

2019 NCERA-180 Business Meeting Minutes

August 14, 2019

Meeting held in Madison, Wisconsin

Meeting called to order at 8:38am on 14-August-2019.

Attendees: Ganesh Bora (MSU), John Evans (Purdue), Aaron Franzen (SDSU), Christina Hamilton (NCRA Assistant Director & NIMSS System Admin.), Van Kelley (SDSU), Raj Khosla (CSU), Daniel Lee (UF), Brian Luck (UW-Madison), Zhou Zhang (UW-Madison), Jianfeng Zhou (Missouri).

Meeting minutes from 2018 were discussed. Daniel Lee moved to approve the minutes, the motion was seconded. The minutes were approved with minor modification (Change Peter Kovacs institution to SDSU). Change is reflected in the 2018 NCERA Meeting Minutes below.

NIFA Update:

Dr. Thomson's update on NIFA and the relocation process was presented and discussed, with many questions raised. Dr. Luck will share the text of the update with the attendees. Any clarification of the update should be directed to Dr. B. Luck or Dr. Thomson via email (Thomson, Steven J. - NIFA steven.j.thomson@usda.gov, Luck, Brian bluck@wisc.edu). Text version of the update is included below.

Note from Dr. Thomson:

NIFA is going through transition for relocation to Kansas City. Only 73 employees (about 1/3) indicated that they would relocate, but this number may fluctuate a bit until Sept 30. I (Thomson) will relocate to KC but plan to travel to DC frequently for interagency activities that includes NSF collaborative programs, OSEC activities, and meetings with stakeholders. This is easier also, as I am keeping property near the DC area. None of the Awards Management Division (read ZERO) are going to KC and they are the ones who do final processing, budget scrutiny, and awarding of grants. **Clarification of last sentence: All Awards Management Division positions will be vacated and re-hired in Kansas City once the move is finalized.**

Although not official yet, I plan to take over the SBIR 8.13 (Rachel Melnick's program) in addition to A1521 and A1531, which will proceed as usual albeit delayed.

Status of many NIFA programs are "up in the air" as many key NPLs (e.g. Karelyn Cruz, Herb Bolton, Nancy Cavallaro, Rachel Melnick, Charlie Cleland, Anne-Marie Thro, Aida Balsano to name a few) are not able to relocate or are retiring. I do not know what Hongda Chen (A1511) will do in the end. FACT is in the same boat unless Charlotte Baer is able to stay with NIFA. Many other NPLs working with FACT and the new IDEAS program are not relocating, so there are many uncertainties now.

A core group of Directors and NPLs have been meeting informally to decide how to proceed in the short term. We DO have hiring authority, so we are beginning to bolster staffing of support positions. Also, four very strong Program Specialists from the IBCE Institute are going to KC, and this will help greatly for paneling (which will almost certainly be virtual). Look for many NPL positions to come open soon.

I feel confident that we do have support for hiring from the Secretary's Office regardless of the static you may have heard. We get weekly updates, and my relocation package has been very accommodating so far. NIFA is here to stay, but some delays and bumps in the road in the short term.

If you have questions on status of a particular program, send to me or Brian; I will try to answer ASAP.

Update on 2019 and future Precision Agriculture related meetings:

NUE in Missouri August 2019 had around 100 attendees. Multiple companies sponsored workshops. There was a student contest for UAV machine learning and data analysis.

Prior to this meeting was also the Proximal Soil Sensing meeting in May also held in Missouri.

ASABE AIM was held in Boston in July.

It was suggested to coordinate with and communicate with S-1069 about meetings and share information between the groups. S-1069 will be in Washington with Lav Khot as host in June.

ECPA was in France in July. There were a total of 200 papers, about 120 oral presentations and 80 poster presentations. As in previous ECPA conferences about 20+ people attended from the USA. Next ECPA conference is scheduled to be in Budapest in 2021 with Dr. Gábor Milics and Mr. Bence Bolyki co-chairing the meeting.

The 8th ACPA is scheduled for October 14-17th at Punjab Agricultural University, Ludhiana, Punjab, India. <https://www.8acpa.org.in/index.php>

The InfoAg 2019 conference was organized in St. Louis, MO, from July 22-25th, 2019.

Latin America Precision Ag will be in Rosario, Argentina, 2020. Rodrigo Ortega is the first president of CLAP (Spanish translation of Latin American Precision Ag Conference). Rodolfo Bongiovanni is organizing the next CLAP meeting, but dates are not yet announced. In addition, the CONBAP (organized by Jose Molin, U of Sao Paulo) will continue to be organized as regional Brazilian precision ag conference.

The 15th International Conference on Precision Agriculture will be held at the Minneapolis Marriott City Center, Minneapolis, Minnesota USA; June 28 – July 1, 2020.

Discussion on future meeting 2021:

2021 John Evans volunteered to host at Purdue in 2021 with the help of Dharmendra Saraswat. The target registration cost is \$125. Check with commodity groups and industry to sponsor parts of the meeting (meals, refreshments, etc). If you engage students with the meeting and presentation, some universities will lower costs for reserving rooms. Optimizing cost for the meetings is helpful for many attendees that may or may not have experiment station support.

Timing discussion: Discussion from last year said May is worst time. For many years the meeting was the first week in January. Moved from January to March around 8-10 years ago, then it slowly migrated to May. We need to engage with Dr. Ward about hosting calendar time. This needs to be planned soon.

Reporting:

How do we make the process more efficient? Reports and multi-state meeting need to be reviewed by ASABE department heads. Reporting needs to be done by each state representative and compiled by the chair within 60-days of the meeting.

Other collaborations:

Check with Dr. Czarnecki (Mississippi State U.) on the desire to create a whitepaper on Big Data. FACT program organized by Alex Thomasson (TAMU) may provide a good starting point with a lot of information already provided.

There are no programs in USDA to support precision ag. National Program Leaders update RFAs every year. Collectively, Dr. Khosla suggests reaching out to program leaders to suggest that a new priority is needed. NCERA 180 discussed the real need for creating priority areas that cover precision ag, spectral signals for pests, other areas. If we were to focus on small areas. A short white paper from the group could create the language from which to draw a new or revised RFA.

It was suggested to form a subcommittee for the whitepaper Newell Kitchen, Van Kelley, Raj Khosla, Ganesh Bora.

It was proposed that Dr. Hendrik Hamann, IBM Watson Labs who works on precision agricultural issues at IBM should be invited to this group. Groups from Research Triangle (near Raleigh) should be invited to join our next meeting as well to facilitate ideas and collaborations.

Definition of Precision Agriculture

Last defined by NRC in 1988.

New effort though co-digital over six months (actively for over 50 days). New definition was accepted through ICPA, deemed too long for being treated seriously. A new, 15-20 word shortened version will be released with a one-page whitepaper for press release. Long form definition is below. **Dr. Khosla asked that this not be shared outside of the group until a formal press release is generated.**

“Precision Agriculture is a management strategy that gathers, processes and analyzes temporal, spatial and individual data and combines it with other information to support management decisions according to estimated variability for improved resource use efficiency, productivity, quality, profitability and sustainability of agricultural production.”

Book: Agricultural Internet of things and decision support for precision smart farming by Annamaria Castrignana, Gabriele Buttafuoco, Raj Khosla, Abdul Mouazem, Dimitrios Moshou, and Olivier Naud slated to be released January 1, 2020 by the Academic Press Publishers.

NCERA-180 is up for renewal in 2021 and needs paperwork to start in 2020.

It was moved by Ganesh and seconded by Raj to adjourn. There was no objection, so meeting was adjourned at 10:16a.

2018 NCERA 180 Business Meeting Minutes

The business meeting of the USDA NCERA 180 group was held May 23, 2018, on the campus of Kansas State University. The meeting was under the direction of Dr. Ajay Sharda, chair of the group.

Attendees at the meeting were Ignacio Ciampitti (KSU), Peter Kovacs (SDSU), Lei Tian (Univ. of IL), Yuxin Miao (Univ. MN), John Nowatzki (NDSU), Terry Griffin (KSU), Aaron Franzen (SDSU), Elizabeth Hawkins (OSU), Joby Czarnecki (MSU), Ajay Sharda (KSU), Pedro Andrade (Univ. AZ), Timothy McDonald (Auburn), and Bruce Mesa (AgVoice).

The meeting was called to order (Ajay). Following brief discussion of the previous years' minutes it was moved (Elizabeth) and seconded (Ignacio) that the minutes be accepted. No objections were made, thus the minutes were accepted.

Meeting Reports:

ICPA (Terry) – Jun 24-27, 2018. There is still an opportunity to present a poster in Montreal. Please be prepared to submit your 2-page paper as well. Any orals that have been accepted will NOT be scheduled if you have not submitted your paper. There are still available slots in tours and workshops. They are additionally accepting nominations for awards and seeking to replace some vacant leadership roles.

InfoAg (Ajay) – Jul 17-19, 2018. Lots of exhibitors on the docket for this year. This is a great meeting and all are encouraged to go.

ASABE (Ajay) – Jul 29 – Aug 1, 2018. This year the meeting is in Detroit.

Austral Asian PAC (Ajay) Coming to India in 2019, October. Exact dates TBA. This is managed by Punjabi Agricultural University, but Ajay is assisting with organizing.

Constructive discussion period:

Following up on discussion from last year, the group again discussed how we as a community could work together on data issues in agriculture. Although last year, it was mentioned we might have a special volume in a journal such as Precision Agriculture, the effort will likely not come to fruition. However, some needs were identified and many critical points were mentioned. *These points may form the basis of presentations which should be offered at the 2019 meeting.*

To summarize the major points of that discussion –

We lack published protocols for dealing with large data volumes in our research. There is no accepted standard which can be following and referenced to simplify the research and publication process. Other fields that deal with large data volumes have data reduction methods which could be reviewed for their application to agricultural data.

We must make a distinction between “big data” and merely have a large volume of data. Journals are making this distinction, and authors simply calling something “big data” does not make it so. No official definition of big data exists, and this is open to interpretation. Agriculture is different than other markets in terms of what “big data” might encompass. Accordingly, perhaps we should avoid use of this term and let readers/reviewers decide if they view our data as big data without our overt claim as such.

Many scientists are potentially more open now to sharing data and code. This may help or hurt agriculture as a flush of poorly QA/QC'd data entering big data systems and research databases may have implications beyond research (e.g., food supply, ag markets). We should establish metrics for what makes data "good" before allowing it to be shared. We should endeavor to use tools such as github to make code and sample data available to other researchers. You can't talk about data sharing without discussing privacy. It is still not clear what is and is not covered under FOIA. Considerations of privacy may be beyond the burden of the researcher. One approach could be using a snippet of code to assign an arbitrary coordinate system to geospatial data such that data are still geometrically accurate, but not geographically locatable.

Updates from NIFA:

We were joined remotely by Dr. Steven Thomson from USDA NIFA. He shared updates on the status of many relevant NIFA RFAs.

The Sustainable Agriculture Program call is out now. These are large awards. Dr. Thomson, along with two other scientists are NPL on this program.

The Foundational RFA is still not out. Many due dates are still going to be around the end of July. Remember to take advantage of those strengthening opportunities if you qualify. Be advised equipment awards are only available under strengthening.

We were also encouraged to consider the National Needs Fellowship program, which he highly recommends as a former recipient of these funds.

Although SBIR is not under his purview, he stays active in the program by frequent interaction with the NPL.

He is additionally pursuing extracting the smart and connected communities objective from Cyber-Physical Systems and making it a stand-alone effort.

He also shared a website with the group via email. The index database, www.indexdatabase.de, this website has a database of remote sensing indexes complete with equations and citations.

Administrative business:

The incoming chair for 2019 is Dr. Brian Luck from Univ. WI. Accordingly, we expect next year's meeting to be in Madison.

We were unable to appoint a vice chair. Because of the late planting, many core members were not in attendance. Additionally, many new faculty have come on-board at other universities. Although many names were tossed around, it seemed inappropriate to appoint a vice chair without some discussion with other parties. Therefore, attendees were tasked with making contact with potentials and reporting back before Jun 30 to Ajay and Brian.

The group additionally discussed moving our meeting period to better accommodate more members. It was agreed that this is also a function of the host university's availability. Comments on this are also to be sent to Ajay and Brian before Jun 30.

Following administrative business, motion was made to adjourn (Pedro) and seconded (Ajay).

Action items:

Identify new members!

Communicate with potential vice chairs/host universities and send names to Ajay (asharda@ksu.edu) and Brian (bluck@wisc.edu) before Jun 30

Send comments on meeting time to Ajay (asharda@ksu.edu) and Brian (bluck@wisc.edu) before Jun 30