

The Department of Mechanical  
Engineering  
PRESENTS  
**Cody Geary, Ph.D.**

*Postdoctoral Fellow*  
Aarhus University

**Friday, April 3, 2015**  
**WCH Room 205/206**  
**11:10-12:00PM**



## **RNA Origami: A new way to design nanostructures**

***Abstract:***

Artificial DNA and RNA structures have been used as scaffolds for a variety of nanoscale devices. In comparison to DNA structures, RNA structures have been limited in size, but they also have advantages: RNA can fold during transcription and thus can be genetically encoded and expressed in cells. We introduce an architecture for designing artificial RNA structures that fold from a single strand, in which arrays of antiparallel RNA helices are precisely organized by RNA tertiary motifs and a new type of crossover pattern. We constructed RNA tiles that assemble into hexagonal lattices and demonstrated that lattices can be made by annealing and/or cotranscriptional folding. Tiles can be scaled up to 660 nucleotides in length, reaching a size comparable to that of large natural ribozymes.

***About the Speaker:***

Cody Geary is a Carlsberg Foundation Postdoctoral Fellow working at the Interdisciplinary Nanoscience Center at Aarhus University, advised by Ebbe Andersen. He currently is a visiting postdoc at Caltech, in the lab of Paul Rothemund. Cody works on developing RNA nanostructures that fold up from a single strand of RNA. The designs, dubbed 'RNA Origami', are being developed in collaboration with Paul Rothemund at Caltech and Ebbe Andersen at Aarhus University. Cody obtained his B.S. in Chemistry at Caltech in 2003, and his PhD at UC Santa Barbara in 2010 under the advisement of Luc Jaeger.