Northwest Region Agricultural Project (NW REAP): Building on the REACCH foundation to sustain a long-term effort to ensure Idaho’s cereal systems are sustainable and resilient to changing climates

**Foundation REACCH**

- Goals of REACCH
  - Identify and implement management approaches and technology that...
  - Impart resilience to climate change
  - Reduce greenhouse gas emissions
  - Extend project information to producers and others
  - Educate next generations: K-20
  - 9 disciplinary and integrating objectives

- Approach
  - Coordinated effort involving biologists, agronomists, climate models, economists, entomologists, sociologists, educators, extension educators
  - Regional, with 3 universities and ARS
  - >200 participants (Pls, students, others)
  - Stakeholder input from inception

- Impacts
  - Farmers and stakeholders more prepared to manage wheat under a variable climate
  - New professionals prepared to serve agriculture in the public and private sector
  - Capacity for continued efforts to improve sustainability of Idaho wheat production
  - Curriculum for high school teachers on project themes

- Foundations for NW REAP
  - Established methods for promoting transdisciplinary integration across a large regional project
  - Protocols for integrated graduate and undergraduate education
  - University-wide collaborations
  - A data management system and platform to accommodate all anticipated NW REAP data types
  - Web site, grower education platforms, online handbook for cereal producers
  - Regional networks and partnerships

**Vision NW REAP**

- Problem
  - Need to reinforce adaptive capacity of Idaho’s and PNW cereal production systems.
  - Challenges include changing climates, water availability for rainfed and irrigated systems and associated changes in pests, weeds, diseases.
  - These challenges are complex requiring integrated, transdisciplinary research, extension and education to address them.
  - Cereal systems are an economic and cultural mainstay of Idaho and surrounding states.

- Opportunities
  - Build on REACCH
  - Extend the model across the state
  - Involve more UI faculty members
  - Involve R & E centers
  - Utilize NKN
  - Pursue new funding opportunities

- Goals of NW REAP
  - Identify and implement management approaches for all cereal producing regions in Idaho to:
    - Impart resilience to climate change
    - Develop adaptive capacity to address changes in water availability for irrigation
    - Reduce greenhouse gas emissions
    - Increase N and H₂O efficiency
    - Develop working relationships among researchers diverse disciplines to leverage funding and find system-based approaches to sustainable food production
    - Educate next generations (K-20) about agriculture, climate, water and society

**Execution NW REAP**

- Support from VIP
  - Faculty release time for grant and concept development
  - Funds for data management
  - Funds to support ongoing long-term experiments
  - Funds to establish new long-term experiments at designated R&E centers

- Participants
  - CALS faculty in cereal production-related research, extension and education
  - CNRS faculty in climate and atmospheric sciences
  - CNRS faculty in remote sensing, data management
  - NKN within Libraries and CRED
  - Partner universities, agencies

**Questions?**

- Continue the conversation in CALS where with:
  - John Johnson Maynard
  - Sanford Eikenbrode
  - Kate Wolf
  - J.D. Wulfforh

- Sustainability Plan
  - Seek major sources of funding related to FEW (Food, Energy, Water) nexus Initiatives
  - Seek funding related to climate change and agriculture themes
  - Coordinate efforts supported by existing industry and smaller federal grants.
  - Augment UI Cereals POD
  - Collaborate with partners for additional support (LTER, OSU, WSU, INEL, others)

- Some Outcomes
  - Sustained, coordinated statewide center for the continual improvement of cereal-grain cropping systems involving faculty members university-wide
  - Leadership in regional, national, and international efforts to sustain cereal production
  - Regional data management system for cereal-grain research, education and extension
  - Long term viability of a critical agricultural sector for Idaho and region
  - Long-term experiments throughout Idaho
  - Component of statewide outreach for R&E centers