**Idaho State University  
Physics Colloquium**

***Engineering Topological Materials and Devices***  
  
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The field of topological materials has attracted a lot of attention of late due to its tantalizing predictions of dissipationless electronics and decoherence-free quantum computing. However, experimental efforts have been complicated by effects of disorder and competing orders. In my lab at the University of Utah, we are working with simpler, cleaner materials such as three-dimensional topological insulators, two-dimensional graphene and one-dimensional carbon nanotubes to engineer topological effects and to engineer devices to detect or take advantage of these effects. I will describe some examples of such experiments in my lab including our recent realization of the quantum spin Hall state in 3D topological insulators in the ultrathin limit and our efforts to study correlated and topological states in ultraclean carbon nanotubes.

**Monday, March 1, 2021**  
**Via Zoom (**[**https://isu.zoom.us/j/85402435460**](https://isu.zoom.us/j/85402435460)**)  
4:00 – 4:50 pm**