



# CoCo Seminar Series

## Fall 2021

### Why Do We Care about Systems?

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**PhD candidate in Systems Science**  
**Binghamton University**

**Wednesday December 8, 2021**  
**11:00am-12:00pm EST**  
**Online via Zoom (meeting link available on**  
**<http://coco.binghamton.edu/>)**



Every day, in uncountable ways, we encounter complex systems – from morning traffic and weather through markets and politics. But, really, do we care? Are the systems characteristics studied in Systems Science just academic curiosities or does an understanding of them provide practical value? To consider this question, we will develop and explore a pragmatic model of human interaction with the complex world. First, we need a simple, casual definition of systems. Next, a practical, human model of thinking, learning and taking action in the real world is built pulling together concepts from philosophy, cybernetics, psychology, information theory and economics. With a human actor defined, we turn our attention to real world systems. We consider two important universal characteristics or ‘laws’ of systems as well as some useful classes of interaction with humans. Remarkably, an explanation emerges from these simple distinctions of how and why the world we live in is getting more complex. Finally, we turn our attention to the types of actions we can choose as we interact with this complex world. With this complete model in hand, we then evaluate a few examples of the interaction between humans and everyday systems. Hopefully, after this long ride through all of these dimensions of human interaction with the complex world we will understand why we must care about systems. We care because we impact them, intentionally or unintentionally, they impact us, for better or worse, and we depend on them for our very survival.

Mark Sellers is a PhD candidate in the Systems Science program at Binghamton University, and an Senior Systems Engineer at Northrop Grumman Laser Systems. His research interests include systems thinking, systems science, general systems problem solving, and their applications to engineering practice. This seminar is also his PhD dissertation defense.

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