

the evolution of

# COMPLEX SYSTEMS

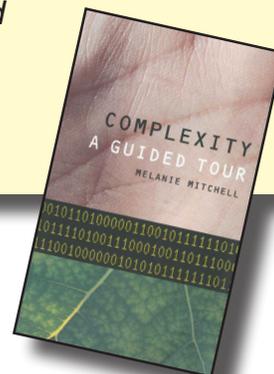


2011 Fall Lecture Series



UAA Complex Systems lecture and  
book signing by noted author:

**Melanie Mitchell**



**Complexity: A Guided Tour**  
**Thursday, October 20**  
**7:00 pm, ARTS 150**

What enables individually simple insects like ants to act with such precision and purpose as a group? What is it that guides self-organizing structures like the immune system, the World Wide Web, the global economy, and human genome? These are just a few of the fascinating and elusive questions that the science of complexity seeks to answer. Hear Melanie Mitchell explore these and other topics at her lecture and book signing on Thursday, October 20th, at 7:00 pm in ARTS 150.

**How to Understand Pictures (If You are a Computer)**

**Friday, October 21**

**12:00-1:00 pm, CPISB 120**

Enabling computers to understand images remains one of the hardest problems in artificial intelligence. No machine comes close to matching human ability at identifying the contents of images or visual scenes, even though such abilities pervade human cognition. New research can bridge the gap between low-level perception and higher-level image understanding by integrating a cognitive model of pattern recognition and analogy-making with a neural model of the visual cortex.

**Tea and Conversation with Melanie Mitchell: A Woman with Complexity**

**Friday, October 21**

**3:00-4:30 pm, UAA Campus Bookstore**

Come talk informally with Professor Mitchell about her writing and her research. Everyone is invited to learn about complex systems—no background in math or science is needed, just bring your imagination.

**Melanie Mitchell** is Professor of Computer Science at Portland State University, and External Professor and Member of the Science Board at the Santa Fe Institute. She is the author or editor of five books and over 70 scholarly papers in the fields of artificial intelligence, cognitive science, and complex systems. Her most recent book, *Complexity: A Guided Tour* (Oxford, 2009), is the winner of the 2010 Phi Beta Kappa Science Book Award, and was named by Amazon.com as one of the ten best science books of 2009.

*Complex Systems is co-sponsored by Undergraduate Research, College of Arts and Sciences, and the UAA Honors College*

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