



The National Institute for Mathematical and Biological Synthesis

cordially invites you to an

Interdisciplinary Seminar

with

NIMBioS Postdoctoral Fellows Invited Distinguished Visitor

Dr. Elizabeth Bradley

on

“Chaos and Control”

Tuesday, September 22, 2015

3:30-5 p.m.

Reception & refreshments at 3 p.m.



Elizabeth Bradley did her undergraduate and graduate work at MIT, interrupted by a one-year leave of absence to row in the 1988 Olympic Games, and has been with the Department of Computer Science at the University of Colorado at Boulder since January of 1993. Her research interests include nonlinear dynamics, artificial intelligence, and control theory. She is the recipient of a NSF National Young Investigator award, a Packard Fellowship, a Radcliffe Fellowship, and the 1999 student-voted University of Colorado College of Engineering teaching award.

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Abstract: Understanding and exploiting the special properties of chaos can lead to designs that vastly improve the performance of many practical and useful systems --- spacecraft trajectories that require less fuel, for example, or tracking circuitry with broader capture ranges and fuel injectors that mix gasoline and air more effectively. Control strategies that leverage chaos's characteristic geometry, ergodicity, and sensitivity to attain such improvements rely on powerful computational tools that use a combination of quantitative and qualitative reasoning to work with the special properties involved. This talk will begin with a review of the mathematical theory and computational techniques that are used in the control of chaos, and then cover a variety of interesting examples ranging from science and engineering to dance.



The seminar will be live streamed. Visit
<http://www.nimbios.org/videos/livestream>.
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