

## Doctoral Fellows Lunch Talk

### Joint Presentation

## ***DESIGN UNDER UNCERTAINTY: APPLICATIONS IN AIRCRAFT DESIGN AND WATER RESOURCES***

**Rick Walter Fenrich**, Aeronautics & Astronautics Department, Stanford University

What do stock market investments and aircraft design have in common? They both contain uncertainties! For example, one can never be sure of next year's stock returns or exactly what weather an aircraft will fly in. Despite their differences, in fact both disciplines can use similar techniques to manage their uncertainties. Engineers can use these techniques to make predictions about the behavior of the stock market or aircraft performance, leading to savings in time, saving (or making) money, and in the case of aircraft design, confidently achieving a required level of safety. His research seeks to advance these techniques and integrate them with optimization methods used in design. Rick is also expanding my application area to water resources engineering at Peking University.

## ***COMMUNICATING WITH LIGHT ON COMPUTER CHIPS***

**Colleen Shang Fenrich**, Department of Materials Science and Engineering, Stanford University

Light has been used for centuries as a mode of communication between people such as by light houses, signal lamps, or even mirrors reflecting the sunlight. Recently, light has also revolutionized the world of telecommunications by transmitting our long-distance telephone calls, Internet traffic, and cable TV signals. However, one area in which light can still make significant advances is the communication of information between or within computer chips, otherwise known as the field of "silicon photonics," which can reduce power dissipation and increase speed in computer chips. Her research seeks to answer how to first generate light on computer chips.

**Date: August 16, 2016 (Tuesday)**

**Time: 11:45 – 13:30**

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### **REGISTRATION:**

Email: [sanjiu39@stanford.edu](mailto:sanjiu39@stanford.edu); Tel: 10-62744163

*Lunch will be provided for those who have registered one day before the presentation*

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### **STANFORD CENTER AT PEKING UNIVERSITY**

The Lee Jung Sen Building, Langrun Yuan, Peking University

Please bring a photo ID and enter Peking University through the NE Gate.

Pre-registration for vehicle entrance inside the campus is required.

Please note there are no parking spaces outside the Center.

