**NCCC170: Research Advances in Agricultural Statistics**

Annual meeting

University of Idaho, Moscow, ID

Meeting held in-person and virtual

June 5-6, 2025

**Members present:** Nora Bello (USDA-ARS), Bruce Craig (IN, Admin.), Xin Dai (UT), Philip Dixon (IA, Retired), Susan Durham (UT, Retired), Conor Fair (GA), Samuel Fernandes (AR), Carla Goad (OK), Reka Howard (NE), Nick Keuler (WI), Clark Kogan (WA), Josefina Lacasa (KS), Alex Lipka (IL), Raul Macchiavelli (PR), Larry Madden (OH), Daniel Palmer (ND), Neil Paton (Cargill), Julia Piaskowski (ID), Aaron Rendahl (MN), Daniel Runcie (CA), John Stevens (UT), Kathy Yeater (USDA-ARS)

**Others present:** Harpreet Kaur (ID), Quentin Read (USDA-ARS), Bryan Vinyard (USDA-ARS, Retired), Linda Young

**2025 Officers:** Nora Bello, Secretary; Susan Durham, Scribe; Conor Fair, Program Chair; Julia Piaskowski, local arrangements

**Minutes:**

**Technical program:** The meeting began at 8:50 am on Thursday, June 6, 2025, with a welcome by host Julia Piaskowski and opening remarks by Matt Powell, Interim Associate Dean of Research & Director of Idaho Agricultural Experiment Station, University of Idaho.

The technical program consisted of the following presentations and discussions:

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| **John Stevens**1 and Matthew Lister1,21*Utah State University,* 2*Space Dynamics Laboratory* | Improving interpretability in machine learning using confidence intervals in ALE plots |
| **Daniel E. Runcie***University of California-Davis* | Goodhardt’s law and plant breeding. Is cross-validation misleading about the success of genomic prediction? |
| **Philip Dixon**, Mallory Levens, and Andrew Somerville*Iowa State University* | Using an extension of fragmentary data analysis methods to predict sex from fragments of bones |
| **Josefina Lacasa** and Daran Rudnick*Kansas State University* | Leveraging TAPS extension efforts for research purposes – opportunities, and challenges |
| **Aaron Rendahl***University of Minnesota* | Comparing the effects of sewage sludge ash and other recycled phosphorus fertilizers on soil quality; a two-way design plus control with several repeated measures |
| **Alexander E. Lipka***University of Illinois at Urbana-Champaign* | Mixed random forest-based GWAS and a forward-in-time simulation study |
| **Conor G. Fair**1, Julia Piaskowski2, Raúl Macchiavelli3, Josefina Lacasa4, Bruce A. Craig5, and Walter W. Stroup6 *1University of Georgia, 2University of Idaho, 3University of Puerto Rico-Mayagüez, 4Kansas State University, 5Purdue University, 6University of Nebraska-Lincoln* | Best practices for GLMMs with zero-inflation—unique challenges for repeated-measures data and fitting covariates in binary process |
| **Nora M. Bello**1**,** Walter W. Stroup2, **Julia Piaskowski**3**, Josefina Lacasa**4**, Reka Howard**2**, Daniel****G. Palmer**5, **Quentin D. Read**1, **Susan L. Durham**6, **Conor G. Fair**7, **Clark Kogan**8, **Raúl E. Macchiavelli**9,and **Bruce A. Craig**10*1USDA-ARS, 2University of Nebraska-Lincoln, 3University of Idaho, 4Kansas State University, 5StatsCraft LLC, 6Utah State University, 7University of Georgia, 8Washington State University,* *9University of Puerto Rico-Mayagüez, 10Purdue University* | GLMM working group updates and plans to move forward |
| **Bruce A. Craig**1 and Eric A.E. Gerber2*1Purdue University, 2Northeastern University* | Residuals and diagnostics for multinomial regression models |

**Business meeting:** The business meeting began at 9:50 am on Friday, June 6. Bruce Craig and Nora Bello presided. The following items were discussed:

1. Bruce Craig thanked Julia Piaskowski for local arrangements and Conor Fair for organizing the technical program. He welcomed new member Daniel Palmer.
2. The annual report is due within 60 days, i.e., August 6. Nora Bello requests everyone’s input by July 10, using the Google document [here](https://docs.google.com/document/d/11mSquPoe-xiOqLIeuky317yz9zvQmOfm7CVctS9h0vw/edit?tab=t.0), covering activities from July 1, 2024, through June 30, 2025.
3. Old business
	1. Those persons who want to be added to the NCCC-170 website <https://nccc170.org/> created and maintained by Jared Niemi and Aaron Rendahl can contact Aaron at rend0020@umn.edu.
4. New business
	1. Planning for future meetings
		1. 2026: The Cargill, Inc. facility in Lewisburg, OH, hosted by Neil Paton. Date to be determined (either June 11-12 or June 18-19). Conor Fair will be program chair.
		2. 2027: Tentatively, North Caroline State University, Raleigh, hosted by Quentin Read. Dates to be determined. Program chair to be determined.
		3. Alex Lipka and Samuel Fernandes tentatively offered their locations for meetings in 2008 and 2029. Bruce Craig and Dan Runcie expressed willingness to host at some point in the future.
	2. Nora Bello will be stepping down as Secretary after this next year, allowing a transition period for her replacement. Nora has crafted a packet of information about the responsibilities of the position to ease the move. Julia Piaskowski offered to take up the role after this summer.
	3. Planning for project renewal for 2026-2031
		1. Project objectives for 2021-2026 are available for review at <https://nimss.org/projects/view/mrp/outline/18798>
		2. The effort will be led by the proposal committee, comprised of Bruce Craig, Nora Bello, Julia Piaskowski, Alex Lipka, Josefina Lacasa, and Conor Fair. Other members will be called upon to review and wordsmith.
		3. Current objectives 1, 2, and 3 can be kept. Less emphasis will be placed on Objective 4. Discussion ensued.
		4. Dates: Draft target is October 15, 2025. The final project proposal is due to NIMSS on December 1, 2025. The project start is October 1, 2026.
		5. There was discussion about the impact if Hatch funding was lost.
5. Photos were made of the group, including virtual participants, in the meeting room at the end of the day on Thursday. We looked fabulous, as usual.
6. The meeting adjourned at 11:25 am.

Some participants toured the Deep Soil Ecotron on Friday afternoon.