NC ASA CHAPTER BULLETIN

Greetings from NC ASA President Susan Simmons

I hope everyone's 2021 is off to a great start! Although the past year has been challenging, the NC ASA has continued to stay strong and provide opportunities and resources for our members. In this upcoming year, the NC ASA Chapter plans to continue hosting events and networking opportunities, while remaining safe and following state guidelines.

It was great seeing friends and colleagues during our first virtual social in February (be on the lookout for our next social in May!). We also have an exceptional line-up for our webinar series this year. Elizabeth Mannshardt started us off with our first Professional Development webinar on March 19th. Don't worry, if you were unable to attend, you can still watch it on our YouTube channel. Our next big event is the virtual Career Information Fair, which will be held on April 13th. Registration for the Career Information Fair can be found at https://ncsu.zoom.us/meeting/register/tJckf-yrrTwvHdCl_sEHfHnHqMVHVWiOu9mE.

I would like to encourage any member with ideas or thoughts for events to reach out to me or anyone on the board. Looking forward to a great year with NC ASA!

Susan Simmons

NC ASA Calendar - Upcoming Events

https://community.amstat.org/northcarolina/home

Career Information Fair
- April 13 at 3:00 pm Eastern

Virtual Social
- May 10th

Machine Learning Webinar:
- May 7 at 12:00 pm Eastern

Practical Bayesian for Statistics and Machine Learning
- August (TBD)

In This Issue

Professional Development and Machine Learning Webinars

https://community.amstat.org/northcarolina/webinarseries

Professional Development

Elizabeth Mannshardt

On **March 19th**, NC ASA hosted our first professional development webinar of 2021. Elizabeth Mannshardt presented *Communication and Leadership Skills for Navigating your Professional Success.*

Abstract: This webinar highlights considerations beyond expertise in statistical methodologies. In a cross-disciplinary, global collaborative professional world, Power Skills such as communication are key tools. The rapidly expanding platform of collaborative work across disciplines often includes a variety of communications: from highly educated scientific colleagues, technical non-scientists with whom one collaborates in day-to-day work, briefings with senior management, to the media and the public as well as decision makers in policy. Building Power Skills can also help you develop leadership skills and define your leadership style. Together these can create options across many types of career paths. Combining experiences across academic research and teaching, industry, and government, Elizabeth discusses how to develop power skills using real-world examples with actionable and practical techniques. The discussion includes a set of activities for participants - for immediate hands-on interaction as well as take-home reflection.

Elizabeth Mannshardt is the Associate Director of the US Environmental Protection Agency's Information Access and Analytic Services Division and an Adjunct Associate Professor in the Department of Statistics at North Carolina State University. Elizabeth is a former President of the North Carolina Chapter of the American Statistical Association and actively serves on committees and Executive Boards within the ASA. Originally from California, she received her PhD in Statistics from UNC Chapel Hill. Prior to joining EPA, Elizabeth held two National Science Foundation Postdoctoral Fellowships in Environmental Statistics and was a Visiting Assistant Professor in the Department of Statistical Science at Duke University.

Machine Learning

On **Friday, May 7th at 12:00 pm (noon) Eastern**, NC ASA will host our second webinar *Model Agnostic Interpretability* by Ricky Tharrington.

Many modern machine learning packages offer high degrees of numerical accuracy at the cost of model complexity. Traditionally, trust for these complex models was developed by carefully testing their accuracy on unseen data, with no attempt to understand the underlying model. In some industries the opaque nature of these models renders them useless, as regulatory agencies are increasingly requiring transparency in decision-making processes powered by these models. Interpretability methods aim to facilitate the understanding of complex models by humans. The model-agnostic branch of interpretability focuses on methods that can be used for any type of machine-learning model. Prior to using these methods out-of-the-box, it's important to understand how they're calculated so that they can be interpreted correctly. In this talk, two of these methods are explained: Partial Dependence Plots and Shapley Values.

Ricky works at SAS as a Machine Learning Developer. He primarily works on SAS Viya's pipeline automation tools. Previously, Ricky worked as a Software Tester for SAS Viya's model interpretability methods.

NC ASA Student Corner

Virtual Career Information Fair:

The NC ASA will host our Statistics and Data Science Virtual Career Information Fair on Tuesday, **April 13th at 3:00 pm Eastern**. Registration is free, but required for all professional and student participants and can be found underline here. We would like to thank the following corporate sponsors for their generous support of the fair: Abt Associates, Duke Clinical Research Institute, Duke University Department of Statistical Science, United States Environmental Protection Agency, FHI 360, G1 Therapeutics, NC State University - Institute for Advanced Analytics, RTI International, SAS, Sciome, Viiv Healthcare, and Westat.

Student Travel Award:

For anyone interested in applying for an NC ASA Student Travel Award in 2021, the next round of application reviews will take place on **April 1st**. The award is open to all students in North Carolina at any level of education. Recipients can receive up to $250 to attend a conference or workshop in North Carolina or any ASA sponsored conference. More information about the award can be found here along with a link to apply. If you have any questions, please reach out to stephaniezimmer@gmail.com.

Logo Competition:

Coming soon: A contest to redesign the NC ASA logo! All creative minds should be on the lookout for contest details on April 13!

Member Profiles

Member: Jacqueline Hughes-Oliver

Jacqueline M. Hughes-Oliver is Professor of Statistics at North Carolina State University (NC State). She earned her PhD in Statistics from NC State in 1991, following a BA in Mathematics from the University of Cincinnati in 1986. Except for brief stints elsewhere (University of Wisconsin-Madison 1991-1992, Professor of Statistics at George Mason University 2011-2014), she has been at NC State. Hughes-Oliver was Director of the Exploratory Center for Cheminformatics Research at NC State (2005-2009) and was Director of Graduate Programs for the Department of Statistics at NC State (2007 to 2010).
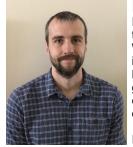
Hughes-Oliver's research has been sponsored by a number of agencies, including the National Science Foundation, the North Carolina Department of Transportation, and the National Institutes of Health. Her methodological research focuses on prediction and classification, variable and model selection with dimension reduction, design and analysis of pooling or mixture experiments, optimal design, and spatial modeling. Application areas include drug discovery and cheminformatics, environmental modeling, transportation modeling, engineering manufacturing, genomics, and metabolomics.

In addition to research activities, Hughes-Oliver is extremely committed to teaching at all levels. She has been recognized several times with Outstanding Teacher Awards, and elected to the NC State Academy of Outstanding Teachers. In 2001 she was named an Alumni Distinguished Undergraduate Professor at NC State. She was also recognized in 2020 with the Board of Governors' Award for Excellence in Teaching from the College of Sciences at NC State, after having been recognized in 2004 with the Board of Governors' Award for Excellence in Teaching from the College of Physical and Mathematical Sciences at NC State.

Other awards include the D.D. Mason Faculty Award from the Department of Statistics at NC State (2006), the ASA's 2006 Statistics in Chemistry Award, Fellow of the ASA in 2007, and the Blackwell-Tapia Prize in 2014.

Hughes-Oliver is passionate about outreach to underrepresented groups in the mathematical and statistical sciences. She has extensive service to conferences and workshops such as StatFest, Field of Dreams, Infinite Possibilities, Joint Statistical Meetings Diversity Program and Mentoring Workshop, and ENAR Diversity Workshop. She also currently serves on a number of boards focused on broadening participation, including the National Alliance for Doctoral Studies in the Mathematical Sciences, and the African Diaspora Joint Mathematics Workshop (ADJOINT).

Member: Michael Lamm

I am a senior research statistician developer in the Advanced Analytics Division at the SAS Institute. At SAS, I develop software primarily in the areas of causal inference and statistical learning. What I enjoy most about my job is that it combines researching new statistical methods and their implementation with learning about the problems people are trying to solve with these methods. Membership in the ASA and the NC-ASA section have benefited my professional development a great deal, as both organizations bring together statisticians working in a wide variety of roles. I've enjoyed both attending and contributing to conferences, meetings, and webinars offered by both organizations.

I earned my bachelors in statistics and mathematics from Rutgers (2010) and earned my PhD from the Department of Statistics and Operations Research at UNC Chapel Hill (2015). My wife Melissa is a fellow Rutgers alum and received her PhD from the Department of Biological Sciences at NC State University. We recently had our first child and enjoy going on hikes with her and our dog in the many lovely area parks. With the free time I still have, I enjoy running and reading.

Member: Elizabeth Mannshardt

What I love about being a statistician is the many different types of opportunities and experiences that it provides. In 2020 I took on a role more on the IT side of data science than my previous roles as a traditional statistician. I am the Associate Director of the US Environmental Protection Agency's Information Access and Analytic Services Division (IAASD) in EPA's DC headquarters. My division hosts a suite of analytic and geospatial tools used across the agency. One of our major projects is the ongoing development and implementation of a cloud-based data management and analytics platform offering big data and machine learning functionalities on an enterprise scale. This platform houses one of the federal government's most heavily utilized and publicly accessed data warehouses – Envirofacts. Working with IAASD's amazing Data Science/IT team has been an incredible experience, offering an up-close look at many different stages of the data science pipeline – from data generation and database architectures to data engineering and data governance - leading to interactive public tools and visualizations for data information. While I am now located in DC, I will always remain a North Carolinian at heart! I am an Adjunct Associate Professor in the Department of Statistics at North Carolina State University, was a Visiting Assistant Professor in the Department of Statistical Science at Duke University, and received my PhD in Statistics from UNC Chapel Hill. A stats path of the southern basketball greats.

I have worked quite a bit with ASA in many capacities, including as a former President of NC ASA, and currently serve on several ASA committees and the Executive Board for ASA's Section on Statistics and Environment. Of great importance to me is providing opportunities for students and young professionals, such as NC ASA's Mentoring and Early Career Development Workshop. (I learned quite a bit myself!) The most important and rewarding aspect of working with ASA's incredible community has been the people I have had the opportunity to meet - I look forward to meeting so many more!

I love to spend time outdoors – hiking, playing volleyball, and attempting to garden. My husband Jim and I love to travel. Recent (pre-Covid) trips included the Rocky Mountains (thanks JSM Denver!), Maine's Acadia National Park, and the Oregon coast. We also enjoy experiencing North Carolina's amazing local restaurants and craft beers, and exploring the beautiful NC state parks, lakes, mountains, and beaches. I am also a bit of a Peloton addict and a big karaoke fan – looking forward to safe gatherings again soon!