

ESCOP NRSP-RC 2024 Virtual Meeting
July 24, 2024
3:00 ET, 2:00 CT, 1:00 MT, 12:00 PT

Attendees: Steve Lommel, Gary Thompson, Mark McGuire, Blair Siegfried, John Blanton, Erdogan Memili, Robert Mattive, Tom Bewick, Mike Schmitt, Rick Rhodes, Cindy Morley.
Guests: David Gay, Alex Thomasson, Chris Hamilton.

Committee Members: <http://escop.info/committee/nrsp-rc/>

Chair: Steve Lommel (SAAESD)

Executive Vice Chair: Gary Thompson (SAAESD ED)

Members:

Mark McGuire (WAAESD)

Blair Siegfried (NERA)

John Blanton (NCRA)

Erdogan Memili (ARD)

Robert Mattive (CARET)

Tom Bewick (NIFA)

Mike Schmitt (ECOP)

Rick Rhodes (NE ED, incoming executive vice chair)

Ex-officio:

Cindy Morley (SAAESD, Recording Secretary)

Agenda:

Welcome and Introductions	Steve Lommel
Purpose of NRSP and current funding commitments	Steve Lommel
Virtual presentation of proposal to renew NRSP3	David Gay
Discussion and recommendations for NRSP3	All
Virtual presentation of the NRSP_Temp13 request to write	Alex Thommason
Discussion of NRSP_Temp13 request to write	All
Discussion of the NRSP proposal timeline	Gary Thompson
Adjourn	

Notes:

Purpose of NRSP and current funding commitments

- NRSP's are funded by Off the top funding from Hatch funding from all the stations. We are authorized to spend 1% (approximately \$3M) but we don't spend as much as that. NRSPs are capacity projects that are of national importance represent needs of large swaths of the country. A lot of projects supported tend to be about resource development and databases. Data that can be used by scientists across the system.
- Budget- note that the yellow highlight is put in there should we renew NRSP3.
- By not using the full authorization, that money stays with the experiment stations.

Virtual presentation of proposal to renew NRSP3

- Overview of what they do and how they do it.
- 50K per year for the next 5 years. Receives \$2.9M in direct support
- Project measures wet deposition of pollutants in precipitation. 350 monitoring locations plus additional ones in Hawaii, Virgin Islands, Puerto Rico, Asia and Bermuda.
- Began as NC141 in 1977.
- Every piece of data and all maps are available for free.
- Looking to start a new PFAS contamination network.
- EPA uses the data for policy regulations. They are the second largest funder.
- Rick- is the annual report going to be filed?
- David- the annual report usually gets entered after the fall meeting.
- David- will add those after both meetings going forward.
- Blair- PFAS is one of the new contaminants to look for, is there a mechanism for looking at other emerging contaminants (such as Glyphosate).
- David- it has been talked about multiple times. It is a committee system with multiple funders. If it is water soluble, they can make that measurement. To date, there hasn't been a request to look. They save samples for 5 years, so it is available.

Discussion and recommendations for NRSP3

- Mark- easy decision. For \$50K, we are getting access to a huge amount of data.
- Gary- the reviews were very good. The questions that the reviewers posed were easy answers.
- Tom- one thing that he didn't focus on in the presentation was there are 25 FTE's, so we are getting a strong bang for the buck.
- Erdogan- agrees there is lot of benefits and strongly supports this.
- Blair- While supportive of the project, what he didn't see was any kind of Impacts. What is happening because of this increasing ammonium in our rainwater (for example). Is there any recommendation on changes we need to make etc.
 - Steve- they made it clear that they produce data and don't get into policy. Might be good to do a survey of Impacts though to see how the data has been used. Unsure if the data has changed policy at the state level.
- Erdogan- policy makers should be briefed or provided with information about this to use as reference in their policy development.
 - Steve- would be nice if we had some presentation to put on the website (but not a requirement).
- **Vote - Recommend approving (Unanimous)**

Virtual presentation of the NRSP_Temp13 request to write

- Artificial Intelligence for Autonomous systems.
- Leadership is from FL, MS, Washington State, and UC Davis
- Need- Labor Issues, Safety and Efficiency, Higher Precision in optimization
- Related Multistate- W4009, S1090 and S1098
- Importance to have a nationwide effort that address the gaps in Data, gaps in AI development and there is minimal collaboration
- Objectives-Develop Large open-source datasets, build formal collaboration with computer scientists and Expand level of nationwide information sharing regarding AI enable agricultural autonomy.

- There is a need for the creation of data collection standards and much greater collaboration across the country.
- Impacts to accelerate the progress of research in ag autonomy. Want to attack some of the more labor-intensive problems.
- Gary- The original request to write generated some concerns, then Alex and the group submitted a new request to write based on that.
- Steve- Struggling with creating the database side of things. The proposal seemed to focus on specialty crops. Will you pick a certain set of initial crops to collect data sets on? Have you decided on which ones yet?
 - Alex- we don't want to limit this to specialty crops. There are issues related to specialty crops that are labor intensive. In row crops most of the autonomy has been in autonomous tractor driving. One thing is that it is difficult for industry to bring to market. Those solutions are coming but we need to develop means to speed up autonomy. Have not identified specifics but have talked about strawberries, blueberries, tomatoes and sweet potatoes so far. Looking at how to "move" trays of fruits etc.
- Steve- if this were funded, are you going to start on day one or will you collect data already out there?
 - Alex- there are some open-source databases out there. That is an aspect of what they want to do (access and consolidate data already out there). Don't feel like there is adequate data in specialty crops. Will need to work with collaborators there. Standardization of data collection will need to happen. Ground truthing of the data will need to happen. All this will be in the full proposal.
- Tom- In objective 1, is there a relationship in place with the standards organization? Would be more compelling in the final document if you had one or all three of them that they will work with you on developing these standards. Concerned that the development of technology won't be available to smaller producers. In his experience the community of bio and ag engineers is small and there are a lot of people outside of the Ag community who are interested in this. There is interest from entrepreneurial startups. Many are struggling to identify stakeholders or focused research questions. Do you have plans to reach out to them? Would encourage to make that part of project development and would make it more broadly applicable.
 - Alex-With respect to standards bodies, he has worked with ASAB and ISO Smart Farming efforts. Good opportunity to plug into that.
 - Alex-Different scales of farms- at MS state they were recently awarded a USDA NIFA grant looking at effects on different scales of farms. Working to develop that knowledge and they are taking it into account.
 - Alex- they want the data available to everyone including smaller start-ups, but it is a good point to add that as a point of emphasis
- Blair- interested in broadening beyond specialty crops. Labor in specialty crops is a big issue for them. Looking at how this applies to environmental issues and sharing data across regions. Is there consideration to include in a broader proposal?
 - Alex- we could. It hasn't been the focus so far. He is aware of projects looking at autonomous soil samples for example. Was thinking more around ag production initially.
- Rick- How does NRSP anticipate engaging with the two multistate projects in AI.
 - Alex- hasn't given it a lot of thought about HOW they would do it yet, but he is involved in all three of the other projects.

- Rick- would be worthwhile discussing that in the larger proposal.
- Erdogan- are you planning on presenting this at the AI in Ag Conference?
 - Alex- Yes, he intends to do that. The conference will be held at MS State next year and his group will be developing it. Will make this project central to that.
- Steve- encourages you to show broad participation across the US.
- Gary- Primary stakeholders seem to be researchers. Are there others that you would confer with while putting together the proposal.
 - Alex- start-ups and corporate development of autonomous vehicles are all stakeholders. When writing this he was initially thinking of researchers, but that can also be members of corporations. Growers are also stakeholders. This will need to be fleshed out in the full proposal.
- Tom- They held a conference in 2007 on engineering solutions for specialty crop challenges and there was a grower from California and his question was what to do with all his workers. A lot of operations have a family of people who work for them. The social aspect is important. Once you have all these databases, what is the next step to make sure that those workers can be involved in this new technology.
 - Alex- that is exactly what he has in mind. Workforce development... upscale labor instead of labor reduction.

Discussion of NRSP_Temp13 request to write

- Steve- any concerns on a full proposal? Any recommendations?
- Tom- expressed reservations when we first saw it, but they did exactly what we needed them to do. They addressed his concerns, and they are on the right track. It is very timely. Would not be sure how this would be used in Animal systems. If you try to cover everything then you get to disperse. Maybe the initial focus on crop production then expands later in environmental and animal productions.
- Erdogan- topic is timely and multistate projects can train mentor and students. Not everyone has access to universities. Education component would be interesting
- Rick- originally hesitant but they have gone through and rewritten it. Will need to take a hard look at timeline and what they expect to do. Utilize the resources of extant projects dedicated to AI.
- Blair- Agree that it is a timely project as it relates to ag. Looking forward to seeing full proposal but questions relevance to his state where ag doesn't lend itself to automation. The technologies that are being developed for apples for example, unless things change dramatically, they are 5-10 years from using automation. Affordability is also an issue. The timeline should be realistic for adoption. Dairy and biodiversity have more immediate applications for them.
- Bob- agrees with a lot of the comments. From a producer standpoint, just because something can be done it isn't always practical or needed. Timeline is important. The private sector is doing a lot with this. Connectivity and bandwidth in rural areas is questionable. There is an application for this.
- Steve- if you have thoughts for recommendations to the proposal, send them to Gary and him so he can relay them.
- Mark- also had reservations about the proposal when it first came out. Worries about the IP about this. If everything is open source, then the technology might die (everyone wants to own the technology). Should be some piece about protection of IP.
- Bob- Early engagement with stakeholders is critical.

- Steve- a producer committee to make sure they work on a solution that is relevant to producers.
- Michael- concerned in the beginning but saw improvement. IP is still a concern. Competition with industry will throw a curve ball. Relevance and scope of inference is an issue. There are applications that are in front of us for some of the more major crops as well. Would by broader support from stakeholders.
- Steve- autonomous farming equipment and downscaling the size of the equipment is discussed. The big equipment dictates how the land is used. Smaller autonomous vehicles could be used to make productive land better. Greater sustainability and lower inputs.
- **Vote to approve the writing committee to develop the full proposal- Unanimous**

Discussion of the NRSP proposal timeline- Gary

- When Gary pulled together a simple timeline from the documents, it showed that it is a protracted process. Are there places we could save time and shorten the process?
- We meet in June/July/August then we make a proposal to the full body in late September. If it gets voted to move forward, the project begins October 1.
- When looking at the timeline, it was difficult to cut out time except at the end time.
- We seldom get comments back from the regional meetings in the Spring, but they ARE looking at them after Peer Review.
- Should we bring this up at the annual meeting this fall as a topic of discussion.
 - Once our committee makes decisions, we could conduct a virtual vote of agInnovation membership. This will enable us to make this decision in July or August. NIFA and institutions would be notified that the project would begin on Oct. 1st etc.
 - An alternative is to empower the NRSPRC to make decisions. Then the decisions are informed at the fall meeting.
- Tom- Knows that their awards management staff would greatly appreciate more than one week. Worth looking at. Directors guard their Hatch funding so they may not let this group have the final say. Likes the virtual vote option. Taking time isn't a bad thing to build a strong support base.
- Chris- Folks at AES would appreciate a sooner approval.
- Steve- there appears to be interest to bring it up with the full body at agInnovation meeting.