

NCCC170: Research Advances in Agricultural Statistics

Annual meeting

Hosted at the University of Puerto Rico, Mayagüez, PR

Meeting held both in-person and by Zoom

June 13-14, 2024

Members present for business meeting and technical program: Nora Bello (USDA-ARS), Bruce Craig (IN, Admin.), Xin Dai (UT), Philip Dixon (IA), Susan Durham (UT), Conor Fair (GA), Carla Goad (OK), Réka Howard (NE), Nicholas Keuler (WI), Josephina Lacasa (KS), Raúl Machiavelli (PR), Neil Paton (Cargill, Inc), Julia Piaskowski (ID), Quentin Read (USDA-ARS), *Simon Riley (FL), Guilherme Rosa (WI), Robert Tempelman (MI), and Kathleen Yeater (USDA-ARS), (* not currently on the NIMSS participant list)

Members present for technical program but not business meeting: Clark Kogan (I), Samuel Fernandes (AK), Alex Lipka (IN), Daniel Runcie (CA),

Others present for technical program: Sara Duke, Julie Couton Garai, Daniel Palmer, Marina Ptukhina, Andre Szejner Sigal, Walt Stroup

2024 Officers: Nora Bello, Chair; Simon Riley, Acting Secretary; Kathy Yeater, Program Chair; Raúl Machiavelli, local arrangements

Minutes:

Technical program: The meeting began at 8:53 a.m. ET on Thursday, June 13, 2024, with a welcome and opening remarks by Raúl Machiavelli, Dean and Director of the College of Agricultural Sciences at the University of Puerto Rico.

The technical program consisted of the following presentations and discussions:

Thursday, June 13, 2024

Alex Lipka
University of Illinois at Urbana-Champaign

Quantifying Evidence for the Omnigenic Genetic Architecture Through a Simulation Study

Quentin Read
USDA-ARS

Exploring the Options for Quantifying Uncertainty in Derivatives of Splines

Réka Howard
University of Nebraska

Integrating Genomic, Weather, and Secondary Trait Data for Multiclass Classification

Julio Cesar Hernandez
University of Puerto Rico

Food Security Data Center

Clark Kogan
Washington State University

A Discrete-Time Zero-Inflated Beta Bayesian Model for Disease Prevalence Over Time

Bruce Craig
Purdue University

Systematic Reviews Workshop

Sara Duke and Kathleen Yeater
USDA-ARS

What is Data? The Statistician's Role in Data
Management Planning

Réka Howard
University of Nebraska

Statistical Consulting Training in Academia

Friday, June 14, 2024

Discussion led by Walt Stroup and
Nora Bello

What SAS and R Software Users Need to Know
about GLMMs: An Example-Driven Discussion

Nora and Walt introduced conceptual and methodological challenges posed by generalized linear mixed models and their implementations in software platforms. The challenges are not just theoretical but also have practical implications for estimation and inference. The group discussed the identification, development, and deployment of best practices, with particular but not sole focus on SAS and R software platforms. A lively discussion ensued, with general consensus that this effort would be valuable to various user groups (software developers, consulting statisticians, graduate instructors, academic researchers, and general users). Several group members expressed interest in working jointly on this project. Walt and Nora proposed a framework for joint work, based on selected examples from Stroup, Ptukhina, and Garai (2024) that illustrate a wide range of GLMM issues; this framework is available via OneDrive to participants. Nora will begin to coordinate joint work following the meeting.

Business meeting: The business meeting began at 10:37 a.m. on Friday, June 14, 2024. Nora Bello presided. The following items were discussed:

1. Nora thanked Raul and his staff along with program chair Kathy Yeater for their organizing efforts and offered an additional welcome to the new members joining the meeting for the first time this year.
2. Nora reviewed the NCCC-170 annual reporting requirements and informed members that they would soon receive a request for information. Nora reminded members to complete that request promptly as possible so that the annual report itself can be completed and submitted within the 2 month deadline.
3. Nora explained that the current project cycle runs 2021-2026, and a new project cycle will be starting in 2026 through 2031. In preparation for the new project cycle, the group will be discussing objectives for the new project at the 2025 annual meeting. Members were encouraged to keep this horizon in mind as group discussions progress during the meeting and the next year. Suggested potential objectives for the new project included (1) developing/expanding materials for systematic review as presented by Bruce Craig, and (2)

mixed model implementation on SAS and R platforms as presented by Walt Stroup and Nora Bello.

4. Old business

4.1. The project's new website at www.nccc170.org is up and running thanks to work by Aaron Rendahl and Jared Niemi. Nora encouraged participants to update their contact info and photo on the website.

4.2. Nora encouraged everyone—including new participants—to confirm their registrations in NIMSS. Those not yet registered should reach out to their own Agricultural Experiment Stations to have an Appendix E filled out or, alternatively, to Christina Hamilton (christina.hamilton@wisc.edu), the Regional Systems Administrator. Nora or Bruce can provide additional guidance, if questions.

5. New business

5.1. Planning for future meetings

5.1.1. 2025: University of Idaho in Moscow, ID on June 5th-6th, with Julia Piaskowski as local host and Conor Fair serving as program chair.

5.1.2. 2026: Neil Paton (located in Dayton, OH) and Rob Tempelman (East Lansing, MI) each volunteered to potentially serve as hosts for the meeting, with dates and locations TBD.

6. Nora moved and Bruce seconded adjournment at 11:25 am.

Group photos were taken in the meeting room (to include virtual participants) and in front of the Piñero Building at the UPR campus.