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## Seminar Presentation

**Dr. Mike Chester**  
**Arizona State University**

**Infrastructure and the Anthropocene**  
**Thursday, October 24, 2019**  
**4:00-5:00pm**  
**KAP 209**

### **Abstract:**

At the dawn of the twenty-first century, there are signs that several critical social, technological, and environmental variables are changing in ways that will have major effects on how we design and manage infrastructure. These variables include climate non-stationarity, uncertainty in financing, increasing ideological polarization in politics, and acceleration of technologies, as well as their interactions. These variables are positioned to increase the uncertainty and complexity of the systems that infrastructure must operate in and support, and are likely to require new competencies of engineers and infrastructure managers. In this talk I will attempt to characterize the emerging uncertainty and complexity that is becoming the new normal for infrastructure. In doing so I will describe the changing relationship between infrastructure and the environment, how infrastructure implementation and operation have become wicked and complex problems, and how the accelerating integration of cyber technologies is likely to fundamentally shift the capabilities and vulnerabilities of infrastructure. I will then discuss how our approaches to infrastructure need to shift from a focus on the complicated problems that we tackled in the past century, to a paradigm that acknowledges the growing complexity in the Anthropocene and our inability to manage it. I will argue that agility and flexibility will need to be core design principles (instead of rigidity) and education will need to be transitioned towards training infrastructure managers for goals of guiding complex systems.

Headshot: [https://www.dropbox.com/s/f3mztgj03vss47q/chester\\_headshot\\_20170901.jpg?dl=0](https://www.dropbox.com/s/f3mztgj03vss47q/chester_headshot_20170901.jpg?dl=0)

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