RESEARCH INFRASTRUCTURE IMPROVEMENT (RII 4)
PROPOSAL DEVELOPMENT PROCESS

EDUCATION & OUTREACH WHITE PAPER

FOR DISCUSSION
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TITLE: METHODS FOR LOCAL INVOLVEMENT AND DELIVERY OF CONTENT THROUGH LOCAL DEMONSTRATION PLOTS/FIELDS AND WIKIS

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Description of Activity (1-2 paragraphs)

The proposed activity calls for using demonstration plots/fields as a way to connect with local producers, students, and public in general and show them research activities related to the Energy-Water-Environment Nexus. Ongoing acequia-hydrology research can be used as leverage by expanding research activities to include the energy component. For instance, demonstration fields can be established in the NMSU-Sustainable Agriculture Science Center in Alcalde, NM and other facilities to show different crop varieties with potential for generating biofuels (i.e. sunflower seed for biodiesel) and that are irrigated using traditional irrigation systems (acequias). A different example is to establish a demonstration site for showing small and/or micro hydropower generation using acequia water flow. These demonstration plot activities can be complemented with on-site workshops and short-courses related to the topic.

Relevance to Energy-Water-Environment Nexus

In both of the demonstration plots mentioned above, clean (environment-friendly) energy is generated using water that is gravity-driven into the acequia systems, thus no additional energy from fossil fuels is required.

Target Audience(s): K-12, Undergrad/Grad, Outreach, Workforce Development

Outreach and Education

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Description of Activity

The proposed demonstration by Carlos Ochoa, using plots/fields as a way to connect with local producers, students, and public in general and show them research activities related to the Energy-Water-Environment Nexus can be further augmented and made interactive and immersive by integrating the field work and experiments with a Wiki.

Use of a Wiki alongside the field work provides the following benefits:

- Enables extremely flexible content rich collaboration that has shown significant positive motivational consequences for active participation in a peer setting.
- Using a blend of Lab book wiki and a Collaborative wiki allows students to keep notes online with the added benefit of allowing a team to collaborate and allow the output to be peer reviewed and changed by fellow students. The Wiki will also be the de facto knowledge repository for the participants dispersed geographically across the state.
- Wikis stimulate writing ('fun' and 'wiki' are often associated);
- Wikis provide a low-cost but effective communication and collaboration tool
- Promote active interactions between students by challenging them to think independently and creatively.
- Finally, using a Wiki gives a broader exposure to scientific thinking and writing to all the students that participated in such activities.

This Wiki can be set up and managed at minimal cost by EPSCoR.

Target Audience(s): K-12, Undergrad/Grad, Outreach, Workforce Development Outreach and Education