



Fall 2015 Climate Change and Renewable Energy Speaker Series

Dr. Evan DeLucia

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The Changing American Landscape and its Connection to Climate

Nov 9 - Washington State University; FUL 201; 4:10 pm

Nov 10 - University of Idaho; REN 125; 12:30 pm



The earliest human civilizations managed land with fire, and later vast areas of the Earth's surface were transformed by intensive agriculture. As we change the type of vegetation on the land surface and how it is managed, we directly affect the climate system. Terrestrial ecosystems exchange greenhouse gases - carbon dioxide, nitrous oxide, methane - with the atmosphere, determining its ability to trap heat. The type of vegetation also determines how much solar radiation is reflected and how much energy is carried away by evaporation. The DeLucia laboratory has created a single metric - climate regulating value (CRV) that quantifies how land uses affect the climate system. Second only to the expansion of intensive, row-crop agriculture, a new bioenergy economy - one that depends on plants to produce liquid fuel - has the potential to alter the coupling of land and atmosphere. By combining field scale measurements of biogeochemical processes with coupled ecological-economic models, we demonstrate that the expansion of bioenergy crops in the rain fed eastern US can provide fuel and mitigate the emission of greenhouse gases e.g. provide a favorable CRV, while having minimal effects on the food supply. Our research suggests that expanded use of cellulosic biofuels can have a positive effect on the US energy portfolio.



Solar Roadways

Sandpoint, Idaho

Nov 16 - Washington State University; FUL 201; 4:10 pm

Nov 17 - University of Idaho; REN 125; 12:30 pm

Solar Roadways (SR) is an advanced, disruptive, solar technology that proposes to replace driving and walking surfaces with an intelligent road system. SR has countless features that transform roadways into a safer, aesthetically pleasing, interactive surface. SR was specifically engineered to replace: sidewalks, parking lots, driveways, sports courts, roads, and highways with unique solar panels which can pay for themselves over time with the collection of renewable energy. This presentation will cover: the history of Solar Roadways, the prototypes and funding, research and development, features, applications, design, and technical details.