TEACHER WORKSHOP – DESIGNING A WIND-POWERED GENERATOR MODEL
March 11, 2011
9 a.m. - 4 p.m.
Agenda

Time	Activity	Participants	Product	How it Will Work
8:30	Introduction to Engineering Principles – PPT Presentation	Teachers, A&S faculty, CoE faculty, PET, Engineer	Notes	Quick overview of engineering (Busch?) Present the E-FRAME Model. (Deneroff?) Justification for engineering design problems for students. Participation structures for design teams(Deneroff)
9:00	Identifying wind turbine variables	Teachers, A&S faculty, CoE faculty, PET, Engineer	List of variables	Clayton facilitate. Walk through wind generator cases. Whole group (WG) will brainstorm variables. Small groups (SG)of 3 will choose a variable to investigate.
9:15	Small group investigation of variables	Teachers, A&S faculty, CoE faculty, PET, Engineer	Rules of thumb for constructing wind generators	SGs conduct controlled trial of variable they chose. Prepare RoT
9:45	Reports from single variable groups	Teachers, A&S faculty, CoE faculty, PET, Engineer	Rules of thumb for constructing wind generators	Vanderheyden facilitate. SGs report their procedure, data and analysis. Present RoT to the WG. WG discussion to recap.
10:15	Break			
10:30	Begin construction of models	Teachers, A&S faculty, CoE faculty, PET, Engineer	Models	Facilitators will assist groups, ask questions if they see issues, give indirect help.
11:30	Lunch **On your Own or Brown Bag**			
12:30	Presentation by Engineer from Mercer	All		Engineering program at Mercer University
12:45	Reports on Progress, discussion, debrief of design process	Teachers, A&S faculty, CoE faculty, PET, Engineer	Notes, ideas for improvement	Deneroff facilitate. SGs present to WG
1:00	Finish construction of wind generators	Teachers, A&S faculty, CoE faculty, PET, Engineer	Wind generator model	SGs with facilitators

1:30	Testing of wind generators	Teachers, A&S faculty, CoE faculty, PET, Engineer	A winner!	Clayton facilitate WG
2:30	Break			
2:45	Debrief of the process. What were our experiences? What questions do we still have?	Teachers, A&S faculty, CoE faculty, PET, Engineer	Document recording our experiences	Vanderheyden facilitate WG
3:00	Development of Competition "Lesson Plan" in small groups then whole groups	Teachers, A&S faculty, CoE faculty, PET, Engineer	Lesson Plans	Busch facilitate SG then WG
4:00	Workshop ends			

Notes: PET is the Physics Education Team of undergraduate physics students.
Each participating school will be provided with one class set (8) of generators and 12-hole crimping hubs.
We are using the Understanding by Design process, which involves cycles of learning, design and redesign. http://www.its-about-time.com/htmls/pbis/pbllbd.pdf for more information.