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**Education at the Speed of Research: An Overview of the NARA Approach to BioEnergy
Literacy**

Abstract

In an effort to create viable alternatives to petroleum-based fuel and co-products, research to develop sustainable, advanced biofuels is underway. As the science and economics behind biofuels progresses, so too must energy education. If biofuels are to be a truly viable alternative to fossil fuels, then there must be a ready workforce and a willing populace that is well-informed and able to critically think about the science and sustainability behind bioenergy, biofuels, and

bio-products. Yet, how do we teach about cutting-edge energy technologies like aviation biofuels when the science and the markets are still being developed?

In this session, the education team from the Northwest Advanced Renewables Alliance (NARA) will share their multifaceted approach for bridging the gap between energy research and energy education. NARA is an innovative aviation biofuels project that was awarded a grant from the USDA-NIFA (grant no. 2011-68005-30416) in 2011. Using forest slash from logging operations as feedstock, the project is examining the feasibility of creating a sustainable aviation biofuels and bio-based co-products industry in the Pacific Northwest (PNW). This project has significant potential to positively impact the sustainability of the PNW region through the production of a renewable form of jet fuel, the generation of jobs, and the revitalization of rural communities. The production of aviation biofuels could also signal to the nation that the science and markets are ready with viable alternatives to petroleum-based fuels. Knowing that education is key to the success and sustainability of this project, the NARA education team promotes the bioenergy literacy among K-grad students and K-12 teachers.

The NARA education team's approach to bridging the gap between research and education has been comprehensive, multifaceted, and collaborative; and, could serve as a model for future grants or other fields of research. Leveraging the educational system's existing infrastructure, the team has developed (bio)energy resources and programs for students at the K-12, undergraduate, and graduate levels, and for different environments such as formal education, outdoor education, undergraduate research experiences, and high-school problem solving competitions. By collaborating with NARA researchers and scientists, the education team has created up-to-date resources and relevant programs to engage students in exploring bioenergy and biofuels. NARA education team members will share the (bio)energy educational resources that have been developed including the Energy Literacy Principles Matrix, energy literacy assessments and rubrics, and discuss the opportunities and challenges involved with connecting research and education.

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