

**Public  
Conference  
& Academic  
Meeting**



**Thursday 11 September 2008**

*The*  
**Royal Society  
of Edinburgh**

**Nania'08**

Supported by



## **Computer Predictions for Nature and Society: Should they be Trusted?**

Computer simulations have long been used by scientists and engineers to help design better materials and machines. Increasingly computers are being used to predict the future for natural and social processes, such as epidemics, climate change, economic forecasting and earthquakes. Why should these predictions be trusted, given the complexity of these systems and the many unknown variables involved? Should government policy be based on them? We have gathered together four leading computer modellers to present their views, and defend them in panel discussions. Since the consequences of their findings may affect us all, we will invite the audience to enter the debate by putting questions to two expert panels.

*A subsequent two-day academic meeting will take place at the University of Edinburgh from 12th-13th September. Applications to give talks at this meeting are invited. Please see the meeting web-page for details. Closing date for applications is the 31st May 2008.*

*(Full programme is printed overleaf)*

Being held at

**The Royal Society of Edinburgh (RSE)  
22-26 George Street, Edinburgh, EH2 2PQ**

**[www.royalsoced.org.uk](http://www.royalsoced.org.uk)**

**Full rate (including subsequent academic meeting): £120**

**Full rate for conference only: £50**

**Concession rate for conference only: £30**

**SUPA Student: Free (funded by SUPA)**

**To register or to receive further information  
contact the RSE Events Department:**

Telephone: 0131 240 2780, Fax: 0131 240 5024, Email: [events@royalsoced.org.uk](mailto:events@royalsoced.org.uk)

## Conference Programme - 11th September 2008

0900: Registration / Tea & Coffee

0930: RSE Welcome  
RSE President

0935: Chairman's Welcome (Chairman TBC)

0945: **Two's Company - Three is Complexity: Traffic jams, Stock Market Crashes and War**

**Professor Neil Johnson**, *University of Miami, Florida*

*Neil Johnson studies collective behavior and emergent properties in a wide range of real-world Complex Systems: from the spread of real and computer viruses, group dynamics and herd behaviour in financial markets through to quantum entanglement in nanostructures. Neil presented the televised 175th Royal Institution Christmas Lectures entitled "Arrow of Time" in 1999 and his book "Two's Company, Three is Complexity" was published this year.*

1030: Q&A

1045: Tea & Coffee

1115: **How should Politicians react when an Epidemic Breaks Out?**

**Professor Christl Donnelly**, *Imperial College London*

*Christl Donnelly builds statistical and biomathematical methods for the analysis of epidemiological patterns of infectious diseases. Her computer analyses guided government policy during the 2001 Foot and Mouth Disease outbreak, and she has tested the effectiveness of badger culling in preventing tuberculosis in cattle.*

1200: Q&A

1215: Panel Discussion

1245: Lunch

1345: **The Human Consequences of Climate Change**

**Professor Leonard Smith**, *London School of Economics & Oxford University*

*Lenny Smith is Director of the Centre for the Analysis of Time Series at London School of Economics, with extensive interests ranging from economics to meteorology, linked by chaos theory, the subject of his recent book "Chaos: A Very Short Introduction".*

1430: Q&A

1445: Tea & Coffee

1500: **How can we Predict the Climate when we can't Predict the Weather?**

**Professor Peter Cox**, *University of Exeter*

*Peter Cox holds the Met Office Chair in Climate System Dynamics at Exeter, having previously been was the Science Director for Climate Change at the Centre for Ecology and Hydrology. As lead-author of a chapter of the IPCC Fourth Assessment report on Climate Change, and with frequent appearances on TV, he is one of the UK's best-known scientific and popular climate-change experts. His special expertise lies in interactions between the climate and life, and feedbacks in the carbon cycle.*

1545: Q&A

1600: Panel Discussion

1630: Chairman's summary

1645: Close

# Nania'08

**Academic meeting on fundamental approaches to evolving and self-organising systems,  
University of Edinburgh, 12-13 September 2008**

## **Friday 12 September 2008**

0930: **Morning session, themed around "Life"** (Tea & Coffee served at 1100)

Contributions welcomed on the topics of ecology, disease spreading, population biology and animal behaviour.

1230: Buffet lunch

1400: **Afternoon session, themes around "The Universe"** (Tea & Coffee served at 1530)

Contributions welcomed on the topics of self-organisation and feedback on the earth and beyond; e.g., earthquakes, climate, astrobiology.

1700 - Late: Social events

## **Saturday 13 September 2008**

1000: **Morning session, themed around "Everything"** (Tea & Coffee served at 11am)

Contributions welcomed on the topics of social, cultural, economic and technological evolution.

1300: Meeting closes

**Further details, including instructions for submitting contributions to any of the sessions, can be found at <http://www.ph.ed.ac.uk/nania/2008>**

## Registration Form

### NANIA'08 & Computer Predictions for Nature and Society: Should they be Trusted?

Title \_\_\_\_\_ First Name(s) \_\_\_\_\_ Surname \_\_\_\_\_

Job Title \_\_\_\_\_

Organisation / Address \_\_\_\_\_

\_\_\_\_\_ Postcode \_\_\_\_\_

Daytime Telephone \_\_\_\_\_ Fax Number \_\_\_\_\_

Email \_\_\_\_\_

Do you have any special access / dietary requirements (e.g. Vegetarian / Wheelchair access)

**Payment Details: Please note that registrations will not be processed until full payment has been received and the cancellation policy has been accepted (see below)**

#### Computer Predictions for Nature and Society: Should they be Trusted? - 11th September 2008

cost includes tea/coffee and light lunch

**Full Rate: £50** - for the 11th of September Conference only

**Concessionary rate: £30** - for the 11th of September Conference only

#### NANIA'08 academic meeting - 11-13th September 2008 (including the Public Conference)

**Full Rate: £120** NANIA'08 meeting - 11 - 13th of September

**SUPA Student Rate: Free (funded by SUPA)**

**Cheque:** I enclose a cheque made payable to "The Royal Society of Edinburgh" to the value of £

**Credit/Debit Card:** Please debit my Visa  Mastercard  Switch/Maestro  To the value of £

Card No \_\_\_\_\_

expiry date (mm/yy) \_\_/\_\_/\_\_ start date (mm/yy) \_\_/\_\_/\_\_

Cardholder's name \_\_\_\_\_

**Cancellation Policy:** To cancel your registration you should notify the RSE in writing no later than two weeks before the conference for a full refund to be issued. For cancellations received after this date, the full registration fee remains due.

SIGNATURE \_\_\_\_\_

**PLEASE COMPLETE AND RETURN THIS FORM TO:**

**THE EVENTS DEPARTMENT,**

**THE ROYAL SOCIETY OF EDINBURGH,**

**22-26 GEORGE STREET, EDINBURGH, EH2 2PQ.**

**fax: 0131 240 5024 OR EMAIL [events@royalsoced.org.uk](mailto:events@royalsoced.org.uk)**