



Modeling Complex Systems

Class: Nov 19

Workshop: Nov 20-21, 2002

From fractal measurements to modeling



These blind men, every one honest in his contentions and certain of having the truth, formed schools and sects and factions. . . *Buddha*

**Reid Engineering Laboratory
Conference Facility
University of Nevada, Reno**

Important links

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Keynote speaker: ♦ [Stuart Kauffman](#)

"Molecular Autonomous Agents: A Possible Definition of Life,
And a Possible Technological Revolution"

Dinner speaker: ♦ [Stephen Wolfram](#)

"A new Kind of Science"

The focus of this workshop will be on the application of complex-systems analysis in the Earth sciences, the life sciences, computer sciences, and engineering. The intended participants in this workshop range from experts in complex systems to scientists who are interested in exploring how the complex systems approach can advance their research efforts. In the spirit of this workshop, a purposeful level of pedagogy is encouraged in the presentations. In keeping with this purpose, a one-day class on complex systems is offered for separate enrollment by the New England Complex Systems Institute; the class is planned for November 19, '02.

Class Description

This course, to be instructed by [Yaneer Bar-Yam](#), will introduce several approaches to the study of complex systems, and will give an overview of the application of complex systems science to research and modeling. Basic concepts will be reviewed and implications for the study of inanimate, biological, sociological and engineered systems will be discussed.

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Sponsors

[Mineral Resources Program](#), U.S. Geological Survey

[Desert Research Institute](#), Reno, Nevada

[University of Nevada](#), College of Engineering, Reno, Nevada

[New England Complex Systems Institute](#), Cambridge, Massachusetts

Invited speakers

Christopher C. Barton,

Yaneer Bar-Yam,

Mark Gettings,

Ahmad M. Itani,

Lui Lam,

Kelly T. Redmond,

Sushil Lewis,

U.S. Geological Survey

New England Complex Systems Institute

U.S. Geological Survey

Univ. of Nevada, Reno

San Jose State University

Desert Research Institute, Reno

Univ. of Nevada, Reno

Detailed information

Topical disciplines

Disciplines include engineered systems at all scales (large-scale structural engineering, nanotechnology, artificial life, traffic systems, granular matter, etc.), computer sciences, geology, mineralogy, geophysics, geochemistry, hydrology, oceanography, climatology, microbiologically mediated processes, biological systems, and ecology.

Three types of presentations will be offered:

- Key note presentation: 60 min
- Instructional talks: 40 min (including discussion)
- Review talks: 30 min (including discussion)
- Research papers: 20 min (including discussion)

Program Schedule

Tuesday (Nov-19)

Cx Clsss registration 8:00 - 8:30
(Reid Eng. Lab Conf. Facility)
Complex Systems Class
(NECSI) 9:00 - 5:00

Wednesday (Nov-20)

Desk registration 8:00 - 9:00
Continental breakfast 8:15 - 9:00
(Reid Eng. Lab Conf. Facility)
Sessions - I & II 9:00 - 5:00

Thursday (Nov-21)

Continental breakfast 8:15 - 9:00
(Reid Eng. Lab Conf. Facility)
Sessions - III & IV 9:00 - 5:00

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Important dates/deadlines

- | | |
|---|------------|
| □ Registration | \$ 190* |
| □ Registration for Complex Systems Class
(Must register with NECSI) | \$ 90** |
| □ Abstract submission by | Oct 25 |
| □ Paper submission to be available at workshop | Nov 1 |
| □ Complex Systems Class | Nov 19 |
| □ Workshop | Nov 20, 21 |

*Includes continental breakfast Nov 20 & 21, lunch Nov 20, breaks, reception & dinner at DRI (Nov 20th evening), and transportation to DRI from University Inn. Total participants will be limited to ~100.

Student registration fee: \$90 for all sessions, meals, breaks, services, & events (limited number).

** Includes coffee breaks for Cx class Nov. 19th.

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Abstract submission

Abstracts not exceeding ~500 words, including author, institution, and e-mail address (*AGU format required: <http://www.agu.org/pubs/inf4aus.html>*) should be submitted via e-mail in Microsoft Word 2000 (or later) to: Victor Mossotti (mossotti@usgs.gov) no later than October 25, 2002.

Publication of proceedings & Author's guidelines

Manuscripts in the form of extended abstracts or short papers will be published in workshop proceedings as a formal publication. Speakers are invited to submit manuscripts before the meeting. Manuscripts will also be accepted up to two months after the meeting. A link to the proceedings volume will become available on this website shortly after the workshop. Manuscripts for the proceedings should be submitted electronically in Microsoft Word format to: Victor Mossotti at: mossotti@usgs.gov ; AGU format is suggested: <http://www.agu.org/pubs/inf4aus.html> .

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Registration

Please e-mail the following information to:

Ms. Ellen Jacobson at:**

jacobsoe@unr.edu

- Full Name:
- Organization:
- General scientific area of interest:
- Participation category (Non-Student \$190/Student \$90)
- Presenting paper Yes/No if yes give title:
- Address:
- Phone:
- e-Mail address:

Make check payable to :

College of Engineering, UNR

Mail check to:

Ellen Jacobson

College of Engineering, SEM-132

Mail Stop 256

University of Nevada, Reno

Reno, NV 89557

** USGS employees should check the link on the workshop home page for “Registration Guidelines for USGS Employees.”

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Travel Considerations

The workshop will be held at the Reid Engineering Conference Facility, College of Engineering, [University of Nevada-Reno \(UNR\)](#). A reception and dinner will take place at the [Desert Research Institute \(DRI\)](#), 2215 Raggio Parkway, at the north end of Reno, on November 20th; round-trip transportation for the reception and dinner will be provided from the University Inn (signups for 6:00 pm boarding are requested). Taxi fare to DRI from UNR is about \$7.00.

Lodging

A block of rooms has been reserved at the [University Inn \(\\$55\)](#), located at the UNR campus. An abundance of rooms are available in downtown Reno ranging in price from about \$39 to \$65; the UNR campus is approximately a ten-minute walk from downtown; we recommend the Silver Legacy (\$39 + Tax). Please make reservations directly with the hotels:

[University Inn](#): 775-323-0321; special rates will be held until Oct. 1, 2002. Use conference name to obtain special rate.

Transportation

Shuttles are available from the Reno airport to the University Inn (\$3.50) and to downtown Reno (free with room reservations); taxi fare from the Reno airport to the University Inn is about \$10. Although all major car rental companies are represented at the Reno Airport, a rental car should not be necessary for the purposes of the workshop.

UNR campus map: <http://www.howler.unr.edu/bcnpurchasing/Purchasing/MapDirections.htm>

DRI map: <http://www.dri.edu/>

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Steering Committee

Victor G. Mossotti (Chairman)

U.S. Geological Survey (650) 329-5284

Christopher C. Barton,
Yaneer Bar-Yam,
Cambridge

U.S. Geological Survey, St. Petersburg, Florida
New England Complex Systems Institute,

Ahmad M. Itani,
Lui Lam,

Univ. of Nevada, Reno
San Jose State University

Sushil Lewis,

Univ. of Nevada, Reno

W. Alan McKay,

Desert Research Institute, Reno

Kelly T. Redmond,

Desert Research Institute, Reno

Bernard Zygelman,

Univ. of Nevada, Las Vegas

Ellen Jacobson (Local Arrangements)

Univ. of Nevada, Reno

JoAnn Barragan (Manuscript Coordination)

U.S. Geological Survey

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[U.S. Department of the Interior](#), U.S.
Geological Survey, Reston, VA, USA



[Western Minerals Team](#)

<http://minerals.usgs.gov/west/seminar1.shtml>

Last modification: 9-September 2002 @ 19:00