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Campus as an applied renewable energy laboratory: Sustainable infrastructures and communities E.J. ZITA[1], Evergreen St. College — How can institutions meet ambitious goals to reduce energy use and carbon during economically tight times? How can 20th century faculty at colleges and universities prepare students for a 21st century workforce? How can infrastructures function more sustainably, with moderate resources? We describe a collaborative model in which students and campus operations serve as resources for each other's development. An unusual event motivated a new model for classroom-based research at The Evergreen State College. Student teams collaborate with physics faculty, sustainability and facilities staff, and administrators to apply their academic research to the potential for renewable energy production and other sustainability initiatives on campus. Challenges such as aging buildings, energy and carbon costs, low insolation and wind, limited financial resources, and communication are addressed in a series of studies. Our campus-as-a-learning-laboratory focus produces a sustainable research community, improved communication infrastructure, concrete proposals for specific projects, and a framework for robust future work. We describe solar thermal, geothermal, building management systems, and food systems as priority projects, identifying funding sources and partners. We discuss strategies for addressing outstanding challenges, and creating opportunities.

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