

CEI Fellows – Product of Lasting Value

We asked the CEI Fellows to work Shaun to produce a educational “product of lasting value”. The intent of this is to provide the fellows with experience in broader impact programs and products, and to increase the library of materials that the CEI can share with the scientific community and the broader public. The audience can be anything from fellow graduate students, undergrads, down to elementary school age students.

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

Here are some suggestions.

Poster/Signage- We are trying to improve the visual communication of our facilities MoES, Chemistry, MSE. We are envisioning signs outside an instrument or lab where you work that names the equipment, a nice photo, a descriptive paragraph for the lay visitor about what it does, how it works and why it is valuable, or describes 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 classroom activity teaching of some STEM topic relevant for some level of K-12 students. Examples are build and test a battery, measuring peak power point from solar cell, cyclic voltammetry, modeling energy with spreadsheets. The activity would need to 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 or e-learning Module- We are building a mini course for undergraduates and interdisciplinary grad students to learn some basic science that is fundamental to each CEI area. This will consist of a series of text wiki pages, photos, diagram, videos like those currently in the “Science of Clean Energy” section of the website. These may be combined with quizzes and used in a blended learning style course to be developed.

Videos

Videos provide a valuable resource for public awareness, for internal training and orientation, and it will give you some awareness of the process of video production, and it will give you a semi-polished personal video case study. 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.

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.