

## CEI Fellows – Product of Lasting Value

We ask CEI Fellows to work with Shaun to produce an educational “product of lasting value” (PLV). This provides the fellows with experience in broader impact programs and products, and adds to our library of materials that the CEI can share with the scientific community and the broader public. The audience for a PLV can be anything from fellow graduate students, undergrads, all the way down to elementary school age students.

Examples <http://www.cei.washington.edu/education/products/>

Here are some suggestions.

**Poster/Signage-** We are trying to improve the visual communication of our facilities MOES, NanoES, Chemistry, MSE. We would like to see signs by your instrument or outside your lab with. These include the name of the equipment or research area, a nice photo, and description of what it does, how it works and why it is valuable, or a description of the kind of research you do in the lab in lay terms.

**Demo/artifact-** Develop some physical example of the work you produce that could be used as part of our permanent displays. Examples are the earth abundant materials collection, graphene demo, battery dissections, fluorescent quantum dots, printed solar cells, colorful samples of printed films or inks, mini labs. These could become part of a “grab and go” kit for example “energy storage” or “solar exploration”

**Lesson plan-** This is a more formal K-12 classroom activity teaching some relevant STEM. Examples are build and test a battery, measuring peak power point from solar cell, cyclic voltammetry, modeling energy with spreadsheets. The activity should follow a lesson plan template: summary and significance, ngss standards, time, materials, directions, assessment, extensions. This would provide the teacher with everything they need to go out and find the materials and implement the lesson. We can distribute the lesson plans as a download from the website, and build a “grab and go” kit that has all the materials and the lesson plan so clean energy ambassadors can conduct the activity.

**Wiki page, e-learning Module, White Paper-** We are building an energy Primer Canvas course for undergraduates and interdisciplinary grad students to learn some basic science that is fundamental to each CEI area. The course has a series of text wiki pages, photos, diagram, videos like those currently in the “Science of Clean Energy” section of the website. You could also create a policy “white paper” on some aspect of science that policy makers or stakeholders need to hear about.

**Signature Event-** Plan and execute a special event that could be repeated every year. Examples are “Introduce a Girl to Photonics Fair”, or “Strengthening STEM Through Diversity” Conference.

**Environmental Innovation Challenge, Business Plan** – Participate in the UW Environmental Innovation Challenge (EIC) sponsored by the Burke Center, or build your own business plan for a product you envision.

### Videos

Videos provide a valuable resource for public awareness, for internal training and orientation. Producing one will give you some awareness of the process of video production, and gives you a semi-polished personal video for your portfolio. We imagine at least 3 types of videos which entail differing degrees of

effort. If you think you have an idea for one of these contact Shaun to explore. See the CEI or CMDITR Youtube channels for examples.

**Video 1: Technical Briefing-** This is targeted at graduate level research in your topic. The information shared should be cleared by your supervisor for public viewing. The presentation should provide a brief context, explain the structure of research, tools used (terms defined) and type of data collected, (preliminary results) and next steps. You produce a PowerPoint deck and text for each slide, record and synch audio with each slide, then output to video. 5-10 minutes.

**Video 2: Research Equipment or Technique Training-** This focuses on training someone to do a particular procedure that you are familiar with. This video is primarily shot live as you walk through a step by step instruction on how to do the procedure or run the equipment. We will edit close-up shots into the narrative and can edit the audio. This generally requires little preparation as it is something you do in your lab all the time. You should have an outline of the shots that are needed and prepare in advance any samples that need be shown illustrating each step in the process. It's not necessary to conduct a long process in real time. Edited videos may end up being 5- 20 minutes. We have a track record of creating highly viewed Youtube videos (tens of thousands or more) of this form.

**Video 3: Public Awareness-** These videos are targeted at the general non-technical public and designed to provide context and background for topics dear to the institute such as the role of solar in future energy mix, need and possibilities for various scales of storage, grid, distribution and integration issues, energy economy. Think of this as mini-documentary using a voiceover script, with slides. The CEI Fellow does the research and writes a script, creates Powerpoint slides, and helps locate video or images to cover the talking. We use the built in Powerpoint audio synching capability to produce a 2- 5 minute video.