

Using National Competitions as a Focus for Interdisciplinary Innovation and Entrepreneurship Education

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SMART ENERGY
Dr. Chen-Ching Liu's expertise in smart grid technology will enable the team to realize its goals in effectively marrying the potential of the smart grid and solar power generated by the home.

SMART AUTOMATION
Utilizing Dr. Matthew Taylor's expertise in multi-agent machine learning, a new home control system is being developed that is ready to optimize efficiency and occupant comfort while realizing the benefits of the smart grid and the smart city.

NEW RECYCLED MATERIALS
Wind turbine blades are a difficult resource to recycle. Dr. Karl Englund of WSU's Composite Materials Engineering Center has developed a method to utilize these as durable building materials.

NEW STRUCTURAL SYSTEMS
Dr. Vikram Yadama has pioneered a 3D corrugated plywood using oriented wood strands to create a new stiff and light structural building material.

APPLYING INNOVATIONS ENCOURAGING ENTREPRENEURSHIP

THE SILO'ED NATURE OF MOST UNIVERSITIES MAKES TRULY COLLABORATIVE, INTERDISCIPLINARY PROJECTS DIFFICULT.

DOE STUDENT COMPETITION
DESIGN AND BUILD A 600 TO 1000 SQUARE FT. NET ZERO ENERGY HOME THAT DEMONSTRATES PERFORMANCE AND COMFORT IN TEN CONTESTS.

HOW? COLLABORATION ACROSS CLASSES AND DISCIPLINES

- » NO NEW CLASSES – LEVERAGING CURRENT CURRICULUM WITH APPROPRIATE SCALE AND FOCUS BASED ON OBJECTIVES FOR EACH CLASS.
- » STANDING UP OF STUDENT CLUB TO RUN THE PROJECT.
- » AD HOC AND PLANNED COLLABORATION AND PRESENTATION MEETUPS BETWEEN CLASSES

NATIONAL COMPETITIONS OF SUFFICIENT SCOPE CAN PROVIDE A FOCUS FOR COLLABORATIVE STUDENT WORK THAT CAN BE LEVERAGED TO:

- » PROMOTE FACULTY COLLABORATION ACROSS DISCIPLINES
- » PROVIDE BUILT IN ASSESSMENT AND VALIDATION OF STUDENT WORK
- » PEER TO PEER LEARNING ACROSS DISCIPLINES
- » AUTHENTIC PROJECT AND TEAM MANAGEMENT CHALLENGES
- » CUSTOMER FOCUSED DESIGN THINKING
- » THE ABILITY TO EXPLORE OPPORTUNITIES AT MULTIPLE SCALES.

- ARCHITECTURE 
- MARKET APPEAL 
- ENGINEERING 
- COMMUNICATION 
- AFFORDABILITY 
- COMFORT ZONE 
- APPLIANCE PERFORMANCE 
- HOME LIFE 
- COMMUTING 
- ENERGY BALANCE 

