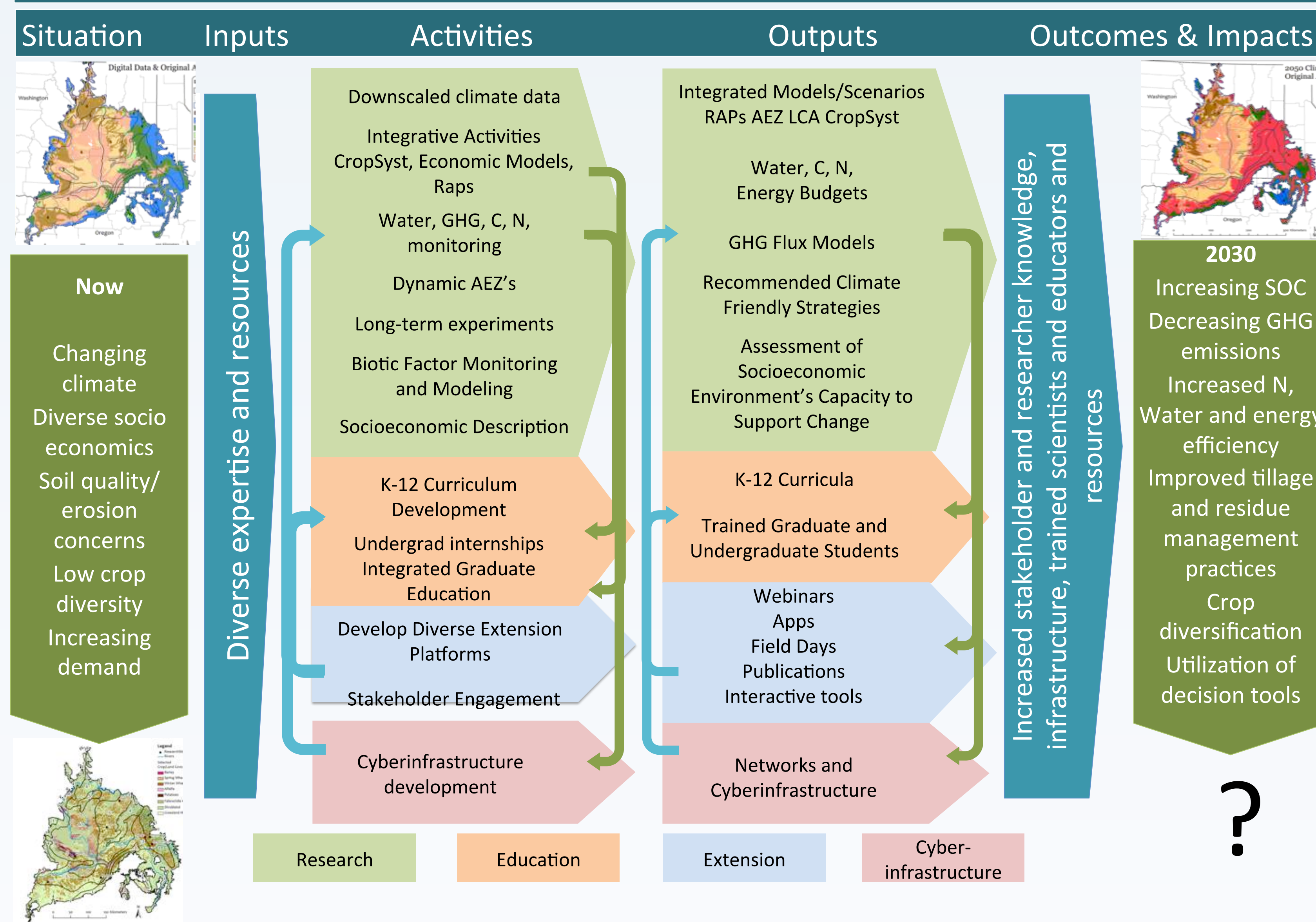


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The long-term environmental and economic sustainability of agriculture in the Inland Pacific Northwest (IPNW) depends upon improving agricultural management, technology, and policy to enable adaptation to climate change and to help realize agriculture's potential to contribute to climate change mitigation. To address this challenge, three land-grant institutions (Oregon State University (OSU), the University of Idaho (UI) and Washington State University (WSU)) and USDA Agricultural Research Service (ARS) are partners in a collaborative project - *Regional Approaches to Climate Change* (REACCH). REACCH objectives require disciplinary expertise and cross-disciplinary interactions. The REACCH framework and approach (below) was developed to accomplish this. In addition to improving climate change adaptation/mitigation within the IPNW, REACCH approaches to cross-disciplinary thinking, research and analysis may be studied and applied to other large, interdisciplinary projects in the future.

Summary of Approach

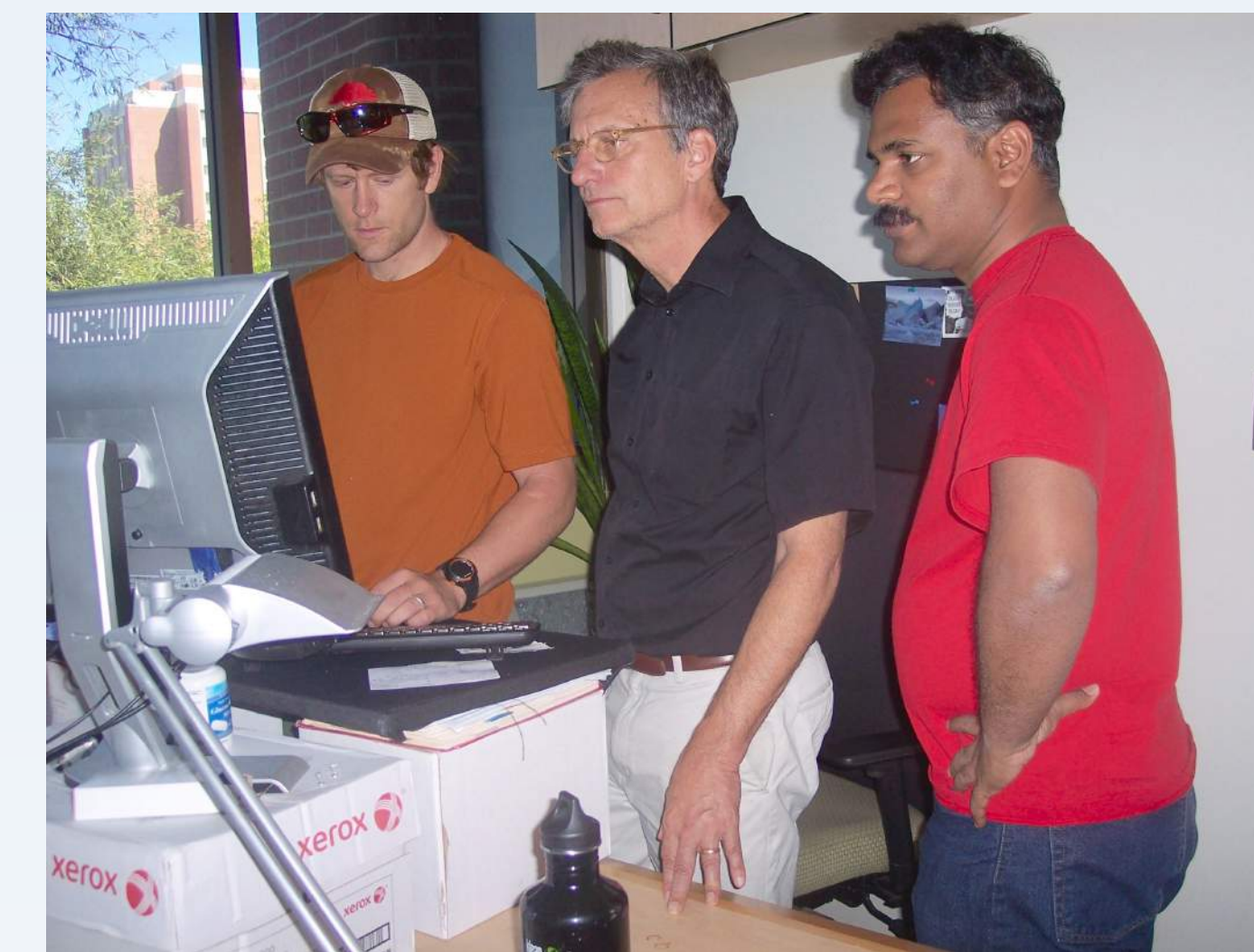
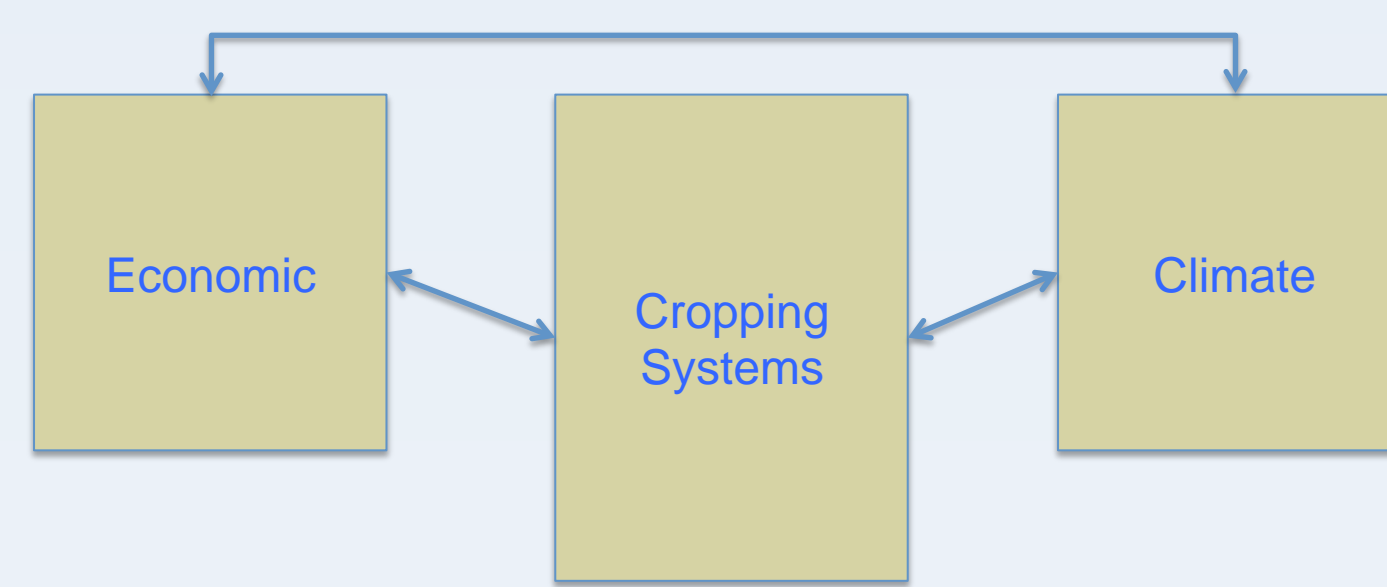


Fostering Cross-disciplinary Research

The REACCH framework depends on effective cross-disciplinary interactions through multiple means including:

- Use of tools for cross-disciplinary communication
- Cross-cutting teams and integrating themes
- Monthly integration meetings
- Half-day workshops
- Cross-disciplinary graduate student projects
- Graduate student training in cross-cutting themes
- Annual evaluation

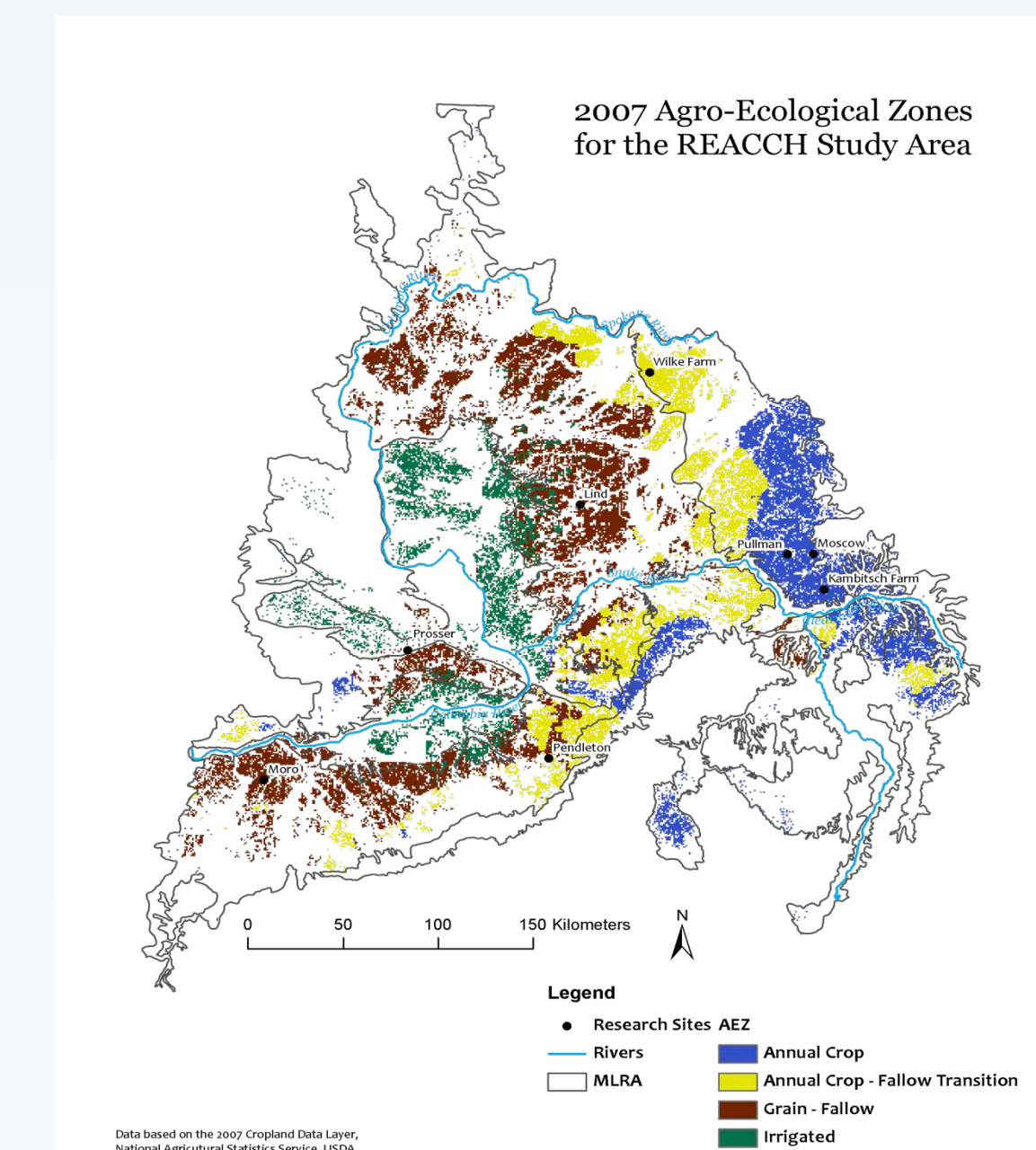
Coupled Modeling Framework



- Geospatially parameterized, integrated modeling platform
- Components include:
 - Climate: Downscaled ensemble of GCM outputs (MACA)
 - Cropping Systems: CropSyst model
 - Economic: Minimum-data tradeoff analysis model (TOA-MD 5.0)
- Ecologists work with modelers (left) to incorporate pest damage into CropSyst.

Cross-Cutting Objectives

Defining agroecological classes (AECs) and Life Cycle Analysis (LCA)



- Based on NASS data and statistical procedures, AECs provide a framework for monitoring, forecasting, modeling, experimentation, extension programming and data analysis.
- The AEC concept will assist researchers in the integration of data sets taken at different spatial scales.
- LCA is used to determine system-wide impacts of alternative management practices.

toolbox for Cross-disciplinary Communication

Effective cross-disciplinary communication is critical to achieving cross-disciplinary research and solving complex problems. REACCH faculty, students and staff participate in a Toolbox session to encourage these skills.

- Toolbox is a philosophical approach to improving communication about research within cross-disciplinary groups
- Toolbox sessions involve completing an instrument (~15 min) that focuses on several dimensions of research followed by facilitated discussion of prompts.
- Toolbox has created continuing dialog regarding philosophical viewpoints across the project.
- REACCH graduate students were strongly impacted by the toolbox experience.

Interdisciplinary Graduate Student training



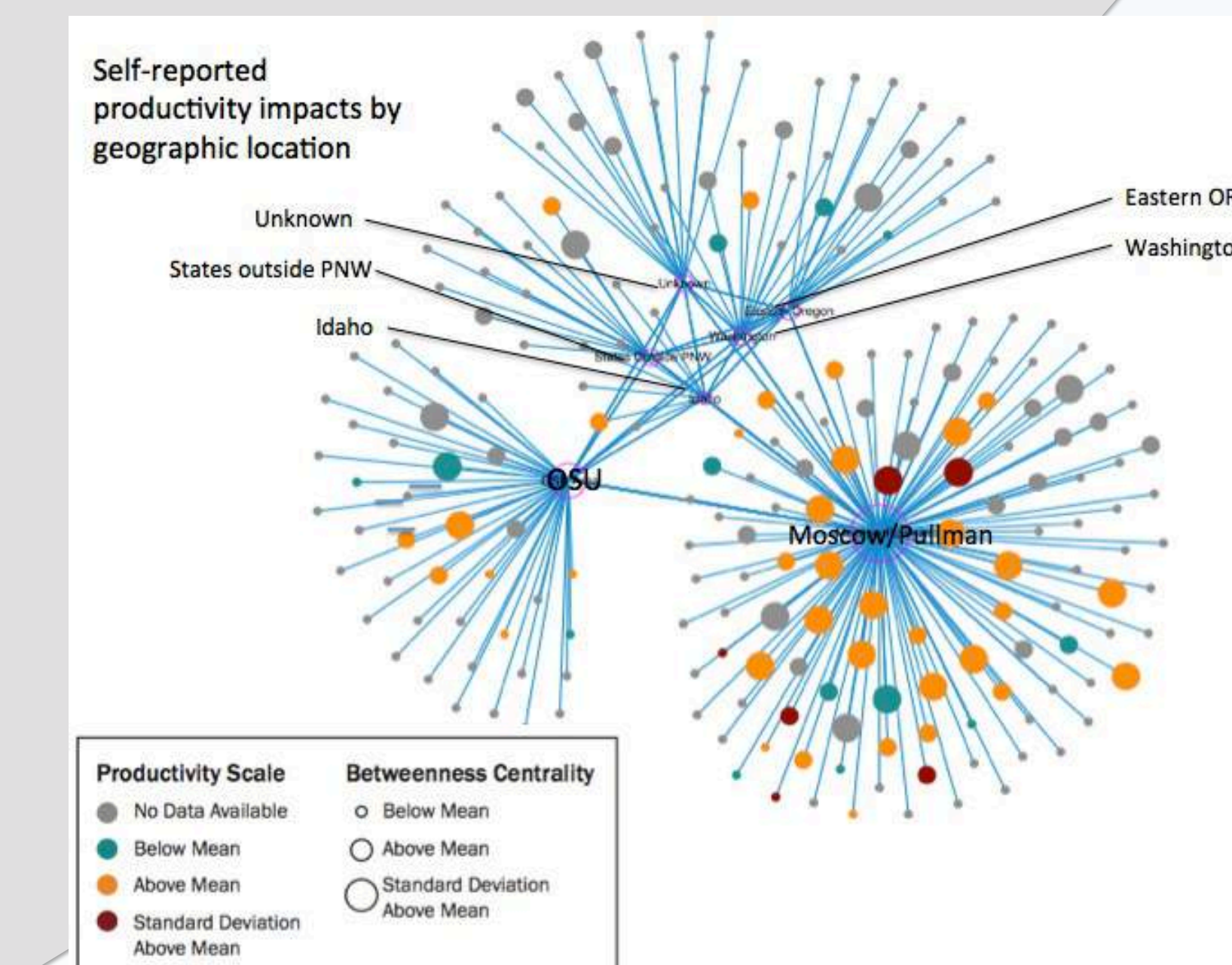
- REACCH graduate students work in interdisciplinary groups to develop extension or education related products.
- Annual graduate student retreats provide structured time for students to work on their team projects and informal time for students to interact.
- Students received basic training in each REACCH discipline through required course-work, online short courses and webinars designed by REACCH faculty and staff.

Integration Meetings and Workshops



Monthly integration meetings provide a forum where research from any REACCH objective can be discussed. Potential integrative products can be further explored during half-day workshops (1-2 per semester).

How are we doing?



- Results from annual surveys indicate that a high level of trust exists among project participants (Cronback's alpha score of 0.87).
- Results also suggest a high level of satisfaction with collaboration (0.85).
- Project impacts on the productivity of REACCH researchers is less clear (0.81).

- This was further demonstrated by Social Network Analysis (left), which indicates that members at UI and WSU (only 10 miles apart) perceive a greater benefit than those at OSU or other off-campus locations.