

Gateways to Emergent Behavior in Science and Society:  
an ICAM/SFI workshop to be held at SFI  
**September 23-26, 2013**

Organizing Committee: John Holland, Michigan, Simon Levin, Princeton, David Pines, UC Davis, and Donald Saari, UC Irvine

**Monday, September 23, 2013**

6:00 pm Welcome reception and buffet

**Tuesday, September 24, 2013**

**Session 1. Physical Systems**

*Co-Chairs: John Hopfield, Princeton, and David Campbell, Boston University*

8:45 am Welcome and Introductory Remarks  
9:00 am "Landscapes and Beyond—Glasses, Proteins, and the Cell"  
**Peter Wolynes**, *Rice University*  
9:45 am Discussion  
10:30 am Coffee break  
11:00 am "Patterns of Synchrony: From Animal Gaits to Binocular Rivalry"  
**Marty Golubitsky**, *Ohio State*  
11:45 am Discussion  
12:30 pm Lunch

**Session 2 Living Matter**

*Co-Chairs: Marcus Feldman, Stanford and \*Daniel Cox, UC Davis*

2:00 pm "Emergence in Physical and Biological Systems far from Equilibrium"  
**Nigel Goldenfeld**, *UIUC*  
2:45 pm Discussion  
3:30 pm Break  
4:00 pm "Insects in Free Flight: Movement and Thoughts"  
**Jane [Zheng] Wang**, *Cornell*  
4:45 pm Discussion  
5:30 pm End of session  
6:30 pm Dinner at Pranzo

**Wednesday, September 25, 2013**

**Session 3 Natural Systems**

*Co-Chairs: Mimi Koehl, U C Berkeley and Jerry Sabloff, SFI*

9:00 am	"Collective Phenomena, Collective Motion, and Collective Action in Ecological Systems " <b>Simon Levin, Princeton</b>
9:45 am	Discussion
10:30 am	Coffee break
11:00 am	"The Emergence of Multicellularity" <b>Corina Tarnita, Princeton</b>
11:45 am	Discussion
12:30 pm	Lunch

#### **Session 4 Toward a Habitable Planet**

*Co-Chairs: Qing Tian, George Mason and TBA*

2:00 pm	TBA <b>Daniel Schrag, Harvard</b>
2:45 pm	Discussion
3:30 pm	Break
4:00 pm	TBA <b>John Schellnhuber, Potsdam</b>
4:45 pm	Discussion
6:30 pm	Workshop Banquet at La Fonda

#### **Thursday, September 26, 2013**

#### **Session 5 Emergence-based Science**

*Rapporteurs and Discussion Leaders: John Holland, Simon Levin, David Pines, and Donald Saari*

9:00 am	<b>John Holland</b>
9:15 am	Discussion
9:45 am	<b>Simon Levin</b>
10:00 am	Discussion
10:30 am	Coffee break
11:00 am	<b>David Pines</b>
11:15 am	Discussion
11:45 am	<b>Donald Saari</b>
12:00 pm	Discussion
12:30pm	Workshop Concludes