



COMPLEXiTY
research seminar



GSD
Global System
Dynamics & Policies



**ESRC Research Seminar Series
Seminar 2**

Applied Complexity Theory as the New Framework for Public Policy

Energy & Climate Change: the Contribution of Complexity Science

Jeffrey Johnson

Open University Centre for Energy & Sustainability

09:30-18:00, 24th March 2009, London School of Economics

What purpose ?

**to devise new research in
Applied Complexity Theory as the
New Framework for Public Policy**

What support ?

EU – ASSYST Project

EU – GSD Project

What funding ?

ESRC

EU – FET

EU – Complexity-Net

EPSRC Calls

MET & NERC,

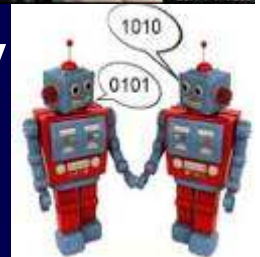
Future and Emerging Technologies in the 7th framework programme of the European Commission

FET mission:

- Redefine what is possible
 - Insist on visions
 - Support high risk high impact research
 - Insist on open boundaries between disciplines
 - Reflect on technology's role in society
- Some examples how FET attempts
to 'span the arc of science'



Actroid,
Kokoro



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Related Links & Events

Upcoming Events

April 2-4 2009 **'Agent-based Modelling and Sustainable Development' Workshop** [→ Venice, Italy](#)

Multi-agent models hold promise for inquiries about the challenges of sustainable development, including climate change, poverty reduction, and financial stability. This workshop will address the potential benefits and problems associated with the use of this methodology

[Full workshop agenda](#)

[Register for this workshop by March 15th](#)

A joint workshop between GSD and the [European Climate Forum \(ECF\)](#).



www.assyst.open.ac.uk



Action for the Science of complex SYstems and socially intelligent iCT

Accessibility: 

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European Commission Framework Seven

The ASSYST Project

COSI-ICT

The new 2008-2011 coordination action ASSYST (coordinator: Jeff Johnson) is funded from the € 20m FET Proactive initiative *Science of Complex Systems for Socially Intelligent ICT* (COSI-ICT). The COSI-ICT programme has four integrated projects with € 900,000 for ASSYST. The work packages of ASSYST are closely aligned with the activities of the Complex Systems Society:

[Printable ASSYST Information](#)

THE ASSYST WORKPACKAGES

WP1: Kickoff Meeting and Roadmap & Promoting CS Research

The kickoff meeting will be hosted by the Complex Systems Society at the *Institut des Systèmes Complexes* Paris in January or February 2009. The annual roadmap of ASSYST will be adopted as the roadmap of the Society. ASSYST will promote CS & COSI-ICT research by publishing success stories and seeking media coverage, and lobbying policy makers at national and European levels for CS research support. This includes liaising with local funding council and European structures such as the ERA and complexity net.










WP2: WP2 Coordinating Scientific Meetings

ASSYST will organise many scientific meetings in Europe, in the new member states, in the candidate states, with the USA and South America, with Japan, China and India, and with Africa. These meeting will include workshops and schools. Apart from connecting scientists and enabling scientific interchange, these meetings will be a source of information for the roadmap and policy actions of WP1.

WP3 Coordinating Private Sector Applications of Complex Systems Science

ASSYST will seek to make better connections between complex systems scientists and

Links to sources

-  ASSYST Overview
-  COSI-ICT-Flyer
-  Link to Jeff Johnson
-  The Design Group
-  Centre for Complexity and Change
-  Embracing Complexity in Design
-  Design, Development, Environment and Materials Department
-  Faculty of Mathematics, Computing and Technology
-  Seventh Framework Programme

Contact...

Jeff Johnson

eccs09.info - Microsoft Internet Explorer provided by MCT-Services (Mobile)

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European Conference on Complex Systems 2009

21-25 September 2009, University of Warwick, UK

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- Conference Accommodation
- Paper Submission
- Registration - now open
- Past & Future Meetings
- Mainly for Organisers

Complex Systems Society

The call for [paper submission](#) has now opened!

The call for ECCS'09 satellite conferences is now closed. We still take proposals in exceptional cases.

In this case go to the [proposal submission page](#) and contact the organisers.

Please also still [pre-register](#) to receive further information, and to offer [programme suggestions](#).

Conference Tracks:

- Policy, Planning & Infrastructure**
Policymaking; Urban Planning; Internet; Transport & Power Networks; Medical & Health Systems.
- Collective Human Behaviour and Society**
Economics & Finance; Sociology; Psychology; Game Theory.
- Interacting Populations and Environment**
Climate Change; Pollution; Demography; Ecology; Epidemiology.
- Complexity and Computer Science**
Robotics; Grids, Clouds & Novel Computing; Ubiquitous Computing.
- From Molecules to Living Systems**
Self-assembly & Self-organisation; Neuroscience; Cell, Developmental and Systems Biology; Genetics; Medicine & Physiology.
- Mathematics and Simulation**
Mathematics; Modelling; Simulation; Theoretical Physics.

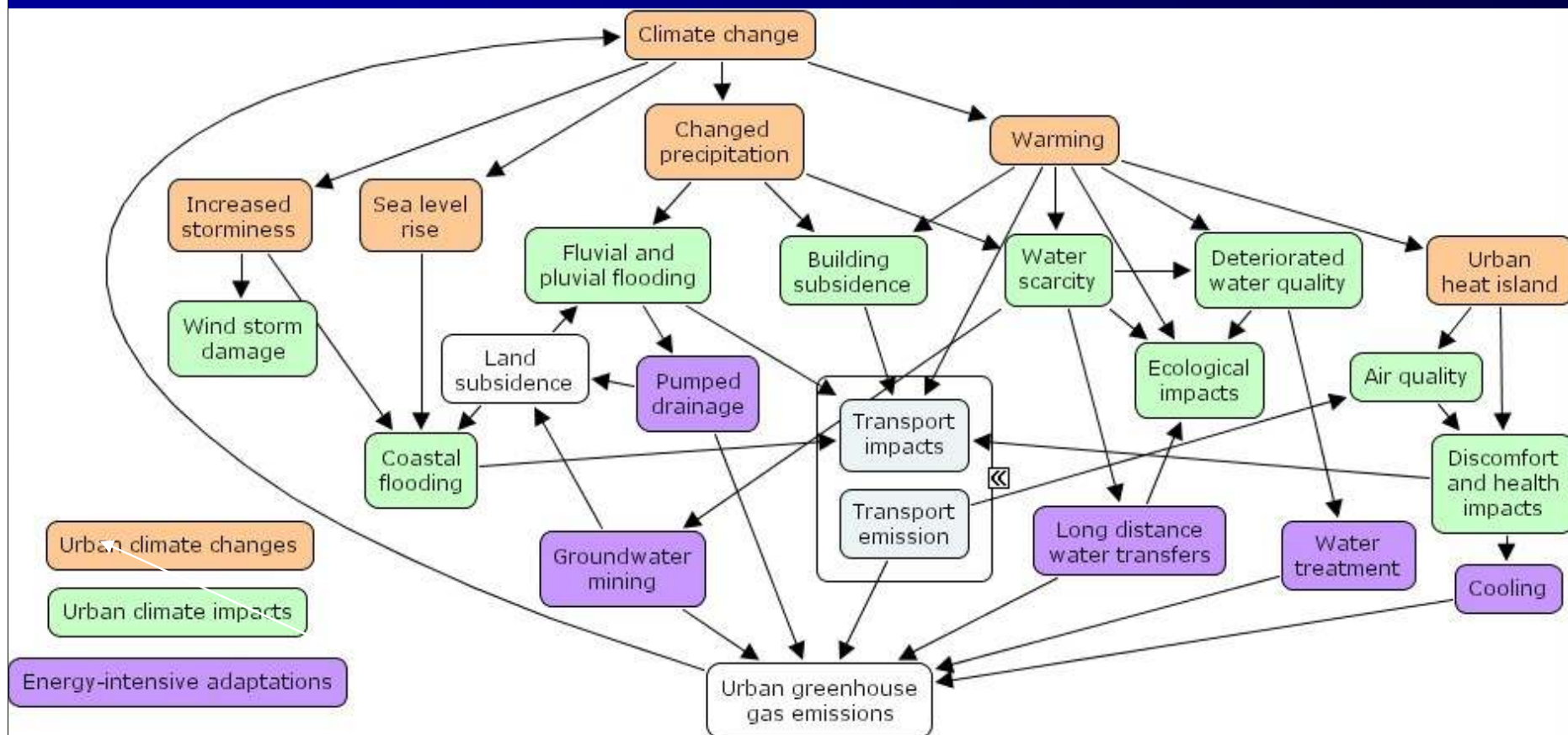
Click on poster to enlarge:

Conference supported by:

University of Warwick
Centre for Complexity Science
Warwick Mathematics Institute WMI
Dept of Physics

Done Internet

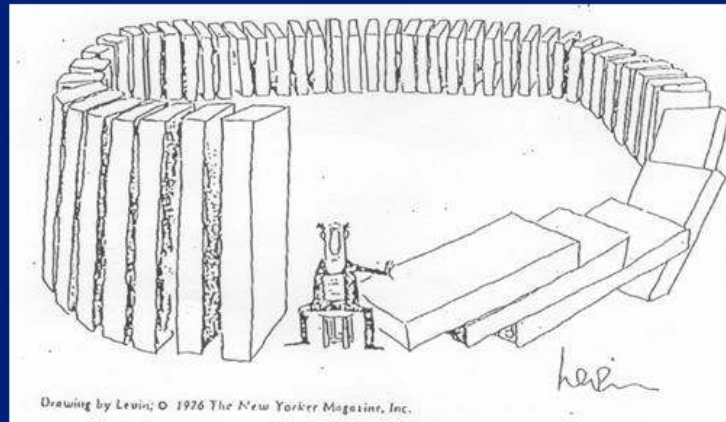
A vicious circle of highly connected systems



Source: Tyndall centre

All these challenges necessitate an integrated view of nature, society, economics and novel technologies

Aren't we?



Ralph Dum
Future and Emerging Technologies
European Commission
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The views expressed in this presentation are the author's,
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Your Guide to Energy Research - Microsoft Internet Explorer provided by MCT-Services (Mobile)

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Home > Research Highlights > Energy > Guide to Energy Research

Your Guide to Energy Research**Why do we need research into energy?**

The UK's own gas and oil reserves are dwindling so if we do not develop alternative, secure energy sources we could be at the mercy of a volatile global energy market as we are forced to import more of our energy from abroad. At the same time the burning of fossil fuels worldwide has led to a build up of greenhouse gases (especially carbon dioxide) in the atmosphere.

Greenhouse gases trap heat in the Earth's atmosphere and induce global warming in what's termed 'the greenhouse effect'. Evidence suggests that recent rapid climate change is being driven by global warming caused by greenhouse gas emissions. If left unchecked, climate change will lead to flooding across many parts of the globe as well as severe droughts and permanently lower temperatures elsewhere - causing untold damage to ecosystems and economies.

To tackle the dual problems of the UK's declining energy resources and the global threat of climate change we need a mix of new technologies to generate 'clean' energy and an updated energy infrastructure that can cope with future demand.

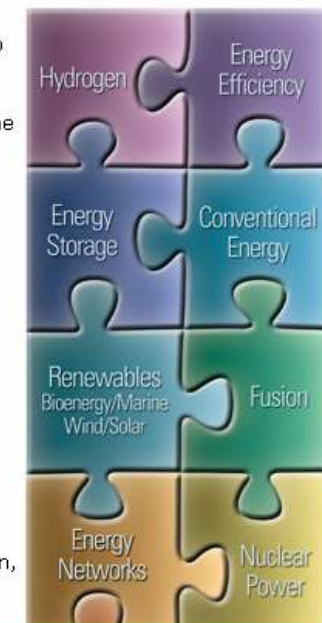
What sort of energy research do the Research Councils support?

EPSRC is taking the lead on energy research on behalf of all the UK Research Councils: This entails managing research into everything from energy storage and 'renewable' energy sources - such as wind, marine and solar power - to the social, economic and environmental aspects of new energy technologies.

Engineers and scientists are, for instance, investigating alternative fuels, such as biomass or hydrogen, as well as new ways of generating energy from existing fuels - one example being 'clean coal' technology. Integrating these diverse energy sources into a flexible and reliable energy infrastructure

Your Guide to Energy

Click on the jigsaw for more



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Panel Name: Energy Challenges for Complexity Science
Date of Panel: 03 March 2009
Panel Contact: Dr Gavin Salisbury

Panel Rank Ordered List: Energy Challenges for Complexity Science

Rank	Grant Reference	Principal Investigator	Holding Organisation	Grant Title	Value (£)
1.	EP/G059969/1	Dr RM Rylatt	De Montfort University	Complex Adaptive Systems, Cognitive Agents and Distributed Energy (CASCADE): a Complexity Science-Based Investigation into the Smart Grid Concept	1,082,860
2.	EP/G059101/1	Professor J Brodzki	University of Southampton	Preventing wide-area blackouts through adaptive islanding of transmission networks	294,028
2.	EP/G060169/1	Professor JW Bialek	University of Edinburgh	Preventing wide-area blackouts through adaptive islanding of transmission networks	808,222
4.	EP/G057737/1	Professor M Batty	University College London	SCALE (SMALL CHANGES LEAD TO LARGE EFFECTS): Changing Energy Costs in Transport and Location Policy	823,922
5.	EP/G05956X/1	Professor U Aickelin	University of Nottingham	Future Energy Decision Making for Cities - Can Complexity Science Rise to the Challenge?	263,879
5.	EP/G059780/1	Professor W F Gale	University of Leeds	Future Energy Decision Making for Cities - Can Complexity Science Rise to the Challenge?	853,127
7.	EP/G057338/1			Not Funded	
7.	EP/G058679/1			Not Funded	
7.	EP/G05925X/1			Not Funded	

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[Home](#) > [Calls For Proposals](#) > Complexity Science for the Real World - Call for Proposals

Complexity Science for the Real World – A Call for Proposals



Word Format (86 KB)



Adobe Portable Document Format (59 KB)

The EPSRC Cross-disciplinary Interfaces Programme invites proposals for internationally leading, cross-disciplinary programmes of research which will develop and apply the tools and techniques of complexity science for tackling major societal research challenges. Grants funded against this call may be up to six years long, and will provide funding to support a suite of related research activities focusing on one major theme. Up to £10 million has been earmarked for this targeted activity; it is anticipated that we will fund three or four proposals.

Further Information

We will be holding an information session on 28 April (venue and timings to be confirmed) to give potential applicants an opportunity to learn more about this call, to include:

- Background information – EPSRC activities in complexity science
- Vision and objectives of the call
- Eligibility and funding restrictions
- Assessment criteria

There will be an opportunity to ask any questions you might have about this activity.

If you would like to attend please register your interest by emailing complexity@epsrc.ac.uk by 17 April at the latest.

We would particularly like to encourage potential applicants from backgrounds in economics and the social sciences to attend this meeting.

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[Complexity-NET Pilot Call](#)

Complexity-NET Workshops

[Engaging With Social Science](#)

[European Landscapes](#)

Publications

Complexity-NET update leaflet now available online...

[Leaflet September 2008.pdf](#) 108KB

Complexity-NET is a European Network for the Coordination of Complexity Research and Training Activities

Complexity-NET is a group of European science and technology funding agencies, research councils and ministries all working together to create an environment that best enables the coordination of strategically planned national activities in Complexity Science and Complex Systems.

Find out more in '[About Complexity-NET](#)'

European Partners

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| Hungary | United Kingdom |
| Ireland | European Commission |

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More about [Complexity Science](#)


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Welcome

Welcome to The European Climate Forum (ECF).

ECF is a platform for joint studies and science-based stakeholder dialogue on climatic change. ECF brings together representatives of different parties concerned with the climate problem. The core activity of the Forum is to define and carry out joint studies; these provide arguments for long-term climate mitigation and adaptation policies ultimately leading toward a sustainable development path.

Upcoming events

ECF Conference 2009 - Financial Crisis and Climate Policy



A Science-Policy Debate

Ca' Foscari and European Center for Living Technology, Venice, Italy, April 4, 2009



DG Research Conference 2009

Sustainable Development: A Challenge for European Research

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ECF Conference 2009
2009-03-10
ECF Background Paper 1,
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Conclusions

Energy & Sustainability & Policy

are huge & urgent problems

Complex Systems Science

necessary if not sufficient

ASSYST & GSD & others

provide support structures

ESRC, EPSRC, NERC, EU-FET, Complexity-Net,

provide funding