

Shoreline Community College 16101 Greenwood Avenue North Shoreline, WA 98133

Clean Energy Technology & Entrepreneurship Advisory Board Meeting Minutes

Friday, December 18, 1015 10:00 – 11:30 AM Bullitt Building - 1501 E Madison St

Present: Industry Representatives

Reeves, Clippard, A & R Solar Ryan O. Brandt, NW WA Electrical Industry JATC Linda Burman, Hargis Engineers, Inc. Mark Cerasuolo, OutBack Power, Inc. Hwalong Cheng, Taylor Engineering, LLC Krishnan Gowri, Autodesk Barbara Hins-Turner, Centralia College Suzanne DuRard, Seattle City Light John Norton, Earthheat, Inc. Thomas Ranken, Clean Tech Alliance Teresa Rodgers, Hines for Amazon Chris Spurlock, ATS Automation

Shoreline C.C. Administrators and Faculty

Louise Petruzzella, Director, Clean Energy Technology & Entrepreneurship Program Joel Gregory, Instructor, Science David Redding, Instructor, Science Julie Wilcox, Instructor, Science Day Fey, Dean, Workforce Education Guy Hamilton, Acting Dean, Math & Sciences

Shoreline C.C. Student Representatives

Laura Humiston, Adam Weber, Jason Parker, Steve Puffenberger

Guests:

Michael Hedrick, McKinstry Lauren Hadley, Shoreline C.C. Brian Young, WA State Dept. of Commerce Katrina Morgan, Fermata Consulting LLC Gerard Maloney, EarthHeat, Inc. Valerie Marquis, Tokul Creek Consulting, LLC.

- I. Call to Order 10:02 AM by Reeves Clippard
- **II.** Approval of Minutes Louise Petruzzella moves to approve the June 5th meeting minutes. Reeves seconds the motion. Minutes are approved.

III. CET Program Updates

- Instructor, Ryan Bradt speaks about the brand new winter 2016 battery based class.
- Louise continues All four students who took the NABCEP entry level exam passed. More on this later.
- Successful NW Solar Summit October 9th & 10th (170 participants) would love to host again next year.
- CET Career Seminar with mock interviews A special thank you to the people in the industry who participated.
- Donations from iTek and Blue Frog.
- Donations from Trane in class materials like ductulators.
- Puget Sound ASHRAE Harry Clayton Sutch Scholarship. It was supposed to be given out to one student but three students from the CET program won (\$2000 each).
- Virtual Design for Energy Technologies (Revit MEP) course to be offered Summer 2016.
- Computer lab equipped and upgraded with Autodesk products, SketchUp Pro, Trance Trace 700. These programs should be on the computers in the library as well.
- There are currently approximately 40 students in the program. The goal is to have 70 students in the program.

IV. Net Zero Energy Presentation

- The Advisory Board meets twice a year but we are working on ways to improve capturing your thoughts and provide opportunities for participation in a greater way. For instance, survey opportunity https://www.surveymonkey.com/r/FQNMS3J.
- Net Zero Energy It is a building that *sips* energy <u>and</u> has an onsite energy source, usually solar. It is hard to build and design. There are very few, the Bullitt Center being one of the few in the nation.
- We want to make it transparent what we are doing. For instance, it is not in the CET program marketing materials.

Suzanne Durard from Seattle City Light – This is a good idea, especially in the Northwest. Solar should be second. Getting your building energy efficient should be first, not just the exciting technological stuff.

V. Data Collection & Needs Assessment

- Everyone wants to know this data so we created a survey reaching out to 1000 people in the industry. It takes 15 minutes. There have been 23 respondents so far. Collection is ongoing.
- We need a student focus group to capture student's experiences and needs. Winter quarter we will have a student assessment.

VI. Foundation Courses

- Reeves mentions that it is easy in an educational setting to be passive. What we need is insight into the industry to help the program to be relevant and dynamic. We need you tell us what part of the picture we might be missing.
- Is the building system class, building sciences? Yes, in NRG 102 Calculations EUI, R-Values, U• A
 •ΔT, Horsepower...the building blocks.
- Where are the students modeling? In the more advanced classes.

- Working on teaching students about large system concepts, complexity of design, and the interactivity of systems
- Also working on building on prior knowledge \rightarrow sequencing
- There could be more information on wind. NRG 101 Survey Course is first. Then they start to specialize. We are not training on wind turbine maintenance or installation at this point. We could definitely use more wind.

VII. Solar Courses

- Ryan talks about the new class, NRG 223 Battery Based PV System Design, which is the first class to be added to the solar curriculum in a long time.
- Are there any exercises to compare systems, calculate payback period? The students do shade analysis. However, in regard to different systems, thin film isn't really used anymore so we don't teach that. There are several tools available like PV Watts, Solmetric tools, and solar path finder. Reeves mentions that he has hired someone from the program and found them to be well prepared.
- *How much is hands on vs. lab*? We demonstrate the tools briefly. We have also received donations of materials and gear. We are looking to broaden the demonstrations but we must be careful. Safety is of the highest priority.
- We are building a demonstration roof. The manufacturing program here at SCC is helping us with the necessary railing.
- Due to a previous Advisory Board suggestion, Louise reached out to Ballard High School and found them to be receptive. They are developing a sustainability curriculum pipeline to our program.
- Another previous Advisory Board suggestion was to see if we could offer a NABCEP prep course for industry folks. Louise looked into it and we are <u>not</u> allowed to create a prep course.

VIII. Building Sciences and Systems

- Instructor, Joel Gregory (King County Housing Authority) NRG 161 Energy Audit Residential & Small Commercial Buildings. Blower doors, etc. We look at the house as a system with relationships. The builders who take this class wind up rethinking their work up to this point.
- *Do you use HERS rating*? No we don't teach that. We work more towards BPI, Building Analyst preparation. Also, we don't teach to the test
- Instructor, David Redding discusses High Performing Building courses. These are more hands on with calculations and modeling. Since demonstrations, materials, systems, and gear are hard to come by, he has virtualized a lot of it by creating virtual reality games.
- You have classes on residential buildings, what about commercial? Yes, we should look into that as well as perhaps a mandatory class on re-tuning.
- There is a gap between architects and builders. Passivehaus buildings are a good way to bridge that gap. We do cover the passivehaus concept but we don't study or design with it much after that.
- Student, Laura Humiston ASHRAE Student Chapter presentation 2 clubs, SCC Recognized ASHRAE Club & ASHRAE Student Chapter. Same leadership and members. Inaugural meeting January 19th.

IX. Supporting Classes

• LEED – Not a prep class to take the exam

- Instructor, Julie Wilcox SketchUp 3D modeling overlaps with other classes and we use plugins like Skelion that make it even more relevant. We might need a sales class though. The students are not prepared to deal with the customers, etc. Reeves agrees and mentions that basics in finances and/or how to take technical data and translate it to speak with the customers/public would be helpful.
- Working on a virtual design class NRG 181

X. DACUM: High Performing Building Systems and Design

- DACUM (Develop A Curriculum Model) Get practicing professionals to provide us with knowledge, skills, and abilities for a specific job title.
- Step one focus Statement so far is, High Performing Building Systems & Design
- We are not the only people doing this. But all of the DACUMs have similar language about fundamental building systems knowledge. It looks like this is where we need to be.
- 1 Day Workshop coming up **March 11th** (coffee & lunch included) <u>Need 8-12 participants</u>. Last year we won an NSF grant. So, we are able to do this using these funds.

XI. Introductions

- **XII.** Group Activity Break into small groups to finish this statement, "Wouldn't it be great if the Clean Energy Technology program would..."
- Provide a pathway to internships. Have strong relationships to the community in order to facilitate this.
- Classes that improve student's soft skills.
- Efficiencies like geothermal systems combined with solar and/or battery storage. It will help us to be flexible and keep up with industry demand.
- Add TRACE (modeling specific class) to the curriculum. For advanced students.
- There is currently perfect employment. As long as someone shows up, has a modicum of maturity, and wants to be there, employers will take the time and spend the money to train them. There is an opportunity there to create an online modality in continuing education; capture the incumbent workers. Online classes would not work with the G.I. Bill though.
- Prepare students for ASHRAE certifications HBDP (High Performing Building Design Professional), BEMP (Building Energy Modeling Professional), CEM (Certified Energy Manager). Although, there is a usually a 7 year industry experience requirement. This creates additional barriers to these certifications. Maybe instead we should use these exams to inform our curriculum.
- Provide not just internships but job shadowing, peer mentoring, as well as other ways to help students decide which classes to take or which direction they want to go.
- XIII.Conclusion Louise mentions that we will send attendees a link so they can further input their thoughts. Also, take a look at the opportunities to participate especially for the DACUM. If you haven't signed in already, be sure to mark your participation down on the sign in sheet. Special thanks to all the subject matter specialists, David, Julie, Ryan, Joel, etc.

Next Meetings 6/30/2016 and 12/16/2016

Meeting Adjourned 11:25 AM