**Teacher Professional Development: An Energy Literacy Supply Chain**

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**Webinar Series**

- 26 high school teachers from Idaho, Washington, Oregon, and Montana interested in coaching teams for the Imagine Tomorrow (IT) problem-solving competition.
- 6 1-hour monthly webinars (December '14 – May '15) for teachers to expand their knowledge of current renewable energy research, along with guidance on coaching a team in the IT Competition.
  1. Northwest Advanced Renewables Alliance overview, mission, goals
  2. Coaching a team for the Imagine Tomorrow Competition
  3. Guest Speaker Dr. Scott Hulb presentation on Soil Productivity and Impacts of Biomass Removal
  4. Guest Speaker Dr. John Petrie presentation on River Morphology and Impacts of Forest Mgmt.
  5. Guest Speaker Dr. Indraneel Ganguly presentation on Life Cycle Analysis and Biofuel Sustainability
  6. Preparing a team for effective competition communication: A Presentation on Presenting

**Summer Workshop**

- 15 affiliate participants experienced field-based curriculum and created content for an online blog followed by the affiliate participants.
- 45 affiliate participants follow along and participate in active discussions with onsite participants.
- 380 comments posted on blog (see column on right side of page for highlights)
- 2600 number of students served by these teachers per year
- 33% Increase in Energy Literacy
  Mean pre-test score on test of bioenergy content understanding = 10.6/20 (54.3% correct), Mean post-test score = 16.4/20 (82% correct)
- NARA research articles, newsletters, conference presentations provide content resources

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**Imagine Tomorrow** - A problem solving competition for 9th-12th graders in the Pacific Northwest that focuses on sustainable energy and creating solutions to problems connected with transitioning to sustainable energy sources. There are four categories (Design Challenge, Behavior Challenge, Technology Challenge, and Biofuels Challenge) in which the students can compete in.

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**Online Engagement**

Sample comments from the blog

- Not being at the presentations, I still get the big picture thanks to the clear presentation resources. These days researchers are doing a much better job analyzing the whole picture of a new resource. A while back when fuels based from corn were all the rage, we forgot to look at the whole picture in cost production, environmental impact, efficiency, comparisons to fossil fuel, distribution costs, etc., and then we learn that it’s not as great as it seemed. These presentations clearly show we have learned since then and making progress.

- Thanks for these resources. In my Earth Science class there is a great deal of content I try to squeeze in within a school year. Through these presentations, and the other information shared, I am able to take what I know and formulate ideas and issues that I can incorporate in the curriculum. I am a bit overwhelmed since I have always taught the various fields of study are climate change, alternative resources, etc., existing definitely cannot be ignored.

- I have learned so much from reading the blog posts, and from the presentations. I am excited explore some of these topics with my students, especially those in 9th and 10th grade. Thanks to everyone for making this learning possible for me!

- I wasn’t able to be there learning with all of you, but still received informative about the jet fuel vs. fossil jet fuel and all the considerations involved in the use of biomass. As Dan said, we want our students to learn the theory of potential solutions. By exposing them to these topics and getting them to develop questions, we can get them to do that “deeper thinking” on topics that their generations needs to be thinking about and finding solutions for.