and education, to wit: Since 2018, we have partnered with Computer Science in offering the BS in data science which currently has about 40 majors. We have also proposed a new MS in data science, which awaits final approval by the Board of Regents. Our statistics PhD program has recently added a new concentration area in "data science." The insurance industry is leveraging data science techniques (predictive analytics) in their business, which spawns interesting research problems. Both CAS and SOA are revising their examinations to incorporate predictive analytics. In response to our new data science programs and the actuarial examination changes, we have developed/are developing several new analytics courses. With data science now ingrained in our department's identity, a natural question arises whether it is desirable to modify the department name to reflect the change. Across the globe, many statistics departments have appended "data science" to their names, for instance, Yale University, Cornell University, Carnegie Mellon University, University of Pennsylvania, and National University of Singapore. Several Big 10 statistics departments including University of Wisconsin-Madison and The Ohio State University are in the process of renaming their departments to "Department of Statistics and Data Science." Our faculty had some related discussion recently and are generally in favor of making a similar change. We appreciate your opinion on whether to include "data science" in our department name, and what the new name might be. Please send us your comments to **DepartmentName@yahoo.com**. Thank you!

Student News

PhD Graduates

SAMUEL JUSTICE
Sam's PhD in statistics was conferred on August 6, 2021. His thesis is "Contributions to the Analysis of Vertex Centrality in Randomly Growing Tree Models" and his advisors were N.D. Shyamalkumar and R.P. Russo. He is now working as a research scientist for Brigham and Women's Hospital (BWH) in Boston, Massachusetts.

XUN LI
Xun's PhD in statistics was conferred on May 14, 2021. Her thesis is "Prediction of North Atlantic Tropical Cyclone Activity via Bayesian Variable Selection and Bayesian Model Averaging" and her advisor was Joyee Ghosh. She is now working as a modeler for Discover in Riverwoods, Illinois.

RUIDA SONG
Ruida's PhD in statistics was conferred on August 6, 2021. His thesis is "Testing, Modeling, and Approximating Nonstationary Continuous Processes on Stream Networks" and his advisor was Dale Zimmerman. He is now working as a data scientist for UFG Insurance in Cedar Rapids, Iowa.

JUN TANG
Jun's PhD in statistics was conferred on December 18, 2020. Her thesis is "Space Time Covariance Models on Networks" and her advisor was Dale Zimmerman. She is now working as a principal biostatistician with Novartis in East Hanover, New Jersey.

CHUYI WANG
Chuyi's PhD in statistics was conferred on August 6, 2021. His thesis is "Feature Screening Rules and Algorithms for Efficient Optimization of Sparse Regression Models" and his advisor was Patrick Breheny. He is now working as an analyst, data science for Liberty Mutual in Boston, Massachusetts.

ABYLAY ZHEXEMBAY
Abylay's PhD in statistics was conferred on May 14, 2021. His thesis is "Valuation of multi-period barrier options and extensions" and his advisor was Elias Shiu. He is now working for the Unified Accumulative Pension Fund of Kazakhstan.

MS Graduates

MASTER OF SCIENCE GRADUATES IN STATISTICS 2020-21:

Tyler Dylan Dennis, Shiao Liu, Jessica Choi Lu, Yujing Lu, Yue Pan, Max Sampson, Yikai Zhang, Haiyang Zhu

MASTER OF SCIENCE GRADUATES IN ACTUARIAL SCIENCE 2020-21:

Philip L. Foti, Luke Eugene Herrin, Jiantong Li, Mingyue Liu, Kaiwen Luo, Qingchen Meng, Caroline Paige Morrison, Daniel Odoom, Kayla Rose Schneider, Shing Tsoi

New Actuarial Science Majors

Due to the demanding nature of the actuarial science major and the difficulty of the professional examinations, the department maintains a selective admission program for actuarial science. Students must apply and be admitted to the major. Congratulations to the following students who were admitted into the undergraduate actuarial science major in 2021.

January 2021: Charles Barry, Trey Cobb, Alejandro Guzman, Peyton Hanley, Hoai Luu, Guy Renquist, Liang Shuqiong, Jacob Smith, Maxwell Zoss

April 2021: Ryan Becker, Justin Bowker, Andrew Herkleman, Cade McDonald, Ethan Murra, Dalton Neheim, Lucas Regina

June 2021: Liam Christensen, Austin Cochrane, Yutong Jin, Tingxuan Li, David Roth, Ethan Sauser, Jack Temme, Tanner Welsh

November 2021: Andrew Dupont, Bryce Serovy

Student Graduates

DECEMBER 2020 GRADUATES FROM THE COLLEGE OF LIBERAL ARTS AND SCIENCES

PRIMARY PROGRAM, ACTUARIAL SCIENCE

Austin Enderson-Ohrt
BS Actuarial Science, BS Economics, BS Statistics (Mathematical Statistics)

Matthew Fernandez
****BS Actuarial Science, ***BA Mathematics, ***BS Statistics (Mathematical Statistics)*

Chenxi Li
BS Actuarial Science, BBA Business Analytics and Information Systems

Xavier Loomer
BS Actuarial Science, BA Mathematics, BS Statistics (Statistical Computing and Data Science), Computer Science Minor

Jacob Nixt
BS Actuarial Science, BA Mathematics, BS Statistics (Mathematical Statistics), Risk Management and Insurance Certificate

John Scorza
BS Actuarial Science, Mathematics Minor, Statistics Minor

PRIMARY PROGRAM, STATISTICS

Ethan Babcock
BA Mathematics, BS Statistics (Mathematical Statistics), Risk Management and Insurance Certificate

Madisyn Bockman
BS Statistics (Mathematical Statistics), Mathematics Minor, Risk Management and Insurance Certificate

Weston Buckner
BS Statistics (Business, Industry, Government and Research)

Jacey Carey
BS Statistics (Business, Industry, Government and Research), Mathematics Minor, Spanish Minor

Xiaoxiong Huang
BA Mathematics, BS Statistics (Mathematical Statistics), Computer Science Minor

Austin Kerska
BA Mathematics, BS Statistics, Business Administration Minor, Risk Management and Insurance Certificate

Taehwan Kim
BS Statistics (Mathematical Statistics), Mathematics Minor

Bingcong Li
BA Computer Science, BS Statistics (Statistical Computing and Data Science)

Andrew Pottebaum
BS Statistics (Statistical Computing and Data Science)

Adam Schuck
BS Statistics (Statistical Computing and Data Science), Sport and Recreation Management Minor

Chengpeng Sun
(H) BS Mathematics, BS Statistics (Mathematical Statistics)

Luke Torrez
BA Mathematics, BS Statistics (Mathematical Statistics), Risk Management and Insurance Certificate

Zack Welp
BS Statistics (Statistical Computing and Data Science), Business Administration Minor, Mathematics Minor

Weiyao Xia
BS Statistics (Statistical Computing and Data Science), Computer Science Minor

MAY 2021 GRADUATES FROM THE COLLEGE OF LIBERAL ARTS AND SCIENCES

PRIMARY PROGRAM, ACTUARIAL SCIENCE

Jennifer Del Giudice
BS Actuarial Science, BA Mathematics

Emily Fishel
****BS Actuarial Science, ***BS Statistics (Mathematical Statistics), Mathematics Minor, Risk Management and Insurance Certificate*

Lisa Frishcosy
BS Actuarial Science, BA Mathematics, BS Statistics (Mathematical Statistics), Economics Minor, Risk Management and Insurance Certificate

Emma Heiser
BS Actuarial Science, BS Statistics (Mathematical Statistics)

Vaughn Irlbeck
BS Actuarial Science, BS Mathematics, BS Statistics (Mathematical Statistics)

Ian Lundy
BS Actuarial Science, BS Statistics, Mathematics Minor, Philosophy Minor

Bennett Oakley
*(H) *BS Actuarial Science, *BA Mathematics, Business Administration Minor*

Andrew Sherwin
BS Actuarial Science, BA Mathematics

Jordan Turner
*(H) ***BS Actuarial Science, ***BS Statistics (Mathematical Statistics), ***BA Mathematics*

Maxwell Unmacht
BS Actuarial Science, BS Statistics, Mathematics Minor, Risk Management and Insurance Certificate

Nathaniel Van Kleek
BS Actuarial Science, BA Mathematics, BS Statistics (Mathematical Statistics), Risk Management and Insurance Certificate

Student Graduates cont'd.

Hengxin Wu
BS Actuarial Science, BS Statistics (Mathematical Statistics), Mathematics Minor, Risk Management and Insurance Certificate

Zhenxiao Wu
BS Actuarial Science, BA Mathematics

Qiyu Xie
BS Actuarial Science, BA Mathematics, BS Data Science

PRIMARY PROGRAM, STATISTICS

Special Suzette Beltran
BS Statistics (Mathematical Statistics), Spanish Minor

Brandon Biedermann
BS Statistics (Statistical Computing and Data Science), BS Mathematics

McKenzie Clare Brady
BS Statistics (Mathematical Statistics), BA Mathematics

Aditya Chahande
BS Statistics (Statistical Computing and Data Science), Business Administration Minor

Yunni Cheng
BS Statistics (Mathematical Statistics), BS Mathematics

Rachel Caroline Crady
BS Statistics (Mathematical Statistics), BA Mathematics

Jacob L. Heid
BS Statistics (Statistical Computing and Data Science), BS Public Health, Mathematics Minor, Sustainability Program Certificate

Sabrina Lynn Holtz
BS Statistics (Mathematical Statistics), BA Mathematics

Ethan Randall Kramer
BS Statistics (Statistical Computing and Data Science), BA Computer Science

Yeonjin Lee
BS Statistics (Statistical Computing and Data Science), BA Communications Studies, Computer Science Minor, Mathematics Minor

Yihui Liu
BS Statistics (Statistical Computing and Data Science), BS Mathematics

Tristan Raye Macy
BS Statistics (Statistical Computing and Data Science), Mathematics Minor

Carolina Matuk
BS Statistics (Statistical Computing and Data Science), BS Mathematics, Computer Science Minor

Andrew Thomas McQueen
BS Statistics (Mathematical Statistics), Risk Management and Insurance Certificate

Samir Nezirevic
BS Statistics (Business, Industry, Government and Research)

Sarah Marie Paguia
BS Statistics (Business, Industry, Government and Research), BS Economics (Business), Mathematics Minor

Xiaoying Pan
BS Statistics (Mathematical Statistics), BA Mathematics

Xinyuan Ren
BS Statistics (Mathematical Statistics)

Brett Dominic Rieks
BS Statistics (Statistical Computing and Data Science)

Richard Konstantin Sakharouk
BS Statistics (Business, Industry, Government and Research), Risk Management and Insurance Certificate

Hannah Marie Scott
BS Statistics (Business, Industry, Government and Research), Mathematics Minor, Risk Management and Insurance Certificate

Lauren Elizabeth Shaw
BS Statistics (Business, Industry, Government and Research), Nonprofit Leadership and Philanthropy Certificate

Calvin Jerard Skalla
BS Statistics (Business, Industry, Government and Research), BS Mathematics, Sport and Recreation Management Minor

Luyu Sun
BS Statistics (Mathematical Statistics), Mathematics Minor

Nautica Nattaiya Tatum
BS Statistics (Business, Industry, Government and Research)

Xiaofeng Yang
BS Statistics (Mathematical Statistics), BS Mathematics, Risk Management and Insurance Certificate

Shuang Zhang
BS Statistics (Statistical Computing and Data Science), Computer Science Minor, Mathematics Minor

Liuchen Zhao
***BS Statistics (Mathematical Statistics), **BS Mathematics*

PRIMARY PROGRAM, DATA SCIENCE

Trevor Martin Cardenas
BS Data Science, BA Mathematics, Public Health Certificate

Brandon Koch
BS Data Science

Alaa Mohamed
BS Data Science

Jacob Seedorff
**BS Data Science, *BS Mathematics*

***** With Highest Distinction**
**** With High Distinction**
*** With Distinction**
(H) Honors in the Major

New Associates and Fellows

Congratulations to the following Iowa alumni who became Fellows, CERAs, or Associates of the Society of Actuaries and Fellows and Associates of the Casualty Actuarial Society!

SOCIETY OF ACTUARIES
Fellows (FSA)

August 2021 - Ryan Matthew Smith (BA Mathematics 2009)
August 2021 - Danlu Yang (MS 2012)
August 2021 - Weiwei Zheng (MS 2014)
July 2021 - Lu Chen (MS 2014)
July 2021 - Jinbo Qiu (MS 2013)
April 2021 - Kathleen Thomas Baustian (BS 2011)
April 2021 - Luke Gude (MS 2016)
April 2021 - Haibo Liu (PhD 2019)
April 2021 - Ting Pan (MS 2014)

SOCIETY OF ACTUARIES
Chartered Enterprise Risk Analysts (CERA)

July 2021 - Nicholis Odegaard (BS 2019)

SOCIETY OF ACTUARIES
Associates (ASA)

October 2021 - Gavin Ferguson (MS 2008)
October 2021 - Tina (Liu) Lounsbury (BS 2019)
September 2021 - Anthony Paul Dagner (BS 2017)
August 2021 - Jonathan Reinhart (BS 2018)
August 2021 - Jared D. Westphal (BS 2016)
July 2021 - Justin Dickinson (BS 2018)
July 2021 - Liyun Ma (MS 2017)
July 2021 - Rachel Rinehart (BS 2020)
May 2021 - Haoming Li (MS 2016)
May 2021 - Nicholis Odegaard (BS 2019)
April 2021 - Kai Bian (BS 2017)
March 2021 - Weichen Jin (BS 2015)
March 2021 - Chee Yang Lee (BS 2013)
March 2021 - Felipe Su Li (MS 2018)
March 2021 - Xu Wang (BBA 2013, MS 2016)
March 2021 - Jiaying Xu (BS 2015)
March 2021 - Abylay Zhexembay (MS 2018, PhD 2021)
January 2021 - Nathan Promes (BS 2019)
January 2021 - Samuel Werner (BS 2019)
January 2021 - Morgan Zuidema (BS 2019)
December 2020 - Luis Antonio Brena Henostroza (MS 2018)
December 2020 - Raymond Lei (MS 2015)

CASUALTY ACTUARIAL SOCIETY
Associates (ACAS)

2021 - James Peter Arns (BS 2010)
2021 - Carter Burns (BS 2019)
2021 - Fan Dong (BS 2016)
2021 - Max Peterson (BS 2018)

CASUALTY ACTUARIAL SOCIETY
Fellows (FCAS)

2021 - Joel Bruxvoort (BS 2010)
2021 - Kenneth A. Clancy (BS 2016)
2021 - Sara Chen (BS 2017)

Student Awards & Scholarships

STUDENT AWARDS

Our annual student awards were announced in May 2021. Due to the pandemic, the official recognition event was canceled.

The **Allen T. Craig Award** for outstanding teaching assistant was presented to Tyler Dennis.

Lloyd A. Knowler Award for Outstanding Achievement in Actuarial Science
Emily Fishel and Jordan Turner

We also presented several **Robert H. Taylor Awards** for academic achievement in actuarial science. Prize money totaling $5,800 was distributed among this year's recipients:

Robert H. Taylor Award in Actuarial Stochastics
Abylay Zhexembay

Taylor-Cosby Award for outstanding performance in ACTS:3080
Joseph Vize and Anna Kline

Taylor-Craig Award for outstanding performance in ACTS:4130
Joseph Vize

Taylor-Knowler Award for outstanding performance in ACTS:4280
Emily Fishel and Jiantong Li

Rietz Award: Outstanding Performance on the PhD Comprehensive Exams
Zongyi Xu

STUDENT SCHOLARSHIPS

Scholarships totaling $303,850 were awarded to several students in the 2021-22 academic year. Included among these were several named scholarships:

Lloyd A. Knowler Scholarship
2021-22: Jack Temme

Richard D. Pearson Scholarship
2021-22: David Roth and Jack Temme

Principal Financial Group Scholarship
2021-22: Madison Rambo and Alejandro Guzman

Harold W. Schloss Scholarship
2021-22: Morgan Joranlien

Transamerica (AEGON) Scholarship
2021-22: Peyton Hanley and Maxwell Zoss

Charles E. and Eleanore G. Wilson Scholarship
2021-22: Charlie Barry, Ryan Becker, Justin Bowker, Liam Christensen, Trey Cobb, Andrew Dupont, Alejandro Guzman, Owen Hamel, Peyton Hanley, Bethany Junge, Brett King, Brock Lu, Trang Luu, Isaiah Martin, Cade McDonald, Justin Mok, Nathan Munshower, Ethan Murra, Dalton Neshelm, Samuel Reckamp, Nate Reed, Lucas Regina, Guy Renquist, David Roth, Ethan Sauser, Bryce Serovy, Jacob Smith, Ryan Venem, Ethan Verwers, Joseph Vize, Elias Washor, Tanner Welsh, Tyler Witthoft.

Statistics Departmental Scholarship
2021 (Spring): Ziyu Gao, Carolina Matuk, Xiaoying Pan, Xiaofeng Yang

2021 (Fall): Rachel Anderson, Ziyu Gao, Eidaleona Odole, Nhan To

Graduate Spotlight

Tyler Dennis

As a student in the Undergraduate-to-Graduate (U2G) program in statistics, Tyler graduated in May 2021 with an MS in statistics, having earned a BS in mathematical statistics in May 2020 as well as a BBA in finance in December 2020. In addition, his Creative Component presentation won the graduate division at the Spring 2021 MinneMUDAC Student Data Challenge. This past summer, he began working at Deutsche Bank in Chicago as an investment banking analyst. Congratulations on all of your accomplishments, Tyler!

Tell us about you and why you chose to come to the University of Iowa.
I am originally from Cedar Rapids, Iowa, and I grew up as part of a Hawkeye family. The University of Iowa offered me the chance to stay close to my family, while having an exciting atmosphere and community with a Big Ten experience, which were big draws for me.

Tell us about your experience as a student in the Undergraduate-to-Graduate (U2G) program in statistics.
The U2G program allowed me to truly push myself and get the most out of my time at Iowa. Through this program, I was able to get my BS in mathematical statistics, BBA in finance, and MS in statistics all in four years! During my first two years at Iowa, I realized I wanted to push my education past the typical bachelor's degree, while not spending more than five years in college, and the U2G program allowed me to achieve that goal. While there were strenuous semesters with heavy course loads, for both my undergraduate and graduate degrees, it was all manageable and gave me an experience to grow a lot.

Do you have any advice for students interested in the U2G program?
If you are interested in the U2G program, reach out to professors and faculty! I had many great talks with professors when deciding if the program was for me, and I remain close to those professors today. That is another big benefit of the U2G program — you get to build close relationships with part of the statistics faculty.

What are some of the challenges you've faced as a student over the past year related to the pandemic?

Tyler Dennis

One of the biggest challenges I have faced during the pandemic was maintaining a balanced lifestyle that allowed me to stay focused on my work. I really enjoy going to the classroom, whether I am the student (I learn better while in person) or teaching (being a TA in person is more enjoyable than being a virtual TA). Finding a way to adjust to the new virtual landscape, while staying motivated, was my biggest challenge related to school and work. In my personal life, I had a big struggle with maintaining relationships. I have some friends that I have not been able to see in person since before the pandemic began and keeping in touch can be a struggle. While these challenges have been present for a little over a year, I feel that I have been able to overcome them, and I have seen the community come together to overcome these challenges as well which has been fantastic to see!

Tell us about your Creative Component presentation, "March Madness Analysis: Can an Empty Bracket Give Enough Information for Prediction?"
I wanted to make my Creative Component (CC) about something interesting to me that I could bring up in conversation with my family and other friends that are not as familiar with various statistical methods; only pursuing my master's, and not a PhD, allowed me to focus on an applied CC rather than a theoretical CC. Sports analysis was an easy choice — I was able to create a model for an interesting subject, and if it was successful, I could even create a bracket that would beat my friends' brackets!

As to why specifically I looked at empty March Madness brackets, I first looked at March Madness for the competitive aspect. My roommate is big into sports, and I wanted to show him that I could construct a statistical model that would challenge his sports knowledge. With the pandemic, the NCAA season was really weird; the tournament was canceled in 2020, games were being canceled for the 2020-21 season, and players and coaches would have to take two weeks off from Covid. Finding an objective, rather than subjective, look at the tournament was my goal, and I was able to achieve that by focusing on constructing a model just from information provided in an empty bracket.

What was it like to participate in the Spring MinneMUDAC Student Data Challenge and win the graduate division?
The Spring MinneMUDAC Student Data Challenge was a competition that had each participant create a statistical model to predict a March Madness bracket, and submit a brief write-up explaining the rationale behind the model, along with the bracket. I learned of the challenge after presenting my CC and figured this would be a great way to test how my CC stacks up to other statistical models that are created in other graduate colleges. I was extremely overjoyed to have won. The confirmation from the challenge that my model did not just work but that it worked well was such a good feeling.

How has your education in statistics and business at Iowa prepared you to succeed professionally and personally?
I like to think of them as two sides to a puzzle: They both have offered me different perspectives on the content learned, but also on critical thinking and problem solving. Business has given me an understanding of finance and the perspective of business, while statistics has allowed me to critically think during my graduate coursework and strain myself with difficult problem solving. Both colleges have given me many tools that will help me in my career, but combining them allows me to have a unique perspective that I hope will be valuable in my future career.

What is your favorite memory from your time at Iowa?
I have a lot of good memories from my time at Iowa, and it is hard to pick just one. Whether it was football games with friends (back pre-Covid), or finding ways to get together during Covid, my favorite memories are always tied to the people I interacted with. My random roommate my freshman year in the dorms has been living with me ever since, and I have had a stable group of friends since freshman year as well. Being able to tackle the highs and lows of college together has been a great experience, and I have made friends that will last a lifetime.

During your time at Iowa, was there anything or anyone that inspired you?
While at Iowa, I have been very inspired by the upperclassmen I have met and seeing how successful they have been. I have had many professors that I have formed relationships with that have inspired me and pushed me to better myself. Some professors that come to mind are Professor DeCook and Professor Lewis-Beck for helping me make the decision early on to pursue the U2G and get the most out of my time at Iowa; and Professor Bognar for helping me through my CC on March Madness, as well as being the first professor I TA'ed for.

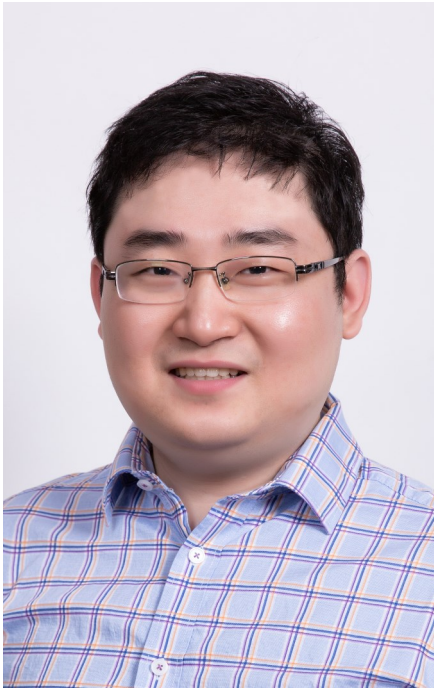
Where do you think you will be working in three years, and what does the future look like for you?
I accepted a full-time offer at Deutsche Bank in Chicago as an investment banking analyst last fall, and I am extremely excited to begin working there later this summer. I hope to be able to bring my finance knowledge from the business school, as well as the critical thinking and problem-solving skills I have gained from my time in statistics at Iowa, to bring a unique perspective and offer a lot of value to the bank. Overall, I am extremely excited for my next step and cannot wait to see where the future takes me!

What are your dreams? Bucket list items?
I am very excited for where the future will take me, and I am along for the ride. I am really excited for my career in investment banking and cannot wait to see where that takes me. I am also very excited to see how I can bring a statistics perspective into the industry. My job does not begin until mid-July, so in the meantime I am tackling some bucket list options, mainly traveling. Some bucket list travel items I am doing this summer are going to Alaska with my dad and doing another section-hike of the Appalachian Trail with some friends. A longer-term bucket list item is hiking the Camino de Santiago in Spain.

Faculty Spotlight

Josh Zhiwei Tong

Our new assistant professor in the Department of Statistics and Actuarial Science at the University of Iowa is Josh Zhiwei Tong. Josh received his PhD in risk and actuarial studies from the University of New South Wales Sydney, working with Qihe Tang and Bernard Wong. He earned an MS in actuarial science from the University of Iowa, and a BSc in statistics from the University of Science and Technology of China. His PhD thesis was titled "Portfolio Risk Analysis: Aggregation and Allocation" and received the UNSW Dean's Award for Outstanding PhD Theses. His research interests include credit portfolio losses, financial networks and systemic risk, and insurance under information asymmetry. Welcome to our department, Josh!



Josh Zhiwei Tong

Tell us about your education and what brought you to the University of Iowa.
I studied in Iowa from 2016–2018, during which I met many nice people and had much fun. I miss the Pentacrest, Kinnick Stadium, the Field House, and this list goes on and on. When I heard that the University of Iowa was recruiting, I did not hesitate to apply.

Who has had the most influence on your career or research?
There was a time when I thought about giving up my PhD studies. I was fortunate that my primary PhD supervisor, Qihe Tang, never lost his appreciation of me and kept providing me with endless support, which eventually saved me from despair and ignited my passion in research. He is my role model, and I have learned a lot from him.

What advice would you offer to students who would like to pursue a career in your field?
The path to becoming an actuary is not easy. We all have to trust the process when we get frustrated. In the meantime, seize the opportunities to talk to and learn from people outside our field. Actuarial science has never been as interdisciplinary as it is nowadays. You will find in our field the usage of techniques from finance, statistics, public health, and even climatology. It is always good to know more.

What do you like most about teaching students?
I enjoy taking questions and hearing ideas from students, just as much as I enjoy sharing my own intuition with them. Students might remind me of something that I would have never noticed by myself. I think teaching is analogous to presenting research, and discussing with others helps me think more deeply.

What impact has the pandemic had on your teaching and/or research?
During the pandemic, I have been teaching online, and I do find it difficult to engage students, especially when the course is mathematically heavy. It is a great relief to know that courses are being offered face to face now. In terms of research, I think the pandemic might actually have brought more collaboration opportunities, because most people have got used to meeting online. We can also attend conferences and give presentations without having to travel.

How do you like to spend your free time?
I am a huge fan of sports. I like watching F1 and have been a supporter of the Scuderia Ferrari Team since my childhood. I also like traveling, but unfortunately, I have not had many chances to travel during the pandemic. I have a list of places that I want to visit in the future.

Alumni News

UI alumnus **James A. Miles** (MS 1977) received a 2021 Outstanding Volunteer Award of the Society of Actuaries (SOA). According to the SOA, "Jim was an integral part of the development team for the International Financial Reporting for Insurers (IFRI) Certificate Program. In that role, he helped to develop the learning objectives; assisted with the Request For Proposal for hiring a consultant; reviewed and commented on massive quantities of content for all 6 e-learning modules through multiple iterations of development; helped with communications and meetings with the oversight group; was a key developer for two seminars; assisted with development of the final assessment for the certificate; reviewed and commented on all pilot group feedback; served as a grader for the final assessment for the certificate for pilot group participants; and occasionally stepped in as project leader. Jim's huge contributions of volunteer time and expertise as an education expert, financial reporting professional, thought leader and teammate ensured that the educational content was well-crafted and the certificate program was developed and rolled out in a very tight timeframe."

In Memoriam

Class of 1946
Hsu (Lin) Tung-Kuei
Palo Alto, CA (MS 1946) died in January 2018

Class of 1947
James Kemble
Victoria, MN (BA 1947) died in July 2021

Class of 1950
Wendell Jones
Greensboro, NC (MS 1950, PhD 1969) died in July 2016

Class of 1951
Darrel Croot
Stamford, CT (BA 1951) died in July 2020

Class of 1953
Russell Jensen
Milwaukee, WI (BA 1953, MS 1954) died in November 2019

Class of 1956
Donald Jones
Corvallis, OR (MS 1956, PhD 1959) died in June 2021

Earl Lehmann
Columbia, SC (MS 1956) died in May 2020

Class of 1960
Elliot Tanis
Holland, MI (MS 1960, PhD 1963) died in July 2021

Class of 1961
Charles Sampson
Carmel, IN (BA 1961, MS 1963) died in July 2021

Joan (Boese) Stebbins
Council Bluffs, IA (BA 1961) died in May 2021

Class of 1963
Stanley Walljasper
Ankeny, IA (BA 1963, MS 1965, PhD 1970) died in June 2021

Class of 1964
Gilbert Hewett
Cedar Falls, IA (MS 1964, PhD 1972) died in December 2020

Class of 1968
Bobby Vawter
Saint Paul, MN (MS 1968) died in July 2020

Class of 1971
Dennis Haack
Lexington, KY (PhD 1971) died in June 2021

Class of 1984
Brian Makuck
Smyrna, GA (BS 1984) died in February 2021

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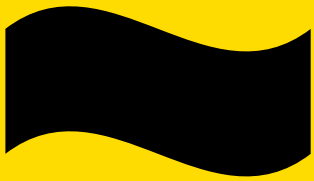

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PLEASE NOTE - EMAIL ADDRESS REQUEST:
The Department of Statistics and Actuarial Science would like to send this newsletter to all of our alumni via email in future years. Please send us your current email address to **statistics@uiowa.edu**. Thank you!