

Minutes:

Technical program: The meeting began at 8:30 a.m. on Thursday, June 20 with opening remarks by Dr. Chris Harbourt, CEO, AirScout, Inc. and an adjunct assistant professor of the Technology Entrepreneur Center at Illinois. Presentations ended at approximately 4:15 p.m. and were followed by a group discussion (details below) that ended at 5:00 p.m. The Friday, June 21 session began at 8:30 am with the last technical presentation followed by a second group discussion (details below). After a short break the business meeting was held. The meeting ended at 10:30 am.

The technical program consisted of the following presentations:

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| K. Chitakasempornkul¹, G.J.M. Rosa², A. Jager¹, and N.M. Bello¹
<i>¹Kansas State University and ²University of Wisconsin-Madison</i> | Hierarchical modeling of structural coefficients for heterogeneous networks with an application to animal production systems |
| Guilherme J.M. Rosa
<i>University of Wisconsin-Madison</i> | Generalized additive mixed modeling of total transport losses of market-weight pigs |
| Kathleen Yeater¹, George Yocum², Joseph Rinehart², Arun Rajamohan², Julia Bowsher³, Kendra Greenlee³
<i>¹USDA-ARS Plains Area Office of the Director, ²USDA-ARS-Insect Genetics and Biochemistry Research Unit, ³North Dakota State University</i> | Generalized linear mixed model approach to time-to-event data with censored observations |
| John R. Stevens and Richard M. Lambert
<i>Utah State University</i> | Evaluating the comparative performance of popular gene set test methods |
| Brian Rice and Alex Lipka
<i>University of Illinois</i> | Pleiotropy in principal components |
| Marcus O. Olatoye and Alex Lipka
<i>University of Illinois</i> | Training population optimization for genomic selection in <i>Miscanthus</i> |
| Philip Dixon
<i>Iowa State University</i> | Using the binomial GLMM for partially paired categorical data |
| Larry Madden
<i>Ohio State University</i> | The all-zero treatment problem with conditional binomial data and GLMMs |
| Susan Durham¹, Leila Shultz¹, James Long¹, Wanda Lindquist¹, and Douglas Johnson²
<i>¹Utah State University and ²Utah National Guard</i> | Exploring longitudinal data with historical random forests |
| Katherine Goode
<i>Iowa State University</i> | A review and discussion of residuals for mixed models |

Philip Dixon
Iowa State University

Ordination plots for model-based analysis of species composition data: connecting two very different sets of methods

The Thursday group discussion considered potential replacement of the now defunct Kansas State University Conference on Applied Statistics in Agriculture and its associated workshop. There was discussion about whether a replacement was needed, feasible, logistics, programming, workshop offering, location, timing, etc. This discussion continued at the Friday morning business meeting. Edzard van Santen will investigate the possibility of a organizing a conference at the University of Florida in Gainesville in May 2020 and report back to the group. Guilherme Rosa, Bruce Craig, and Xin Dai volunteered to be on the program planning committee.

The discussions on Friday morning considered whether the group would write a book on Bayesian data analysis similar to the book by group members on generalized linear mixed models in the agricultural sciences that was published in 2012 by the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. It was decided that the need to disseminate this methodology to agricultural scientists would be better addressed by one or two papers rather than by a book. The timing of the papers depends upon when participants have access to new SAS software for Bayesian analysis of generalized linear mixed models. The possibility of working with the SAS Institute for software access and educational webinars was considered.

Business meeting: The business meeting began at about 10:00 am. Ed Gbur presided. Carla Goad and Linda Young participated remotely via Zoom software. The following items were discussed:

- (1) The organizers were thanked for a productive and enjoyable meeting.
- (2) Presenters who wish to post their talk on the project website should send a pdf of the talk to Ed.
- (3) The annual report and impact statements are due this Fall. Participants need to send Ed Gbur (egbur@uark.edu) accountings of all activities (workshops, papers, presentations, grants, awards, teaching related items, etc.) from October 1, 2018 to September 30, 2019 (or since last year's report) that are related to or inspired by their participation in NCCC-170 as soon as possible. (See the email from Ed soliciting contributions, sent June 26, 2019, and posted on the NCCC-170 website.)
- (4) The group considered the updated USDA guidelines for "impactful" final reports and discussed how improvements might be achieved, including documented collaborations among group members.
- (5) The 2020 meeting will be held at the Oklahoma State University with Carla Goad as the local host. Tentative dates are June 25-26, 2020. Nora Bello will serve as program chair. The 2021 meeting is tentatively planned for Colorado State University with Julia Sharp as the local host. Utah State University was suggested as an alternative site for 2021 if necessary.
- (6) Discussion of the replacement for the Kansas State University Conference continued. Linda Young volunteered to set up a conference call to continue discussions on Edzard van Santen's offer to host such a meeting in 2020 and potential invited speakers for a pre-meeting workshop and meeting presentation.
- (7) 2018-2019 is the third year of the current project that is scheduled to end in 2021. Progress toward those objectives as they relate to the expected outcomes and impacts, especially providing continuing education and statistical support to the scientific community in the review and editorial process have become more important than ever.

- (8) Ed noted that the same state and institution can be represented by multiple people, but only one of whom may be designated as a voting member. This question arose because several individuals who participate in the annual meetings are not official participants according to NIMSS.

The business meeting adjourned at approximately 10:30 a.m.

Some group members visited the Morrow Plots on the University of Illinois campus after the meeting adjourned. This field, established in 1876, is the oldest experimental agricultural field in the United States.