



# CoCo Seminar Series

## Fall 2017

### Adaptive Capacity as Emergent Capacity

**Dr. Pamela Mischen**  
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**Binghamton University**

**Wednesday, September 20th, 2017 8:30-9:30am**  
**Engineering Building H-9 (Knoll-MacDonald Commons / Watson Commons)**



By conflating capital and capacity, we often underestimate the abilities of small, local communities. My research explores the intricacies and differences between capital and capacity and develops a conceptual model of emergent capacity. Additionally, qualitative data from municipalities in two regions of Pennsylvania that are contending with high-volume, horizontal fracturing of natural gas (“fracking”) suggest that local governments, for the most part, have the capacity to manage this complex phenomenon and demonstrate absorptive, innovative, and adaptive capacities.

Adaptive capacity is an emergent system-level capacity because it is a function of agent-level resources (capital), individual-level capacities, and the connections between agents that allow them to share resources and capacities. Ultimately, the extent to which a system is able to adapt is dependent on the amount and diversity of resources and individual-level capacities, the structure of the connections between them (including redundant pathways), and the density of pathways. Evolution of systems occurs when successful systems are able to reproduce and unsuccessful system are allowed to die. Learning occurs when a system is able to fundamentally change itself to become more successful. Both evolution and learning can produce systems with adaptive capacity, albeit at different rates of change.

Dr. Pamela Mischen is Associate Professor in the Department of Public Administration. She also teaches in the Master’s Program in Sustainable Communities. Her research focuses on local government capacity to create sustainable communities.

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