## 2017-18 Prestige Lecture Series on Science of Information

## "On Capacity and the Value of Communication"



## Michelle Effros

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August 21st, 2017 3:30pm - 4:30pm LWSN 1142, Purdue University

In information theory, the capacity of a channel is defined as the rate at which that channel can reliably deliver information. This talk considers the question of how a channel's capacity relates to the impact that that channel can have on a larger network. For example, we consider whether adding a small link to a larger network can vastly increase the amount of information that the network can carry.

Equivalently, we ask whether failure of a small link can do massive damage to the capacity of the network in which that link was employed. While the answers to these fundamental questions remain incompletely understood, results to date demonstrate that the capacity of a channel can vastly under-predict the value of the communication that the channel enables.

Michelle Effros earned her bachelors, masters, and doctoral degrees in electrical engineering from Stanford University. She is the recipient of a number of honors including the NSF CAREER Award, the Charles Lee Powell Foundation Award, the Richard Feynman-Hughes Fellowship, and the Communications Society and Information Theory Society Joint Paper Award. She is a fellow of the IEEE and a member of Tau Beta Pi, Phi Beta Kappa, and Sigma Xi. She was cited by Technology Review as one of the world's top 100 young innovators.



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