

£2.5 million funding package for the Genomics Forum

ISSTI is pleased to report the approval of the second stage of funding for the ESRC Genomics Policy and Research Forum. Established in 2004 at the University of Edinburgh, the Genomics Forum has become an integral contributor to our STIS community. In January, the Economic and Social Research Council (ESRC) awarded £2.58 million to the Forum to foster social research on contemporary life science issues, from GM food to personalised genetic medicine.

Part of the ESRC Genomics Network (EGN), the Forum has quickly grown into a UK hub for social science knowledge exchange. As well as innovating new ways for scientists, policy-makers and the public to meet and debate how advances in medical research will affect our lives, the Forum works hard at connecting the EGN's world leading social science research to the UK's leading decision-makers.

Over the next 3 years, the Genomics Forum will run a programme of national

and international activities, specialist short courses, workshops, seminars, public lectures and artist and writer in residence programmes. The Forum will continue to take an active role in relevant science, book and film festivals around the UK including the Edinburgh International Book Festival - and other public engagement activities, and it has just launched its Bright Ideas programme providing an exciting opportunity for individuals to spend a period of time -

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Drosophila Cloud by Alistair Gentry, 2006-2007 artist in residence at the Genomics Forum

The China EU Information Technology Standards Research Partnership closes with top-level policy workshop

Robin Williams, Ian Graham, James Stewart and Xiaobai Shen organized the final policy research workshop for the China EU Information Technology Standards Research Partnership. João da Silva, former Director, DG INFSO Network and Communication Technologies, led a top-level discussion with leading participants from international research, standardization and industrial organizations.

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Interview with Steve Yearley

What is the Genomics Forum?

Steve: The Genomics Forum is the only ESRC centre of its kind. Part of the ESRC's Genomics Network (EGN) that includes Innogen (Edinburgh/Open), Egenis (Exeter), Cesagen (Lancaster/Cardiff), the Forum is not a traditional academic research centre; rather we are a unique knowledge outreach 'tool'. Using events and collaborative ventures, we work to connect the best of the EGN's, and the wider UK's, social science research to audiences that include the public, scientists and medical practitioners.

How does the Genomics Forum relate to the STIS community in Edinburgh?

Steve: Both myself and Dr Steve Sturdy, our Deputy Director, have STIS backgrounds so we appreciate the importance of contributing and supporting the STIS community in Edinburgh and beyond. More broadly, I would say the Forum uses a STIS approach to public engagement and wherever possible, we make any visiting research fellows, from natural scientists to policy-makers to lawyers, available to the STIS community.

Does the renewal reflect broader confidence in the Forum in particular and STS in general?

Steve: I hope our refunding illustrates the ESRC's confidence in our ability to be this unique hub for knowledge exchange. In my view, there is no doubt that STS offers a distinctive and important window onto fundamental ethical, social and legal aspects of contemporary life science.

What are the plans for the future?

Steve: One of the Forum's key goals is to work at a more international level over the next 3 years. This year, for example, we are organising a major conference in Paris with the OECD which will showcase the best of the UK's social science. This will be the first occasion that the OECD has taken a systematic look at what empirical social science can bring to their policy-making and experience. Developing this event's programme content and speakers will be a very exciting challenge for us.

We also plan to do some more work on epigenetics and its policy implications in the life and social sciences, as well as trying to attract a broader range of visitors to the Forum. To this end, we recently launched our 'Bright Ideas Programme' which is open to anyone concerned with the social dimensions of genomics, genetics or the life sciences, whether policy-makers, medical practitioners, artists, writers or natural scientists.



Prof. Steven Yearley is Director of the ESRC Genomics Policy & Research Forum 

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anything between a few days and two months working in residence with us. Steve Yearley, Director of the Forum, noted that 'perhaps as never before, the social and life sciences are entangled and intertwined. For example, UK regulators are currently considering what to do about direct-to-consumer genetic tests of dubious medical utility, health service managers are deciding whether to divert scarce funds towards screening and treatments "personalised" according to people's genetic make-up. Plant scientists are wondering what kinds of innovation may lead to more efficient sources of biofuels. And the new field of synthetic biology promises potentially huge environmental benefits, but also raises the spectre of unknown environmental risks.

'All of these projects have key social and economic dimensions, and many pose direct ethical challenges or raise new questions for regulation and legal control. In recent years the ESRC has invested many millions of pounds in research examining these socio-economic realities. We view it both as our responsibility, and as an exciting opportunity, to make a leading contribution to national discussions about the future applications of life-sciences technologies.'

In the news

Science, Technology and Innovation Studies have come a long way in the last 30 years. In a recent issue of *Chemistry World* former ISSTI student Helen Carmichael explores STIS' current recognition as a career option for science graduates.

Those who thrive across disciplines may want to take a closer look at Science and Technology Studies (STS), a discipline embracing critical approaches to science and technology, including philosophy, history, sociology and communication studies. Career and study options are increasingly available in the UK.

In 1921 University College London established the first UK university department dedicated to the history and philosophy of science. In 1993 specialists in science communication and science policy joined its ranks, and in 1996 it was re-branded as the Department of Science & Technology Studies. Well-regarded undergraduate and postgraduate courses are available.

Andrew Webster (former director of the ESRC's £5 million Innovative Health Technologies Programme) founded the Science & Technology Studies Unit (SATSU) in 1988 at the institution now known as Anglia Ruskin University in Cambridge. When Webster moved to the University of York, he brought SATSU with him in 1999. SATSU is internationally recognised for the sociology of the biosciences, mobilities, informatics and space, and science and technology governance, and offers both masters and PhD programmes. Manchester University, the Science Policy Research Unit at the University of Sussex, and the Open University also offer established courses.

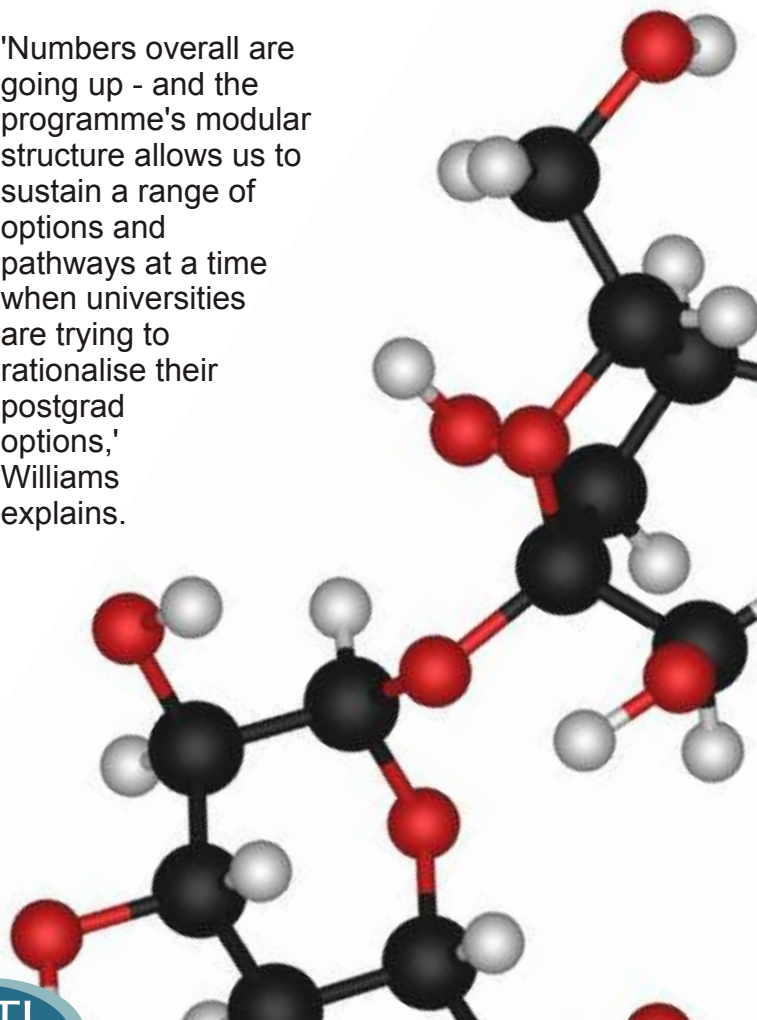
Robin Williams is director of the University of Edinburgh's Research Centre for Social Sciences and its Institute for the Study of Science, Technology and Innovation (ISSTI), which has just launched a science policy-focused MSc. He says that although there are a number of good postgraduate options, attempts to set up undergraduate training have been less successful in the UK. 'People come to us with a variety of concerns and goals. And these

shape their subsequent careers,' he explains. 'We recruit from many sources - scientists and social scientists alike.'

The new MSc in Science & Technology Policy & Management is particularly relevant to those wanting to transfer from science to social science or interdisciplinary interests, and is vocational, and policy and management orientated. Other course options lead to the established MSc in STS. In addition taught programmes there is also a research option for those who know they are going on to do a PhD.

The STPM MSc was created to increase vocationally oriented recruitment in anticipation of increasing demand. 'We envisaged it as being attractive to people interested in technology policymakers and regulators, and in technology management,' says Williams. This might include life scientists wanting to move into project management and innovation, as well as those moving into more explicitly science and society type work, such as science journalism, science communication and public engagement.

'Numbers overall are going up - and the programme's modular structure allows us to sustain a range of options and pathways at a time when universities are trying to rationalise their postgrad options,' Williams explains.



Growth in post-doctoral research in STS is evident - especially in the life science area. Another career path takes postgraduates into various jobs that span disciplinary boundaries, such as working for learned institutions like the Royal Society of Edinburgh. 'There is now a growing requirement for people able to conduct public engagement activities around science and technology and especially biomedicine - for which our graduates are well equipped,' Williams explains. 'This group merges into what might be described as science communication.'

Another path for those with STS training is consultancy, and a minority have gone into industry careers. The UCL careers office lists destinations as diverse as technical sales, teaching and becoming a journalist for the BBC's Today programme among its alumni.

A significant portion of ISSTI graduates is from overseas, including developing countries. China and other rapidly modernising economies are well represented, due to a recognised need for industrial and technology policymakers.

Williams cites the European public rejection of GMOs as something of a turning point for STS as a discipline, followed by public concerns about stem cells and biomedical research more generally. These have set the scene for responses to other new and emerging technologies, as well as to challenges such as climate change. As a result policy makers now recognise the need to address the social, economic, policy, ethical and other dimensions of science and technology.

Research funders - especially the Engineering and Physical Sciences Research Council (EPSRC) - also aim to promote research that cuts across the boundary between natural and social sciences. 'STS has been in the vanguard both in helping to promote interdisciplinary work, and in doing interdisciplinary research,' Williams says. New Centres of Excellence, modelled on those run in the US by the National Science Foundation (NSF), are cropping up internationally. These form interdisciplinary hubs, which bring technical and socio-economic researchers, as well as research communities and industrial and policy players, together.

In the UK, a very small stream of players

handles science and technology policy. However globally there is growing demand for expertise in this area.

People with hybrid skills - including, but not exclusively STS specialists - will find opportunities both at policymaking and implementation level, and in designing, managing and evaluating programmes.

Reprinted with the permission of *Chemistry World*, available online at <http://www.rsc.org/chemistryworld/Issues/2010/March/PolicyPull.asp>

In support of Helen Carmichael's contribution to the Newsletter, please make a donation to the Leukemia & Lymphoma Society of Canada at <http://my.e2rm.com/personalPage.aspx?registrationID=813480&langPref=en-CA>

Research

Stem Cells

Sarah Parry recently joined the Eurostemcell project (FP7), a European Consortium for communicating stem cell research that brings together major EU-funded stem cell projects, the European Clinical Research Infrastructure Network and other recognized European stem cell research centres. The aim of the Eurostemcell project is to create a coordinated platform for widespread dissemination of scientific knowledge spanning stem cell biology and regenerative medicine. It will provide a focal point for public engagement activities of European stem cell scientists. Sarah's role is to coordinate the analysis and evaluation of the public engagement activities along with providing input into their design and implementation.



Sarah Parry

For more information, please contact sarah.parry@ed.ac.uk

Greener Skies?

Graham Spinardi and Donald MacKenzie have been awarded a three year ESRC grant (£301,790) for a project entitled *'Revolution in the Sky? Commercial Airliner Technology and the Greening of Air Travel'*. This project will address the need for major environmental improvements in passenger aircraft technology. More fuel-efficient technologies include turboprop engines, flying wing airframes, and the use of lighter structural materials such as carbon fibre. However, these have either been introduced very slowly (carbon fibre), only used for certain short-haul routes (turboprop engines), or have not been used at all (flying wings).

This project will draw on interviews and archival research to understand the development of the dominant designs within aeronautic engineering and consequent neglect of more environmentally-friendly alternatives. It will address the issue of why certain technologies get 'locked-in' to incremental improvement whilst alternative approaches are neglected. This project will investigate the processes that favour incremental technological change over radical innovation, therefore providing insight into what policy options might overcome this resistance and thus speed up the transition to less polluting airliner technologies.

For further information, please contact Graham Spinardi
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Lessons for Interdisciplinarity



Catherine Lyall and Ann Bruce have been awarded £145,732 for a 12 month study of QUEST (Quantifying and Understanding the Earth SysTem), a flagship project of the UK Natural Environment Research Council. The study will take an action-oriented approach, exploring and evaluating ways to support and expand the UK's diverse and active community of Earth system scientists; foster and enrich the development of useful and usable interdisciplinary Earth system scientists; foster useful and usable interdisciplinary Earth system resources; and provide insights about the kinds of enabling infrastructure that support collaboration, information-sharing and leveraging of resources.

This award reinforces ISSTI's position as a centre for expertise in the conduct of interdisciplinary research at the interface between the social and natural sciences.

For more information, please contact Catherine Lyall c.lyall@ed.ac.uk

Community

Completed PhDs

Congratulations to our new graduates

Siân Beynon-Jones received her PhD for a thesis on *Expertise and Scottish Abortion Practice: Understanding Healthcare Professionals' Accounts*. Siân is now a postdoctoral researcher at the Science and Technology Studies Unit of the University of York.

Zoe Keddle completed her PhD in Politics with a thesis on *Communications in General Practice and the Domestication of ICT* co-supervised by a member of ISSTI's community.

Christine Grimm presented her dissertation *Inside a secret software lab: an ethnographic study of Software package development*, contributing to ISSTI's established tradition of research on information and communication technologies

Josipa Petrunic of the Science Studies Unit presented her thesis titled *Quaternion engagements and terrains of knowledge (1858-1880): A comparative social history of Peter Guthrie Tait and William Kingdon Clifford*. We are pleased to announce that Josipa is now working as a British Academy Postdoctoral Fellow at University College London.



Michele Mastroeni

ISSTI welcomes Michele Mastroeni. Michele is a Research Fellow working on the EU Target Project with Alessandro Rosiello. Prior to joining this project, he was an ESRC Research Fellow at Kingston University Business School investigating skills and research policy in the UK, and the management of knowledge workers in the pharmaceutical and IT sectors.

Before coming to the UK he was Senior Policy Advisor for the Ministry of Research and Innovation in Ontario, Canada, responsible for managing \$51 million of research funding. He holds a PhD in Political Science from the University of Toronto, where he has lectured in international relations and political science.

New member of staff

ISSTI welcomes Geraldine Debard as the new Technology and Innovation Studies subject group secretary. Geraldine joins ISSTI having previously worked at the University of Edinburgh as International Research Network Administrator at the Child & Adolescent Health Research Unit (CAHRU) and Postgraduate Administrator at Public Health Services in the Division of Community Health Services. Geraldine has a degree in English Studies from Jean Monnet University, Saint-Etienne, France.



Geraldine Debard

Awards

ISSTI congratulates Steven Yearley, Professor of the Sociology of Scientific Knowledge and Director of the ESRC Genomics Forum, for his election as Fellow of the Royal Society of Edinburgh.

Steve's Fellowship stands as a recognition of his interdisciplinary research on the social aspects of science and technology and his innovative work in engaging citizens with policy issues relating to the environmental and life sciences.



THE ROYAL
SOCIETY
OF EDINBURGH

Appointments

Catherine Lyall, Innogen Deputy Director, was appointed chair of the Scottish Funding Council's Knowledge into Public Policy Action Group and sits as an observer on the SFC Research and Knowledge Transfer Committee. In addition, Catherine has taken on the role of Director of Knowledge Exchange for the School of Social and Political Science of the University of Edinburgh.



Antonios Kaniadakis

Alumni

Antonios Kaniadakis (PhD, 2007) moved to the LSE, Information Systems & Innovation Group (ISIG) to work on a one-year project funded by the Association for Information Technology Trust. The project, coordinated by Chrisanthi Avgerou, involves an investigation of the role of information & communication technologies (ICT) in the financial crisis. As such, the project seeks to develop an information systems analysis of the financial crisis.

For more information, please contact: Antonios at A.Kaniadakis@lse.ac.uk

Innogen contributes to bio-engineering inquiry

Joyce Tait, Jane Calvert and Sarah Parry contributed to a parliamentary enquiry on bio-engineering. Convened by the House of Commons Science and Technology Committee, the Inquiry aims to examine how the UK can maintain a globally competitive position in emerging and existing bio-engineering research fields. The inquiry focuses on synthetic biology, stem cells and genetic modification in order to explore the issues of research, translation and regulation.

In their response to the inquiry, the Innogen researchers highlighted the interconnections between scientific and technological developments on the one hand and social, ethical, regulatory and public concerns on other. In the area of synthetic biology, for instance, they stressed the importance of early-stage decisions on ownership and sharing for the development of the field, and argued that the UK's internationally competitive position can only be maintained through investment in interdisciplinary research.

Their contribution also addressed the difficulty of the commercialisation of stem cells from two angles. As Innogen's studies on public engagement in stem cell research have shown,



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the ethical framings of commercialisation must be taken into account, particularly since potential commercial exploitation could stop individuals consenting to the donation of their tissue. The response to the inquiry also contended that translation to tissue-based therapies is unlikely because of the uncertain regulatory environment, modelled on pharmaceuticals, with long time-scales and costs.

In the area of GM crops, Innogen's response argued that the current European system for developing and regulating biological approaches to food crop production is seriously flawed, and that what is needed is a policy-led strategic approach to the development of an effective governance system, with a more flexible and robust design.

The report is available to download at <http://www.genomicsnetwork.ac.uk/innogen/publications/consultationresponses/title,22489,en.html>

Publications from members of ISSTI

STIS in pink

The work of Donald MacKenzie was featured in the *Financial Times* of 25 November 2009. Focusing on the recent financial crisis, Donald provided a succinct account of the role of different evaluation cultures in the use and proliferation of Collateralized Debt Obligations made up of Asset Backed Securities - regarded by many observers as the most 'toxic' assets in the system. Notably, Donald was also mentioned by *Prospect* magazine (16 December 2009) as one of the 25 brains who have best contributed to the public conversation on the financial turmoil, joining an illustrious list that includes Nobel laureates, internationally-renowned journalists and some of the most important figures in financial and economic regulation. Donald's work constitutes a clear demonstration of the thematic expansion of science, technology and innovation studies at Edinburgh and of the key role played by members of ISSTI's community in the creation and consolidation of new fields of research.



ISSTI Newsletter



Juan Pablo Pardo-Guerra

The ISSTI Newsletter has a new editor in 2010. Based at the Science Studies Unit, where he is completing his PhD in science and technology studies, Juan Pablo Pardo-Guerra will coordinate future editions of ISSTI's key publication. Along with this change, the ISSTI Newsletter is debuting a novel design, which we hope is to the liking of our growing readership.

The next deadline for submissions to the Newsletter is **20 May 2010**

For all editorial matters, Juan Pablo can be reached at pardo.guerra@ed.ac.uk

Recent events

China-EU Information Technology Standards Research Partnership Workshop, Brussels, February 2010

The increasing involvement of the People's Republic of China technology in Information Technology (IT) standardisation was the focus of a workshop (15th February 2010 CEN/CENELEC Meeting Centre, Brussels) organised by the China EU Information Technology Standards Research Partnership. Leading policymakers and experts reviewed the project's findings and their implications for standardisation and innovation strategies in China and Europe.

Professor Robin Williams, who coordinates this EU 7th Framework Programme-funded project, drew attention to the extraordinary complexity of these developments. 'In contrast to warnings from some US commentators about Chinese "Techno-Nationalism", China is not a monolith; her diverse standardisation initiatives were underpinned by many different goals. And their outcomes remain uncertain, subject to competing forces.' Things are changing very quickly he noted. 'China was initially motivated to develop indigenous technologies by concern about high royalty fees for foreign technologies, but is now seeking to become a global innovation player. It has had some striking success in developing and implementing new IT infrastructures including TD-SCDMA 3rd Generation Mobile Telephone and China's Mobile Multimedia Broadcasting (CMMB) standard. Though these are important developments, the longer-term consequences may be more significant: China is playing an increasing role in international standard setting bodies and the experiences she has acquired may pave the way for her involvement in the next generation of IT technologies and infrastructures.'

"By 2025 China could become the second world economic power. The centre of gravity of world production will move towards Asia. The combined economies of China, India and South Korea will weigh as much as the EU's."

João da Silva - Information Society and Media,
European Commission

Arthur Levin from the International Telecommunication Union noted that China is going up the 'standardisation ladder' used to assess involvement with ITU-TSB Standards work: the number of Chinese delegates in (ITU-T) Study Group meetings rose from 79 to 172 from 2008 to 2009 (the majority from Huawei and ZTE, China's leading multinational telecommunications equipment suppliers).





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João da Silva - former Director, Network and Communication Technologies, of the European Commission's Directorate General for Information Society introduced a discussion of issues and opportunities in ICT standardisation for the EU and China over the next ten years. 'We cannot make a linear extrapolation from the past to the future.' He noted, 'Existing organisational structures, developed for segregated networks, will be called into question by technological convergence and could hold back the development of next generation integrated infrastructures and services. To date most attention has been given to standardisation of IT infrastructures where global standards tend to emerge. However services (which account for a larger share of the market) exhibit very different dynamics; they change faster and requisite standardisation is mainly achieved through informal and local processes.'

Other presentations included:

Co-operation with China by Alexandre Dechaumont of CEN-CENELEC-ETSI

The Digital Video Broadcasting (DVB) Perspective by Carter Eltzroth of the DVB project

Project findings by Ian Graham and James Stewart of the University of Edinburgh

Huawei's perspective of standards by Wei Feng of Huawei

The full set of presentations is available at the project website: <http://www.china-eu-standards.org> where final conclusions from the project will become available in April 2010.



João da Silva

Also...

John Henry and Ivan Crozier of the Science Studies Unit contributed to the international workshop on the history of science, public health and psychiatry (*Historia de las Ciencias, de la Salud y la Psiquiatria*) at the Universidad de Antioquia, Colombia, 28-29 October 2009. Organised in conjunction with the Universidad Nacional de Colombia, sede Medellin, the workshop demonstrated the continuing importance of the Edinburgh school within the history and philosophy of science and medicine.

We are pleased to report that the **Scottish Socio-Technical Systems Network** held its inaugural meeting on 14 December 2009. The aim of the Network is to identify opportunities of collaboration across Scotland on socio-technical systems. To obtain more information, please contact Stuart Anderson at soa@inf.ed.ac.uk



Science Studies Unit Seminar Series

The Science Studies Unit holds seminars approximately once a month throughout the academic year. These PhD-run events are an informal and friendly forum within which early career researchers in STS and related disciplines can present their work.

PhD students in the SSU and the wider ISSTI community meet monthly to disseminate and discuss their

research. PhD students in other subject areas such as sociology, philosophy, history and law whose research is related to science and technology studies also participate in the seminar series. Senior researchers and other members of staff are also welcome to attend these events.

Previous seminars include:

20 November 2009 **Frederick Kellogg**, Sir Neil MacCormick Fellow, School of Law University of Edinburgh, 'Law and Science as Forms of Inquiry: Toward a Comparison of Legal and Scientific Knowledge'

11 December 2009 **Mhairi Aitken**, Science Studies Unit, University of Edinburgh, 'A Three-Dimensional View of Public Participation'

29 January 2010 **Tom Mathar**, the Institute for Europaeische Ethnologie, Humboldt University Berlin, 'Innovative health technologies in the everyday life'

10 February 2010 **Heather Wolfram**, Centre for the History of European Discourses at the University of Queensland in Brisbane, Australia, 'Crimes of Suggestion: An Untold Story in the History of the Psychology of Testimony?'

If you are interested in presenting a seminar or require any further information about the seminar series please contact **Isabel Fletcher** I.Fletcher@sms.ed.ac.uk

Understanding Technology



Graham Spinardi

On 21 January 2010, ISSTI's Graham Spinardi gave a lecture on 'The Real Star Wars: the Technology and Politics of the US Missile Ballistic Defence' at the National Museums of Scotland.

This event was part of the *Understanding Technology* series of public lectures, which present leading international research and ideas in the history, philosophy, politics and sociology of science and technology.

Forthcoming events

ICT: Africa's revolutionary tools for the 21st century?

22nd - 23rd April 2010

The Centre for African Studies (CAS) of the University of Edinburgh is organising an international conference on the role of information and communication technologies in Africa, contributing to the research conducted by numerous members of ISSTI's network.

New information and communication technologies (ICTs) have taken Africa by storm. By far the highest uptake has been of mobile phones, and while rates of internet uptake in Africa have been slower, in many countries technologies that enable mobile internet access are now beginning to enter the mass market. New applications, and in some cases new devices, are also being introduced, at times in partnership between technology companies and development agencies. ICT seemingly embraces every aspect of the development spectrum, and has led to increased academic interest in the Information and Communication Technology for Development, or ICTD/ICT4D discipline. At the same time, many Africans are using ICT especially mobile phones for less explicitly developmental, everyday communication that was otherwise impossible when landlines, the postal service or buses were the best options for communicating at a distance. Nowadays mobile phones are being used for more frequent communication, often over much shorter distances, and may prove to change interrelationships not least between state and non-state actors in unexpected ways. With this in mind, the Centre of African Studies is calling for papers that address the conference title, 'ICT: Africa's Revolutionary Tools for the 21st Century?'.

Given the broad range of uses to which ICT are put, the conference organisers welcome papers that relate to the use or potential of ICT in influencing change in Africa. Papers may wish to address issues of access, adoption, or impact, and may be framed in any discipline. Topics might include, but need not be restricted to: health (including veterinary science), education/learning, livelihoods and socio-economic interaction, finance (including money transfer), culture, media, governance, or any other aspect of empowerment. Papers covering other topics will also be considered, and both theory-based and empirical papers covering any region or country in sub-Saharan Africa are welcome.

The conference will take place at the University of Edinburgh's new state-of-the-art School of Informatics building. Funding will be available for a limited number of individuals presenting papers, with priority given to presenters based in Africa. Presented papers will be considered for inclusion in a peer-reviewed journal special edition. Attendance is limited and the number of prospective self-funded attendees who are not presenting papers may be restricted.

Those who are interested in learning more about this conference should send an email to African.Studies@ed.ac.uk, placing 'ICT' in the subject heading.

