

DESIGNING NEXT-GENERATION ENERGY SYSTEMS USING PREDICTIVE SCIENCE

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Scott Lab Room E100

201 W. 19th Ave.

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OVERVIEW OF DR. CACUCI'S PRESENTATION:

Predictive science refers to the application of verified and validated computational simulations to predict properties of complex systems in new environments, and requires software and algorithmic frameworks for integrating large-scale multi-scale multi-physics computational models with experimental results, including quantified uncertainties. Following a brief description of the components of predictive science, this presentation will

highlight the "predictive-science-based" design of two large-scale innovative energy systems to be constructed in France, namely:

- the design of an innovative (Gen-IV) prototype sodium fast reactor for sustainable nuclear energy production (construction decision in 2012), and
- the design of a Gen-II "biomass to biodiesel" demonstration facility (construction decision in 2010).



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