INRC Advisory Council Meeting, March 11, 2021

Attendees:
• Dan Robison, Endowed Dean's Chair, College of Agriculture and Life Sciences
• Kapil Arora, ISU Extension & Outreach Field Agricultural Engineer
• Maureen Clayton, University of Northern Iowa, Associate Dean of Communities arts, and sciences
• Steven Hall, EEOB, ISU Faculty Member
• Chris Jones, Research Engineer, IIHR-Hydroscience and Engineering, University of Iowa
• Susan Kozak, IDALS, Director Division of Soil Conservation and Water Quality
• Adam Schnieders, Iowa Department of Natural Resources, water quality resource coordinator
• Keith Summerville, Deputy Provost, Drake University Deputy Provost, Associate Dean College of Arts and Sciences, Professor ofEnvironmental Science
• INRC Staff/Iowa State University: Matt Helmers, INRC Director, Professor Agricultural & Biosystems Engineering, Dean Professorship, Associate Chair for Research & Extension, Iowa State University; Kay Stefanik, INRC Assistant Director; Malcolm Robertson, INRC Program Coordinator; Wendy Borja-Diaz, INRC-CALS Accountant; Ann Y. Robinson, INRC-CALS Communications Specialist; Elizabeth Uthoff, INRC Communications Intern

CALS Dean Dan Robison welcomed the council and invited attendees to introduce themselves.

The October 2020 meeting summary was approved, as posted online.

Review of 2020/21 (October-March) Center Activities – Matt Helmers

- Expanded outreach: The center has developed an expanded contact and news release list that now includes individuals from colleges and community colleges from across Iowa. The spring series features speakers involved in watershed research going on around the country. Presentations are being archived on our website. Kay is developing a wetland demo trailer with Iowa Learning Farms that includes three, 3D models of wetlands (oxbows, prairie pothole wetland, CREP wetland). Plan to provide free throughout the state to community events, field days, fairs, etc. Will probably help staff this summer.
- Presentations: Continuing to help host IA Learning Farms webinars. Several have included INRC research. INRC also helped coordinate the 2020 Drainage Research Forum in the winter that attracted people from around the world. Kay presented at Iowa Agribusiness Association Forum recently, and she will host a panel on INRC research at upcoming Iowa Water Conference.
- Other communications activities: Include a short video to review recent activities and accomplishments created primarily by Ann and Intern Elizabeth Uthoff. (Previewed a semi-final version of the video.)
- Refining modeling: Kay has been comparing nutrient tracking tool (NTT) with observed data at field sites in IA (trying to understand differences between the modeled N levels and monitoring data); Kay also calculating commercial fertilizer and manure N and application rates to examine trends over time.
- Building database on urban nutrient management: Malcolm has been analyzing various online data sets looking into urban stormwater best management practices databases and programs.

Budget Update – Matt Helmers

In pretty good shape. Allocations over $12,185,929, includes second year of those projects funded for FY 2021. Tentatively expect about $1.4 million (some of it for second-year funding), but hard to predict.

2021 RFP Review – Matt Helmers

Plan to send out this year's RFP next week – welcome comments through end of today. Proposals will be due at the end of April and decisions announced in June for Aug. 15 start date. Similar RFP as last year -- reflects input from 2020 researcher/stakeholder meeting. The few changes include being more explicit about soliciting research on manure management, and possible synergistic benefits or unintended consequences, for example

carbon benefits of practices. Good ideas outside of list will be considered. Please share with colleagues and contacts.

Research Presentation: Are cropped depressions hotspots of nutrient losses? by Steven Hall, Associate Professor, ISU Department of Ecology, Evolution & Organismal Biology

Hall presented research from INRC-funded project looking at how soil nitrate and phosphate loss varies across gradient from cropped depressions and adjacent uplands. Have found a lot of variability, but overall observe greater nitrate leaching in depressions. Saw the same trends over different years. Major factors include increased nutrient delivery from upslope, decreased uptake from dying plant biomass, and greater nutrient release from high soil organic matter. Cover crop use reduced nitrate leaching but didn't alter the depression/ upland difference. Trends even stronger for phosphorus leaching. Also studying greenhouse gas dynamics.

Options to address problems include:

- Optimize environmental and agronomic outcomes by decreasing fertilizer inputs to cropped depressions.
- Set aside in programs like CRP.
- Enhance drainage to keep crops alive could improve nutrient use efficiency.

Center Director Update – Matt Helmers

Highlight some things we're planning in the future:

- Working on strategic planning. Staff has started and plan to engage Advisory Council.
- Continue monthly seminar series in Fall 2021 – welcome ideas for theme/topics.
- Continue communications work, including new INRC Annual Review and short videos on research.
- Plan a field tour when safe to do so.
- Continue to assess ways to leverage state dollars we receive.
- Working on application for National Science Foundation REU Program.
- Working to get publications in ISU digital repository to improve access to documents.

Future Meetings – Matt Helmers

Keep meetings to every six months. Plan for October 2021 timeframe. Possibly in person.

Discussion/comments

Helmers asked about WQIS: How many sensors getting out there? Jones: There will be about 70 sites. About 40 funded through INRC and others funded by ARS, Coe College, USGS sites, Polk County water trails. Corps likely to buy a few sensors and deploy in Lake Red Rock. Includes sites on Maquoketa, Mississippi and Big Sioux rivers. Last year hampered by COVID, but finally getting sites deployed. U of I part of big data project with NSF, will result in WQIS for entire upper Miss River system.

Schnieders: Learning more about new USGS initiative for the Illinois River. Any opportunities for INRC to partner? Helmers: Will keep my eye out for it – talked about in Upper Mississippi-Hypoxia Task Force.

Group discussed questions about carbon credits and blending carbon into projects for possible multiple benefits. Agreed interest outpacing knowledge. Hot topic we need to get on top of. Helmers: There are people at ISU researching this. May need to develop study group for carbon similar to the team that developed the INRS.

Public Discussion

No members of the public were in attendance.

The meeting adjourned at approximately 11:30.