

# **-ExICTe-** *Igniting enthusiasm for ICT*

## **ICT Programme Workshop**

Wednesday 17<sup>th</sup> February 2010

Macdonald Burlington Hotel, Birmingham

### **Executive Summary**

This workshop, organised by the ICT programme for EPSRC was attended by 44 members of the UK ICT research community. EPSRC received 82 Expressions of Interest to attend the workshop. Delegates were selected based on the Expression of Interest forms, to ensure a balanced representation of institutions and expertise<sup>[1]</sup>. This workshop was intended to bring together researchers from across the ICT research community that have an interest in raising the profile of ICT research. The event itself was seen to be both a valuable means of sharing first hand experiences and a necessary preliminary activity in raising the profile of ICT. The outputs of this workshop will feed directly into the ICT programme strategy and activities.

Key messages and observations taken from the ExICTe workshop are:

#### ***Motivators for igniting enthusiasm for ICT***

- Encouraging the next generation of students and researchers in the field.
- Directing policy so that ICT can be seen as a central enabler for many other priorities.

#### ***Barriers for igniting enthusiasm for ICT***

- The poor public profile of ICT. The general public have had a negative personal experience with ICT and/or ICT failures are made visible to the public by the media.
- There is an inadequate out of date school curriculum with ICT disciplines being seen as geeky subjects.
- Little credit is given to the research community for public engagement activities.

The research community also noted that they would value the opportunity of secondments of academics into government policy offices.

### **Next Steps**

This report will be published on the EPSRC website. The ICT programme will incorporate the 'ExICTe – Igniting enthusiasm for ICT' strand into future ICT programme activities. The ICT programme will also encourage advocacy in particular in longer larger grants. Shortly after this workshop, EPSRC made a contribution towards a Royal Society report on the status of computing in schools. In addition, potential future actions to address some of the issues raised by the workshop, where appropriate, will be considered by the ICT programme.

<sup>[1]</sup> The highest response from across the programme was observed from the computer science research community, thus this community had a higher presence at the workshop than other areas that fall within the ICT research community.

## **Motivations for the workshop**

The poor public profile and perception of ICT was highlighted as a serious issue for the Programme at each of the five ICT sub-programme Theme Days, held in 2009. Furthermore, the 2006 International Review raised concerns over the declining number of students coming into the area. Why is this? New ICT and the underpinning research have had a revolutionary impact on almost all aspects of life. Why is ICT not getting the recognition it deserves?

To answer these questions the ICT Programme launched:

### ***ExICTe - Igniting Enthusiasm for ICT***

## **Objectives of the workshop**

The aims of the Workshop were:

- To encourage a broader interest in raising the profile of ICT across the research community.
- To bring together researchers with interest in raising the profile of ICT.
- To generate ideas for activities to raise the profile of ICT and to galvanise action.

## **Selection of Delegates**

Delegates were invited to submit an expression of interest to attend the ExICTe workshop through an open call on the EPSRC website. All attendees of the 2009 ICT theme days were particularly encouraged to apply. The selection of accepted applicants was subsequently made by the ICT programme to ensure a balanced representation of institutions and expertise. Members of the ICT strategic advisory team were also invited to the workshop. A full list of attendees (including EPSRC staff) is given in Appendix 2.

## **ExICTe workshop**

The ICT programme organised a workshop to encourage a broader interest in raising the profile of ICT. The workshop is part of an on going community engagement strategy. The workshop itself involved a series of sessions all with a common theme around bringing together researchers with an interest in raising the profile of ICT. The sessions consisted of a setting the scene presentation by Professor Tom Rodden, the completion of a Motivators and Barriers to igniting enthusiasm for ICT chart, talks by guest speakers, Professors Dave Cliff, Alan Winfield, Heinz Wolff and Dr Paul Curzon and a networking session focusing on a particular audience group. The outputs from each session are listed below:

## **Outputs from the day**

### **Setting the scene**

Professor Tom Rodden opened the workshop with a video clip from 'The IT Crowd' to demonstrate how popular culture still perceives the ICT community, and invited the audience to consider if this is how they are perceived by others. Professor Rodden went on to describe a sample of public engagement activities that UK ICT academics currently run, emphasising their success. Using the iPhone as an example, Prof Rodden explained that the generalist audience do not see the underpinning ICT research, and in particular UK research, that goes into the development of such items. Prof Rodden challenged the audience that more needs to be done, especially in the current climate, all that can be done to demonstrate the impact of what we do is of utmost importance.

## **Session 1: Igniting Enthusiasm for ICT – Motivators and Barriers**

This exercise was designed to identify the motivators and barriers that the research community face in engagement with all types of audiences (public adults, schools, media, policy and government). Delegates were asked what they think are the motivators and barriers to igniting enthusiasm for ICT. The outputs from each of the 6 breakout groups are summarised as follows under the headings motivators and barriers. The raw poster outputs are shown in Annex1.

### ***MOTIVATORS***

There was a consistent view that one of the primary motivators for igniting enthusiasm for ICT is to encourage the next generation of both school children and students into the field and to ensure a future supply of researchers. It was felt that both the diverse nature of ICT together with it being a fun area to research that can help change the world needs to be highlighted to future generations. Another strong motivator as identified by the research community was that ICT research needs to be seen as a central enabler for many government priorities/initiatives. It was also felt that raising the profile of ICT should help educate the general public that ICT researchers don't just 'fix computers'. Some felt a key motivator in raising the profile of ICT is in the personal reward gained from the experience as well as raising awareness of individual subjects such as electrical engineering and computer science.

### ***BARRIERS***

There seemed to be a general agreement that one of the major barriers in raising the profile of ICT is the inadequate out of date school curriculum (especially with teachers not always being aware of the connection with Maths to other disciplines). ICT core disciplines are not currently seen as exciting subjects to study but are perceived as being geeky. There is also a lack of role models. There is a feeling within the research community that there is little credit/recognition from peers for being involved in public engagement activities with all focus going towards the RAE. The poor public profile of ICT was also noted as an obstacle in raising the profile of ICT. It does not help that ICT failures such as the loss of personal data are highlighted in the media rather than success stories. The use of the term 'ICT' was also noted as a barrier with there being much confusion for the general public, schools and media over what this actually means. There was also a general feeling that people in society today have adapted to ICT technologies and that they don't feel the need to understand how it works.

## **Session 2: Presentations by Guest Speakers**

Professors Dave Cliff, Alan Winfield, Heinz Wolff and Dr Paul Curzon each gave a short talk. Over the course of the 4 talks the following themes (amongst others) were covered:

- Engaging with schools to excite next generation
- Engaging with the public to influence research agenda
- Getting your research into the media
- communicating your research to non-academic audiences

### ***Summary of talks***

- Professor Dave Cliff, University of Bristol, covered the importance of communicating your research to the different audiences (public adults, schools, media, policy and government) and highlighted some tips and techniques that he has learned over the years. Professor Cliff also reiterated the importance of the ICT community working together to improve the profile of ICT research in terms its impact and influence. There are difficult times ahead, in terms of funding, and the ICT community should be prepared to act before it has to react.

- Professor Alan Winfield, University of the West of England, (an [EPSRC Senior Media Fellow](#) ) covered the public engagement project that he has led for the past 3 years entitled "Walking with Robots" <http://www.walkingwithrobots.org/>. Alan noted that the project has either organised or participated in around 200 different events and activities around the UK, educating and entertaining young children and their families, encouraging teenage children to think about what impact robots might have in their lifetimes and engaging adults in serious debates about the ethical questions raised by intelligent robots in society.
- Dr Paul Curzon covered engaging with schools. Paul introduced cs4fn, [www.cs4fn.org](http://www.cs4fn.org), a global campaign to enthuse school children about computer science through a twice yearly magazine, a webzine, school and festival talks and free books to support talks. It was noted that the website received greater than 15million hits last year. Paul emphasised that their recipe for success included having fun, breaking subject boundaries and that the physical nature of a magazine and booklet is vital.
- Professor Heinz Wolff began with a controversial opening to his talk, challenging the ICT community to consider the ethical issues associated with ICT research in terms of ICT research producing so many gadgets that are not necessary needed in life. Following this, Professor Wolff summarised his long and successful career in science communication, highlighting the importance of being a likable character to ensure popularity. Professor Wolff then took the audience through an example of how to explain how a chromatogram works to a lay audience.

Appendix 3 gives a short profile on each of the guest speakers.

## **Session 3: Parallel group discussions**

This exercise was designed to allow the attendees to network and to compare best practise with others that have a shared interest in engaging with a particular audience group. Delegates were asked prior to the workshop to select two from the following discussion groups that they would like to participate in:

- Engaging with schools
- Getting your research into the media
- Influencing policy
- Engaging with the public

Each discussion group was asked to suggest an idea that they would like to communicate to their particular audience group. They were then asked to capture the process by which they would take that idea to their target audience. Each discussion was led by a mentor. The outputs from each of the breakout groups are summarised as follows under the headings; Engaging with schools, Getting your research into the media, Influencing policy and Engaging with the public. The raw poster outputs are shown in Annex2.

### **Engaging with schools**

#### **Group 1**

There was a discussion based around how to encourage more teaching of computer science within schools, and how to make it fun. It was felt that the right amount of "fun" can create interest and intrigue for further independent exploration of knowledge. An idea that was considered was the creation of an online repository of teaching resources "kite-marked" by ICT researchers. It was suggested that this could be done in collaboration with a pool of teachers that could rate the resources. Along with teachers the audiences included parents and teacher training colleges.

#### **Group 2**

There was a discussion around a range of possible ideas for schools including twinning schools via ICT, engaging with curriculum and exam boards, students going into a local University as part of a project and a programme of education for ICT teachers. The group then explored this final idea further, suggesting possible actions. These included providing an incentive to training in resources, have a CS mentor for a teacher, teachers passing on their knowledge to others to maximise investment, an open sources store of teaching resources and testing ideas through research projects of teachers under training. The main audience would be teachers, but the benefits would also need to be demonstrated to others including school governors, heads and local education authorities.

### **Getting your research into the media**

#### **Group1**

There was a discussion on ID cards and how to generate a public debate on the issues involved. Ideas such as, how to gain journalists attention, raising media profile and provoke public interest in a subject were also discussed.

#### **Group2**

There was a general feeling that it isn't easy to get research and researchers into the media, with the biggest difficulty being knowing where to begin. There was great variety in opinion of University Press Offices - some are amazing and really proactive whilst some are apparently to be avoided. Other options such as EPSRC Press Office and the Science Media Centre were put forward as alternative/additional sources of help. Much of the discussion revolved around building the right connections, from Press Offices to TV producers, and making sure you have sufficient training.

## **Influencing policy**

### **Group1**

Professor Alan Bundy initiated the discussions by asking for suggestions of policies that participants would like to influence. Government procurement of IT services was the agreed topic. Participants agreed that the main issue was that there is not one voice of the community making it difficult to agree a common position. The introduction of standards and certification, leading to chartered status was agreed to be a useful starting point for the community. The learned societies have a role to play in developing these standards and maintaining them. Participants agreed that they were not aware of many current routes to influence policy. Few examples given included Select Committees and consultations, however, it was difficult to know how influential any input could be. An opportunity to embed scholars in a Government Department to enable a two-way flow of information was endorsed.

### **Group2**

The group acknowledged their lack of knowledge in this area and welcomed any efforts by EPSRC to improve this. Participants agreed the importance of this especially when considering funding decisions, demonstrating impact was essential for the community to secure the future. A key issue was who to target - civil servants or politicians, both of which are predominantly non-scientists and may not know that an ICT perspective is needed. Participants with experience of the Scottish parliament did not feel as disconnected from politics as those dealing directly with Westminster.

## **Engaging with the public**

### **Group1**

There was a discussion around marketing and launching a new technology and how the public could be involved. The group discussed different types of public engagement that would be useful for technology development. For example, early (upstream) public involvement with input into the research at the outset, asking the public what they want from a new technology and creating public ambassadors. Engaging the public through science fairs, exhibits, and the use of theatre was also discussed.

### **Group2**

This group focused on engagement between ICT and the arts, in many cases large artworks and sculptures in public places. Part of the discussion focussed on how to engage a transient audience (shoppers, pedestrians etc) and where to draw the line between something that interested or amused people and something that engaged them about the science behind the artwork. Links to more information, through a website or through a phone, were discussed as a way to increase the depth of engagement and the understanding of the research (it was acknowledged that these have limitations). A key point made was that ICT researchers should not be doing these kinds of projects on their own but should be liaising with artists and the people who own the space (e.g. local authorities).

## Close of workshop and additional suggestions from attendees

Following on from the influencing policy group discussions, the following two programs were highlighted by members of the research community as example schemes in which researchers can help influence policy (note one is a US scheme).

<http://www.osa.org/news/congressionalfellowsips/>

<http://royalsociety.org/Royal-Society-Pairing-Scheme/>

At the close of the workshop delegates were asked to keep EPSRC informed of any activities that they get involved in either as a result of or in relation to the ExICTe workshop.

## Activities since the ExICTe workshop

Since the ExICTe workshop took place, the ICT programme has made a contribution towards a Royal Society report on the status of computing in schools.

## Next Steps and future activities

Incorporate the *ExICTe – Igniting enthusiasm for ICT* strand into future ICT programme activities. For example, we will build this into future actions and strategies and encourage advocacy in Longer Larger Grants within the programme.

## In-situ workshop evaluation

At the end of the workshop delegates were encourage to complete an evaluation of the day. Delegates were asked to write comments down for 1) What they think worked well 2) What didn't work so well and 3) What to take forward.

## Combined delegate evaluation from workshop

### What Worked Well?

- Excellent presentations, very helpful overall thanks
- Presentations
- Sub-groupings
- Sharing first-hand experiences
- Mutual support
- Necessary –preliminary –activity
- Talking to others
- Debate
- Useful discussions
- Presentations in am

### What Didn't Work so Well?

- Unfocussed discussion
- Unclear outcomes
- No objectives or decisions
- Personal vs Role objectives/motivations
- Didn't circulate EoIs
- Bickering about the term ICT

### What to take Forward?

- Secondment of academics to Government policy offices
- Kite-marked teaching resource collection for schools
- Association of computing school teachers

- Links with ICT research in China/India/Russia etc



## Appendix 1: Objectives and Agenda

### Objectives

The poor public profile and perception of ICT was highlighted as a serious issue for the Programme at each of the five ICT sub-programme Theme Days, held in 2009. Furthermore, the 2006 International Review raised concerns over the declining number of students coming into the area.

Why is this? New ICT and the underpinning research have had a revolutionary impact on almost all aspects of life. Why is ICT not getting the recognition it deserves?

To answer these questions the ICT Programme launched:

#### **ExICTe - Igniting Enthusiasm for ICT**

The objectives of the Workshop are:

- To highlight this issue to encourage a broader interest in raising the profile of ICT across the research community;
- To bring together researchers with interest in raising the profile of ICT;
- To generate ideas for activities to raise the profile of ICT and to galvanise action.

### Agenda

The workshop was held on Wednesday the 17<sup>th</sup> of February at The Macdonald Burlington Hotel, Birmingham. The agenda was as follows:

10.00-10.30	<b>Registration/Coffee</b>
10.30-11.00	<b>Welcome – Liam Blackwell</b> <b>Setting the Scene – Professor Tom Rodden</b>
11.00-11.30	<b>Session 1 - 'Igniting enthusiasm for ICT – Motivators &amp; Barriers to Engagement'</b>
11.30-13.00	<b>Session 2 – Presentations</b> <b>Professor Alan Winfield</b> <b>Professor Dave Cliff</b> <b>Dr Paul Curzon</b> <b>Professor Heinz Wolff</b>
13.00-14.00	<b>Lunch</b>
14.00- 15.30	<b>Session 3 – Parallel group sessions</b> <b>Engaging with schools</b> <b>Media</b> <b>Influencing policy</b> <b>Engaging with the public</b>
15.30-16.00	<b>Networking, feedback with Tea/Coffee</b>
16.00-16.15	<b>Close/Thanks</b>

## Appendix 2: Delegate List

Professor	David	Arnold	University of Brighton
Professor	Asen	Asenov	University of Glasgow
Professor	Jim	Austin	University of York
Dr	Liam	Blackwell	EPSRC
Dr	Marina	Bloj	University of Bradford
Professor	Roger	Boyle	University of Leeds
Dr	John	Brooke	University of Manchester
Professor	Andrew	Brown	University of Southampton
Professor	Alan	Bundy	University of Edinburgh
Dr	Sharon	Burns	EPSRC
Dr	David	Carey	University of Surrey
Dr	Kirsten	Cater	University of Bristol
Professor	Jonathon	Chambers	Loughborough University
Professor	Dave	Cliff	University of Bristol
Dr	Tom	Crick	University of Wales Institute, Cardiff
Dr	Roy	Crole	University of Leicester
Dr	Paul	Curzon	Queen Mary, University of London
Dr	Quintin	Cutts	University of Glasgow
Professor	John	Darlington	Imperial College
Dr	Aniko	Ekart	Aston University
Dr	Parisa	Eslambolchilar	Swansea University
Professor	Terrence	Fernando	University of Salford
Professor	Michael	Fisher	University of Liverpool
Mr	Gary	Graham	Manchester Business School
Professor	Mark	Harman	Kings College London
Dr	Tarek	Hassan	Loughborough University
Mr	Tom	Headen	EPSRC
Dr	Tim	Jackson	University of Birmingham
Professor	Stephen	Jarvis	University of Warwick
Dr	Ray	Mathias	Consultant
Dr	Carol	McAnally	EPSRC
Dr	Neil	McBride	De Montfort University
Professor	Tom	Melham	University of Oxford
Professor	Greg	Michaelson	Heriot-Watt University
Dr	Kate	Miller	EPSRC
Professor	John	Nelson	University of Aberdeen
Professor	Jon	Oberlander	University of Edinburgh
Miss	Dolly	Parkinson	EPSRC
Dr	M.	Rajarajan	City University London
Ms	Clare	Reddington	IShed/The Pervasive Media Studio
Professor	Tom	Rodden	University of Nottingham
Dr	Siraj	Shaikh	Coventry University
Dr	Nigel	Thomas	Newcastle University
Professor	Anne	Trefethen	University of Oxford
Dr	Lorraine	Warren	University of Southampton
Professor	Kevin	Warwick	Reading University
Professor	Jon	Whittle	Lancaster University
Professor	Alan	Winfield	University of the West of England
Professor	Heinz	Wolff	Brunel University
Mr	Kirk	Woolford	University of Sussex
Professor	Song	Yan	University of Bedfordshire

## **Appendix 3: Speaker Profiles**

### **Professor Alan Winfield**

Alan Winfield is professor of electronic engineering at the University of the West of England, Bristol. Alan co-founded the Bristol Robotics Laboratory and his current research is focussed on the engineering and scientific applications of Swarm Intelligence. His work on Swarm Robotics is concerned with algorithms, analysis and modelling for future real-world applications. At the same time Alan is deeply interested in Swarm Robotics as a working model for the study of emergence, self-organisation and culture.

For the past three years Alan has led public engagement project Walking with Robots, a project that has taken the UK's intelligent robotics research out of research labs and into public spaces, science centres, science festivals and schools. The project has either organised or participated in around 200 different events and activities around the UK, educating and entertaining young children and their families, encouraging teenage children to think about what impact robots might have in their lifetimes and engaging adults in serious debates about the ethical questions raised by intelligent robots in society.

Robotics is no longer a narrow engineering discipline. Modern robotics research is highly multi-disciplinary, drawing upon expertise as diverse as biochemistry, neuroscience, ethology, psychology, complexity science and philosophy. Nor are robotics issues of concern only to scientists and engineers. The predicted revolution in intelligent robotics will see robots become as ubiquitous in 25 years as personal computers are now. As Senior Media Fellow Alan will focus on intelligent robots in science and society. A theme that will explain and interpret the very rapid advances in intelligent robotics and, equally importantly, explore the wider ethical and societal implications of those advances.

### **Dr Paul Curzon**

Paul Curzon is a Reader at Queen Mary, University of London. He runs the EPSRC funded "Computer Science for Fun" ([www.cs4fn.org](http://www.cs4fn.org)) project, enthusing school students about computer science. His research concerns human error and interactive medical device design which is funded by an EPSRC programme grant (CHI+MED).

### **Professor Dave Cliff**

Dave Cliff is a professor of computer science at the University of Bristol, from where he directs the £10m EPSRC-funded Large-Scale Complex IT Systems Initiative ([www.lscits.org](http://www.lscits.org)). He's previously held faculty positions at the universities of Sussex and Southampton in the UK, and at MIT in the USA; and spent seven years working in industry -- initially for Hewlett-Packard Labs, and then for Deutsche Bank in the City of London. He's given over 150 invited external keynotes and lectures, many of which have been "public engagement" to non-technical audiences. In 1993 he was the Isambard Kingdom Brunel Award Lecturer at the annual summer meeting of what is now known as the British Science Association. After that, he was a "Schools' Science Lecturer" several times at the Royal Institution of Great Britain, and he's been an invited speaker at the Cheltenham Science Festival three times. He's done an awful lot of media interviews, both print and broadcast. In 2008 he was chosen by the British Computer Society (BCS) to give a tour of lectures for 14-18year-olds to celebrate the 50th year of the BCS.

Currently he is the only computer scientist employed by GCSE Science Live to talk to large audiences (several hundred at a time) of GCSE-level students about future issues in computer science and engineering – in 2009 he lectured on the future of computing to over 8,000 school kids.

**Professor H.S.Wolff BSc FBES FIEE FIBiol FRCP(hon) FRSA**

Prof. Heinz Wolff graduated in Physiology and Physics and probably was the first individual to call himself a "Bioengineer". He has worked as the director of Bioengineering Divisions, for the MRC, at both the National Institute for Medical Research, and the Clinical Research Centre. Whilst serving as the UK delegate on the EC Standing Committee on Bio-Medical Engineering Research, he coined the phrase "Tools for Living", to describe any technology based device intended to enhance the quality of life of anybody suffering from a disability. He also served as the chairman of a variety of committees at the European Space Agency to make the policy for the scientific use of the microgravity conditions on board of orbiting spacecraft. In 1983 he founded the self-financing, Institute for Bioengineering at Brunel University, which he directed until 1995. He is now 81.

He leads a double life, sharing his professorial duties with those of a scientific educator and entertainer on Radio and TV (Great Egg Race and that sort of thing) and as a prolific lecturer. He is now Emeritus Professor of Bioengineering at Brunel University leading a team concerned with technological innovation, which will have an impact on major social problems.

## Annex 1: Outputs from Session 1 – Motivators and barriers to igniting enthusiasm for ICT

Group	Motivators	Barriers
1	<ul style="list-style-type: none"> <li>• Technology that people can develop themselves (e.g. iPod)</li> <li>• Financial benefits of ICT in Society</li> <li>• Computational thinking is pervasive – interdisciplinary nature</li> <li>• People have a real interest in ICT, even if they do not know it</li> <li>• Diverse nature of ICT</li> <li>• Creative nature</li> <li>• Showcasing ICT Research</li> <li>• Easy to use interfaces enable wider participation – widening demographic</li> <li>• Assisting in governmental regulation of ICT</li> <li>• Assisting government in procurement policy</li> </ul>	<ul style="list-style-type: none"> <li>• Intangible nature of software</li> <li>• Complexity</li> <li>• ICT community do not get the credit for applied technology</li> <li>• Perception that ICT does not work – failures in media</li> <li>• Myth of digital nature</li> <li>• ICT requires a particular kind of thinking</li> <li>• Invisibility as ubiquitous</li> <li>• People’s personal experience of negativity with ICT</li> <li>• Legality of ICT as a communication method</li> <li>• Core discipline can be seen as boring</li> <li>• Silo structure of universities</li> <li>• Lack of trust in ICT and universities</li> <li>• ICT skills in schools can put pupils off</li> </ul>

Group	Motivators	Barriers
2	<p><b>Next Generation:</b></p> <ul style="list-style-type: none"> <li>• Enthusiasm reflected back - reward</li> <li>• Future Investment</li> <li>• New challenges</li> </ul> <p><b>Media:</b></p> <ul style="list-style-type: none"> <li>• Influence public/policy</li> <li>• Opportunity of direct access through media</li> <li>• Exposure</li> </ul> <p><b>Public:</b></p> <ul style="list-style-type: none"> <li>• Turn concern to votes – lever policy</li> <li>• Encourage next generation</li> <li>• Awareness of limitations (informed debate!)</li> <li>• They are excited...</li> <li>• Adoption – building new paradigms of use</li> </ul> <p><b>Policy:</b></p> <ul style="list-style-type: none"> <li>• Money (resource) priorities</li> <li>• To be seen as central enabler – for many other priorities</li> <li>• Long term investment</li> </ul>	<p><b>Next Generation:</b></p> <ul style="list-style-type: none"> <li>• It’s not all maths – essential?</li> <li>• But it is useful</li> <li>• Unsolved hard problems</li> <li>• Term “ICT”</li> </ul> <p><b>Media:</b></p> <ul style="list-style-type: none"> <li>• Has to be visual</li> <li>• Research does not work yet</li> <li>• “Tall poppy”</li> <li>• Term “ICT”</li> </ul> <p><b>Public:</b></p> <ul style="list-style-type: none"> <li>• Hard</li> <li>• Requires new and additional effort to tell story</li> <li>• ... but they do not know it is ICT</li> <li>• ICT is boring</li> <li>• Term “ICT”</li> </ul> <p><b>Policy:</b></p> <ul style="list-style-type: none"> <li>• They never respond</li> <li>• No threat</li> <li>• Computers get the blame – not politicians/systems/people</li> </ul>

- Quality of Life – social benefits
- “not funded here” – funders (UK) do not (cannot) give credit for e.g. EU funded work on Engagement
- Term “ICT”

**Group**

**Motivators**

**Barriers**

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| <ul style="list-style-type: none"> <li>• Fundamental to Science</li> <li>• Undergraduate Ambassadors</li> <li>• It’s everywhere</li> <li>• Fear</li> <li>• Untapped potential</li> <li>• Untapped stem imperative</li> <li>• Window of opportunity</li> <li>• Pool of teachers who would like to teach computer science</li> <li>• Pool of young people who want to learn computer science</li> <li>• Media</li> </ul> | <ul style="list-style-type: none"> <li>• No framework in research funding to force engagement</li> <li>• Emphasis on tools</li> <li>• Many IT disasters</li> <li>• Inadequate school curriculum</li> <li>• ICT is for geeks</li> <li>• Focus on RAE</li> <li>• Marginalised by political establishment</li> <li>• Highly abstract</li> <li>• Teachers not always aware of connection with Maths</li> <li>• No (little) industry</li> </ul> |
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**Group**

**Motivators**

**Barriers**

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| <ul style="list-style-type: none"> <li>• Changing the world</li> <li>• Publicising/introducing role models</li> <li>• Inter-disciplinary</li> <li>• Programming Applications</li> <li>• Fun</li> <li>• How stuff works?</li> <li>• Policy decisions</li> <li>• Hands on practice – interactivity</li> <li>• Could be a good impact study case</li> <li>• Seamless integration</li> <li>• Problem solving challenges</li> <li>• Understand new ‘cool’ technology</li> </ul> | <ul style="list-style-type: none"> <li>• Career path</li> <li>• Not a core activity</li> <li>• Lack of role models</li> <li>• Central government do not see a problem</li> <li>• Not enough time</li> <li>• It is terrifying (or not)</li> <li>• Communication frustration</li> <li>• Science understanding education</li> <li>• Academic snobbery</li> <li>• Quality control – curriculum</li> <li>• Lack of academic reward/recognition</li> </ul> |
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**Group**

**Motivators**

**Barriers**

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| <ul style="list-style-type: none"> <li>• Getting more students to study computer science at school and degree</li> <li>• Get the next generation of computer scientists</li> <li>• Gaining ‘permission’ to use/deploy technologies</li> <li>• So the public understand what we do and that we do not just fix computers</li> <li>• Public accountability</li> <li>• Web 2.0 – enabling people to make and share content online</li> <li>• Wealth creation</li> <li>• Possible commercialisation</li> </ul> | <ul style="list-style-type: none"> <li>• Public awareness</li> <li>• Poor, out of date curricula which drives teaching</li> <li>• ICT vs CS misconceptions</li> <li>• “ICT” lessons in school are deathly, deathly dull</li> <li>• Bad teachers</li> <li>• Seen as a geeky subject</li> <li>• ICT is transparent to most users</li> <li>• Poor school syllabus</li> <li>• There is more to ICT than MS Office skills</li> <li>• Total failure of leadership by BCS</li> <li>• What is computer science?</li> <li>• Touches everything, but what is the core intersection that is ICT</li> </ul> |
|--|---|

- Empowering the users, make them aware that they can affect/change/play with the black box
- Early stage public engagement makes for better products/designs/research
- That “what will they come up with next” feeling
- Wealth of success stories
- Moving to identifying problems – ICT becoming problem solving
- Technology innovation
- To ensure a stream of good PhD students
- Formalised academic research does not (?) interface with informal/coding/hacking research
- Do we understand our audience(s) and their issues?
- Not seen as a pathway to management
- Security and Privacy
- People have adapted to ICT – they do not feel they NEED to know how it works
- You do not need to know how technology works if it has been implemented well
- The sexy/novel part of computing is not publicly visible
- Failures, however are made visible to the public
- The interdisciplinary nature of computer science is not visible

## Group

## Motivators

6

- Future resource
- Financial – more students
- Directing policy
- Personal Reward
- Writing impact statements
- Increase awareness of electronic engineering
- A nice feeling inside
- It’s what I took the job for
- Maintaining UK as a world leading force in technology
- Justification of your job
- Future recruitment
- Convey the excitement
- So you do not feel ‘ashamed’ of what you do!

## Barriers

- Time/Money/Resources
- Time – it takes time and money
- Funding partners
- Lack of know-how
- Incomprehension
- Writing impact statements
- School curricula are a mess - Maths
- Docs researchers have the social skills
- I work in software – hard to show/explain
- People distrust new technology (?)
- Do you get promoted for this
- Too much credit for academic publishing, little credit for public engagement – RAE/REF
- Popular press
- CS vs ICT including HMG

## **Annex 2: Poster outputs from session 3 – parallel group discussions**

### **Getting your research into the media**

#### Group 1

- National ID cards:
  - more textured public debate
  - greater exploration of the risks
  - issues around privacy, social responsibility and security aspects
  - make a documentary
  - target newspapers
  - not a moral panic story
  - issue of taxpayers being misled
- need a story/hook/something timely – to launch idea
- headline – the hidden cost, something to grab the attention, a simple idea to draw in – or an incident, technology related issue
- use blogs/social media/You-tube
- use the right visual image – capture journalists interests
- use personal relationships with media/journalists
- get to know science media centre
- organise press briefings – great for networking with journalists
- network of festival – good place to meet journalists
- dramatise the problem
  - write a play
  - submit to local drama groups
  - Partner with university school of drama – part of course?

#### Group 2

- How to get a journalist to cover your work
  - have a blog/website with accessible information about research
  - talk to you University Press Office – generate a relationship (but write your own copy)
  - contact EPSRC and other funders
  - develop a relationship with the Science Media Centre (SMC) – press briefings
- Getting media training
  - PE/Communications as part of a research grant (PCTF)
  - University may offer training as part of professional development
- Getting a TV programme made
  - develop a relationship with a producer
  - consider the 'story' behind the research
- read the credits of a programme you like and contact them

### **Influencing policy**

#### Group 1

- Government procurement – large IT systems
- science seminar for government
- background research – who to talk to, e.g. Lord Drayson
- Public debate, e.g. climate change – social network
- highlight impact on voters
- respond to consultations – ICT tracks
- debates in learned societies
- champions within and outside
- embed scholars within government departments – post, treasury
- talk to multiple parties
- select committee – submit evidence
- "network"



- target problems
- chartered engineer with legal standing
- sponsor time in government (US)
- represent consensus – learned societies
- certified toolsets
- measure and evaluate security of products
- national safety standards for ICT
- objective status of organisation

### *Group 2*

- ICT as a research priority
- role of ICT in product
- impact examples – social and economic
- clear message consensus
- united in message(s)
- scientists to work with science policy units to deliver messages
- getting language right
- networks and networking
- work with learned societies
- policy makers do not register importance of ICT base
- Civil servants not scientists?
- Politicians

## **Engaging with the public**

### *Group 1*

A gadget to allow:

- supermarket shopping
- reminder to take pills
- send flowers to sister
- ICT gateway to your home companion – all in one single gateway

Engage older people with ICT

- also engaging with rest to accept this way of operating
- raising awareness of need for this
- bringing public on board to new technology
- upstream PE needed
- input to research at outset
- ask public what is needed/wanted
- early public buy in
- Pilot project – low cost, use enthusiasts
- Marketing
- touring
- exhibitions
- Avon lady model – a friendly face
- celebrity face
- Funding
- TSB
- start ups
- where to get advice
- Who? – find a partner
- Do we really need to engage the public – in some cases not appropriate
- Smaller scale?
- can generate a media storm unexpectedly
- science fair
- theatre/mime

- work with a group of the public throughout research – create ambassadors

#### Audience

- Older people
- Carers
- Social services
- Housebound people
- Stakeholders
- Supermarkets
- High street stores

#### **Group 2**

ICT as a way to facilitate the understanding of sustainability

- public internet cloud (not for profit)
- knitting and cooking
- lab visits

Engagement between ICT and the arts

Actions

- talk to advertisers
- partnership with artists
- get people who own the space on board e.g. local authority, shopping centre owner
- talk with companies who can produce the outputs

Audience

- travellers – airports and stations
- fellow researchers – especially interdisciplinary
- minority groups
- shoppers
- gallery visitors
- teenagers

## Engaging with schools

Group	Ideas	Action	Audience
1	<ul style="list-style-type: none"> <li>● low costs</li> <li>● portable</li> <li>● teaching</li> <li>● resources</li> <li>● create 'kite mark' for resources</li> <li>● interesting</li> <li>● important</li> <li>● right amount of fun and create further exploration of knowledge</li> <li>● Fun – interest and intrigue</li> </ul>	<ul style="list-style-type: none"> <li>● how to do cheaply</li> <li>● work in collaboration with teachers</li> <li>● credibility of 'kite mark' ownership</li> <li>● pool of testing teachers</li> <li>● star rankings</li> <li>● KS3 curriculum less defined, therefore can have greater input</li> <li>● editorial control</li> <li>● testing and evaluation not quick</li> <li>● relevance in other subjects</li> <li>● multidisciplinary – tag-able content</li> <li>● making teachers aware</li> <li>● challenge around longevity of examples e.g. predictive texting to teach ML</li> <li>● build up of ideas in sequence</li> <li>● Why learn?               <ol style="list-style-type: none"> <li>i. fun</li> <li>ii. informed citizen</li> <li>iii. what to do when things go wrong</li> <li>iv. challenges</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>● parent participation</li> <li>● teacher training colleges</li> <li>● getting computer study students in schools</li> <li>● computing at schools</li> <li>● education colleges</li> <li>● CSTA</li> </ul>
2	<ul style="list-style-type: none"> <li>● programme of education for ICT teachers               <ul style="list-style-type: none"> <li>○ realise range of possibilities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● provide incentive – resources</li> <li>● relatively small time investment</li> <li>● going into schools, engaging with</li> </ul>	<ul style="list-style-type: none"> <li>● Teachers – maths, primary, CS, ICT, secondary</li> <li>● demonstrate business benefit, School</li> </ul>

- bring excitement to ICT
  - inspire teachers
  - informing maths teachers of connections to computer science
- twinning schools via ICT e.g. using social networking, video conferencing
- local school students using university as part of an extended project
- engaging with curriculum and exam boards (top down)
- engaging with social websites (bottom up) – getting the right audience
- novelty important
- security important
- Web 2.0
- mobile messaging technology
- facilitate through start-up
- twinning schools
- CS mentor for each tutor
- teachers teaching teachers to maximise investment
- accreditation, CPD
- store of teaching resources – open source
- engaging teachers in developing resources
- find out what is already there
- formative evaluation, speak to teachers early
- baseline analysis – evaluation
- research projects for training teachers – PGCE, M.Ed – testing of idea
- use existing hardware in schools
- difference between schools
- take off screen completely
- computational thinking
- competitions, diaries, video conferences, teacher swaps
- set problem where schools have to work together
- continual testing and evaluation
- reconciliation through teachers, advocates and save money

## Expressions of Interest forms:

<b>Name:</b> David Arnold	<b>Institution/Organisation:</b> University of Brighton
<b>e-mail:</b> D.Arnold@brighton.ac.uk	
<b>1. Brief summary of your track record</b> BA (MA Cantab) in Engineering and Computer Science (1972), Cambridge PhD in Architecture (1978) focussing on 3D modelling, sunlight and daylight modelling etc. Arnold's personal research has been to address the longer-term challenges which take ICTs beyond the replication of manual processes and empower previously unattainable methods. Since completing his PhD, he has been leading funded research in interactive computer graphics systems and their applications in architecture, engineering, cartography, medical and dental education, scientific visualisation for environmental sciences and for about the past 15 yrs in cultural informatics. Current funded research bridges computing science, cultural heritage professions and the socio-economic impact and business potential of the sector, both for the cultural heritage professional (new research methods, preservation and communication) and for the wider exploitation (tourism, education, entertainment, etc.). Arnold's research was reported to the Art and Design Unit of Assessment in RAE2008, where Brighton's return was rated on a profile of 35% (4*), 30% (3*), 20% (2*), and 15% (1*). The latest project Arnold coordinates is 3D-COFORM ( <a href="http://www.3d-coform.eu">www.3d-coform.eu</a> ): an EU FP7, €8.45M, 4-year Large Scale Integrating Project involving 19 partners. These include Computer Science departments (e.g. ETH Zurich), Cultural Professionals (e.g. Victoria and Albert Museum) and small companies (e.g. Breuckmann Gmbd). The Advisory Board includes senior representatives/advisers from many leading cultural organisations including the UNESCO World Heritage Centre; Staatliche Museen zu Berlin; Musée du Louvre, Paris; Museo Nacional de el Prado, Madrid; Polo Museale of Florence, Ministry of Cultural Heritage, Italy; Committee for Conservation, International Council of Museums; and the Museo dei Fori Imperiali and Museo della Civiltà Romana, Rome. Arnold worked at UEA Norwich from 1978-2002, being promoted to SL in 1986 and Prof in 1989. He was elected Dean at UEA from 1986-1992 and moved to Brighton as Dean of Management and Information Sciences in 2002. On Jan 1 <sup>st</sup> 2010 he was appointed "Director of Research Initiatives and Dean of Graduate Students" at the University of Brighton as part of the Brighton's strategic response to RAE2008.	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b> I have undertaken a number of different types of public dissemination, beginning with public lectures in the 80's (e.g. at schools or to local Women's Institute branches) on computer graphics and animation. In the late 90's I arranged an 8-month secondment to the Norfolk and Norwich Millennium Project bid team. As part of that role I led a team designing, resourcing, building and running a touring exhibitions of new ICTs and applications, including installation of temporary internet connections in 7 different venues through the county. At the time this was unusual and led to press and TV coverage, and many thousands of people visited the exhibition. The bid was ultimately successful. Over the past 12 or so years funded projects with ICTs in Cultural heritage have led to coverage on local TV, Discovery Channel (in at least the UK, USA and Italy), and press coverage in about 20 countries. In 2004 I led a proposal for a Grand Challenge in Computing Science entitled "Bringing the Past to Life for the Citizen" This still continues and means I have been asked to give several public lectures as well as many invited talks and keynotes on this and the research projects.	

### **3. Why is this event of interest to you and what contribution are you hoping to make?**

There is no doubt that we need to excite and engage people's interest in a wide range of technologies. We need more people to be entering this professional area and need public support for the value of the disciplines and to offset bad press from events such as the dot bomb and failed large-scale ICT projects. My interest in public engagement is neither new nor transitory, I have been doing it for ~30 years, whenever possible. My research projects are all intensively visual and therefore particularly attractive and suitable for public dissemination and "igniting enthusiasm". Public interest in the past has never been stronger and demonstrated through the success of series such as "Time team", interests in genealogy and interest in historically based serious games.

I believe there is enormous potential to excite the public about technologies through application areas in cultural heritage, varying from internet-based information bases informing genealogy, through social software and its potential to capture "user-created content" and a personal perspective on social history, events, places etc., to linking and enriching formal and informal collections in many forms across the spectrum of museums, archives and libraries. The massive growth in public image libraries also fuels this trend and the use of uncalibrated images from sources such as Flickr as the basis for 3D reconstruction of environments. Further developments of web resources such as the ARCH3D tool offer great opportunities for demonstrations (see [www.epoch.eu](http://www.epoch.eu) for access to the existing tool which was developed as part of the EPOCH project, which I led. Further developments are being undertaken as part of 3D-COFORM). This potential engagement can be greatly enhanced through the use of interactive and visual, multi-media, multi-sensory,

My current project (3D-COFORM) includes public engagement activities culminating in one or more distributed exhibition(s) being planned for 2012. Through my background and the work of 3D-COFORM, I would expect to bring experience and potential access to material, effort and venues for ExICTing public engagement activities.

**Name:** Asen Asenov

**Institution/Organisation:**

The University of Glasgow

**e-mail:** A.Asenov@elec.gla.ac.uk

**1. Brief summary of your track record (2,000 character limit)**

In my field of research - modelling and simulation of nanoelectronic devices - I have achieved international leadership and reputation by leading, managing and participating in the development of the most advanced simulation codes available. I am the undisputed world authority in the area of modelling and simulation of atomic scale effects and variability in nano CMOS devices. At Glasgow I have build the largest, best equipped, and perhaps the most reputable and influential specialised semiconductor Device Modelling Group (DMG) in the world. The 29 member strong group has a diversified portfolio of EPSRC and EC funding amounting to a total of £7.2M of active research grants and contracts solely apportioned to device modelling over the next 3 years. This includes two consecutive highly prestigious EPSRC Platform Grants. I have 510 publications and more than 160 invited talks in the above areas including a large number of IEEE Trans, IEEE EDL, IEDM and ESSDERC papers. One of my papers is cited 200 times, four more than 100 times, nine more than 50 times and more that thirty papers are cited more than 20 times. I am a member of the IEEE EDS TCAD Committee and a co-author of the ENIAC Strategic Research Agenda. I am/was General Chair of SISPAD'11 SNW'08, TPC co-chair of ESSDERC'08 co-director of SINANO Device Modelling Summer School and TPC member for multiple editions of IEDM, ESSDERC, IWCE, SNW, HCIS and DATE.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

As a founding member of Si Futures I have participated in the development of strategy for raising the profile of silicon-based research in the UK. This includes lobbying EPSRC, and the UK political establishment regarding the importance of the ICT and particularly Silicon based CMOS research including devices and design. The major result was the signposting of the Grand Challenges in Silicon technology by EPSRC.

As a PI of two consecutive Platform Grants at Glasgow and the PI of the eScience pilot project "Meeting the design challenges of the Nano CMOS electronics" I organised several high profile press releases with high resonance in the UK media. Examples include 3 BBC news reports on key achievements related to the ICT programme. Please see:

<http://news.bbc.co.uk/1/hi/technology/8393454.stm>

<http://news.bbc.co.uk/1/hi/scotland/4768323.stm>

[http://news.bbc.co.uk/1/hi/scotland/glasgow\\_and\\_west/6680007.stm](http://news.bbc.co.uk/1/hi/scotland/glasgow_and_west/6680007.stm)

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

This event is of interest to me, because I am deeply concerned not only about the future of the ICT research but also about the future of the ICT related industries in the UK which are the foundation of the vision for digital Brittan.

Unwise political decisions in the past resulted in significant decline of the core UK industry underpinning the ICT technology and this inevitably reflects on the image and future of the ICT research. UK is the only large economy in the world witout ingenious companies that underpin the core ICT technology.

I firmly believe that the current economic crisis inflicted by the over reliance on the financial sector may help to revert the trends in the UK. The decline of the ICT, together with other industries in the UK resulted in a much deeper economic crisis than in the rest of the world. UK is on its way to leave the top 10 largest economies in the world. One of

the political decisions that can help to bring UK back in the elite club of the economic powers is to focus on the high tech value added industries that underpin the ICT.

For me the raising of the public profile of the ICT research is strongly related to the political lobbying for the proper setting of the government priorities in this area. Through my world leading research reputation and strong connections with the European ICT programmes and structures I hope that I could make a contribution in achieving the above two goals.



<b>Name:</b> Prof. Jim Austin	<b>Institution/Organisation:</b> University of York
<b>e-mail:</b> austin@cs.york.ac.uk	

**1. Brief summary of your track record (2,000 character limit)**

I have worked in a broad range of research areas, including Neural Networks, Computer Architectures, Computer Vision, Neural Networks, eScience and Grid Computing. My main area is neural networks and using ideas from neuroscience to develop new intelligent systems. I developed the AURA binary neural network technology that is being applied widely in many applications. I have published over 250 papers, reports and hold 6 patents.

I have worked closely with a large number of companies including BAE systems, Rolls-Royce, GSK and many SME's.

I currently lead the Advanced Computer Architectures Group at York as well as running a small spin out that takes the groups technology to market.

We are commercialising a signal data management and search too as well as a 3D face recognition system for security applications.

I am currently involved in two large projects applying the signal search technology to neuroscience (the CARMEN project) and to traffic management (the Freeflow project). The CARMEN project is building a web portal to allow neuroscientists to share software and data within a secure distributed environment. Within Freeflow, we are implementing a neural network based prediction system to allow traffic operators demine the best course of action when traffic problems take place.

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**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**I have a large collection of vintage computer systems (see <http://www.computermuseum.org.uk/>) and have a passion for showing people how technology has changed. The collection is one of the largest in private hands world wide, and focuses on large mainframes and supercomputers. I have lectured on the collection, most recently in Swansea and for the BCS local branch. We use the collection in a year presentation to students, to illustrate how computers have developed over the years.**

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**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

I have a significant interest in setting up a technology centre to inspre all ages into computing. The concept, initially named the 'Think Centre' sets out to show the past, present and future of computing and its use.

There is a pressing need to encourage younger people to take a career in computer science. The current education in schools fails to inspire students. Education is focussed on information technology for every day use, rather than computer science. Fundamentally, young people need to be shown how technology impacts almost every thing we do, and how complex and challenging this is. It needs to be shown how they can make an impact upon this, developing highly innovative ideas. In tandem to this, the public needs to be shown how computer systems are changing all our lives. This will help both enlighten them and help promote the subject in the eyes of others, including children.

To meet this challenge it is proposed to set up the Think centre aimed at inspiring people to understand, develop and exploit new intelligent technology. It would be aimed at educational use by the Universities, Schools and Businesses and would be partly open to

the public.

The centre will be themed on the past, the present and the future of thinking machines. The past is aimed at showing how we have got to where we are, showing how computers have developed, showing the growth in speed, size and applications. This will draw on historical collections at the science museum, private collections and others. The present is focussed on what we do now, allowing companies (at cost) to display and evaluate there latest technology. For example showing how current F1 racing cars use computers, how assistive technology is changing the way we care for people. Finally, the future will be a show case of current research in computer science and its application, from universities and companies.

**Name:**

Prof. Roger Boyle

**Institution/Organisation:**

University of Leeds

**e-mail:** r.d.boyle@leeds.ac.uk

**1. Brief summary of your track record (2,000 character limit)**

I have had 2 EPSRC Public Partnership Awards bringing aspects of computer science to the public, and have two current applications in this area under review.

I have had 5 years generating communications with schools (inter alia) as part of a HEFCE Centre of Excellence in Teaching and Learning.

I am an active researcher in computer vision in a highly rated computer science department. The work we do (e.g., surveillance) touches on public life and is poorly understood with a poor reputation, to our and EPSRC's detriment.

I am passionate about bringing computer science to the public - particularly youth - to inform them that it is not just more than "IT", but different. Part of the wide misunderstanding is a belief that IT fluency equates to computer science, and there are no outlets, formal or informal, contradicting this for most people.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

1. EPSRC funded - "Whatever happened to X-rays": a video looking at modern imaging modalities (now 10y old!). We produced a well regarded piece illustrating MR, CT (which was not well known then) and a section on virtual surgery for training.

2. EPSRC funded - "Computing on the buses": posters on urban buses in the vein of "Poems on the underground". We produced a series of 8 "teaser" posters with supporting website background - <http://www.morethanyouthink.com/>.

3. Founder member of "Computing at School" (<http://www.computingatschool.org.uk>) and co-organiser of their inaugural conference (Birmingham, 2009). We are trying to build a self-sustaining network of computer science teachers, well connected to the HE sector.

4. Many incidental activities as part of schools liaison over many years, often as part of the Leeds "inner-city" efforts.

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

CS has been badly underrepresented in public communication for many years. Selfishly, this is a prime explanation of plummeting student numbers, but more philanthropically I am anxious that the broader community perceives a difference between desktops and computer science.

Current CS research is thrilling and far reaching, and very little of it is communicated. It is easy to get some of this into the public view - in comparison, the physics of the LHC is very hard to understand but everyone knows what it is, and the community has done a good job of justifying it. I'd like to see our community do the same for Biocomputing, AI, cloud computing, ...

I would like to be part of devising new topics and new ways of presenting them: I'll be happier when every large screen display in railway stations is telling the EPSRC-funded CS story.

...

<b>Name:</b> John Brooke	<b>Institution/Organisation:</b> University of Manchester
<b>e-mail:</b> john.brooke@manchester.ac.uk	
<p><b>1. Brief summary of your track record (2,000 character limit)</b></p> <p>I am co-Director of e-Science North-West (ESNW) at the University of Manchester and play a major role in planning regional, national and international ICT infrastructure. My main research interests are in distributed computing, numerical simulation and dynamical systems. ESNW has attracted £8 million core funding and during the course of its existence has been an umbrella organisation for a research portfolio totalling £20 million (2001-9). The Manchester e-Science team has produced high-quality software now being used extensively in scientific applications, including the RealityGrid Computational Steering Library, and components of the Unicore software used on the European Distributed Infrastructure for Supercomputing Applications. I have served on a variety of technical and strategic advisory boards on the UK e-Science programme (2001-8) and on the international steering committee for the European Centre of Excellence in Multi-Scale Biomolecular Modelling, Bioinformatics and Applications (MAMBA) (2003-6) and I was Chair of the Unicore Technical Board (2003-5). I am currently and investigator for and serve on the management boards of the Centre for Interdisciplinary Computational and Dynamical Analysis and the North-West Grid. CICADA has been established with £1.9 million funding from the EPSRC Mathematics Programme to develop a research agenda based on the study of hybrid systems and to bridge the gap between the study of such systems in Computer Science and the study of dynamical systems in Mathematics. I am also currently working on projects to apply ICT to analysing data in Space Physics (HELIO EU FP7 Programme) and with the application of multi-core processors in computational science and engineering. Details of my projects and publications are available at:</p> <p><a href="http://www.cs.manchester.ac.uk/~jbrooke/">http://www.cs.manchester.ac.uk/~jbrooke/</a></p>	
<p><b>2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)</b></p> <p><b>I am particularly interested in the pervasive aspects of ICT in interactions with the natural and social environments. For example, one of the North-West Centre e-Science projects has involved working with field engineers in water utilities to provide Decision Support Tools to enable engineers in the field to access sophisticated modelling software that can predict future state of the water network. I have given webinars and presentations to the water industry on this topic. Another long terms interest is in the use of technology for promoting collaborative working. I was involved in developing the UK network for Access Grid since 2001 when the first Access Grid node in the UK was built at Manchester. This technology has been used for demonstrations of live scientific simulations that won awards at Supercomputing 2003 and 2005 in the US and at the International Supercomputing Conference 2004 and 2006 in Europe. This technology has been used in education for delivering A-Level Mathematics courses. It has also been used for performance arts events involving distributed performances (artists working in distributed locations and communicating via ICT) and distributed audiences. Two examples of this were: firstly a series of performance arts events in 2001 by Kelli Dipple funded by the Australian Arts Foundation and secondly a project funded by the AHRC</b></p> <p><b><a href="http://www.rcs.manchester.ac.uk/research/eDance/">http://www.rcs.manchester.ac.uk/research/eDance/</a>. I was not an investigator on this latter project but it comes under the umbrella of the e-Science projects at Manchester and my work concerns the overall coordination and strategic planning of this effort.</b></p>	

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

During my work in the UK e-Science programme I have become very aware that novel developments in ICT face a key presentational issue as follows. If the potential users of the technology feel that the technological complexity is the first thing that they encounter and if they feel that this makes them feel disempowered, then they are likely to reject the technology despite its potential benefits. I believe that this perception of ICT also generalises to the experience of the wider population. Before working in a University environment I was a teacher working with a children with a wide range of skills and abilities and one of my roles was to develop ICT and mathematics in the curriculum. I found a lot of resistance to the use of ICT by teaching professionals for precisely the same reasons discussed above. However my work in both sectors also made me aware of the power of ICT in enabling knowledge discovery and promotion of collaborative working. At its best, ICT integrates into the background of the various situations in which individuals and groups seek to develop knowledge and problem solve. The rapid growth of social networking applications shows the potential power of ICT as a tool, by providing access to automated information processing and for organising channels of communication. Through my work as co-Director of the North-West e-Science Centre I have worked with colleagues who have developed sites for scientific social networking such as MyExperiment (<http://www.myexperiment.org>) and I have been involved in disseminating such methods in my own projects. I believe that the major contribution that I could make would be to bring my breadth of experience developed in my school teaching and university research work as background to the discussions. My future research agenda is very much focussed on the application of ICT in mult-disciplinary working and I am interested in extending this beyond the University sector.

**Name:**

Professor Andrew Brown

e-mail: adb@ecs.soton.ac.uk

**Institution/Organisation:**

University of Southampton

**1. Brief summary of your track record (2,000 character limit)**

1983 Visiting Scientist, IBM Hursley, Winchester, UK

1988 Visiting Professor, Siemens AG, NeuPerlach, Munich, Germany

1995 Senior Academic in Industry Secondment, Multiple Access Communications, Chilworth Research Park, Southampton, UK

2001 Research Director, LME Design Automation, Chilworth Research Park, Southampton, UK (around £1M VC support)

2001 Royal Society Industrial Fellow. LME Design Automation

2004 Visiting Professor, Department of Physical Electronics, University of Trondheim, Norway

2008 Visiting Professor, Computer Laboratory, University of Cambridge, UK

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1999 Established chair of Electronics, Electronics and Computer Science, University of Southampton, UK

1993-2007 Head of Electronic System Design Group, Electronics and Computer Science, University of Southampton

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**Current EPSRC portfolio:**

EP/G015775/1 Biologically-Inspired Massively Parallel Architectures - computing beyond a million processors (PI) (Currently funding me 100%)

EP/E035965/1 Electronics Design (CI)

EP/E015522/1 Otoacoustic Emission Based Biometric Systems (CI)

EP/D079594/1 A scalable chip multiprocessor for large-scale neural simulation (PI)

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Past EPSRC portfolio: 13 grants, going back to 1989**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)****I was one of the investigators on the network grant (EP/D054028/1 - Developing a common vision for UK research in Microelectronic Design) along with Steve Furber (Manchester) and Roger Woods (QUB) who introduced the Electronics Grand Challenge initiative which contributed to the EPSRC 'signpost' concept.**

**3. Why is this event of interest to you and what contribution are you hoping to make?** (2,000 character limit)

I am sympathetic to the difficulties of ICT and would like to help change the public perception; also, my current grant (which funds me 100%) has a public engagement workpackage identified as a very necessary part of the work - there is a clear synergy here.

<b>Name:</b> Alan Bundy	<b>Institution/Organisation:</b> University of Edinburgh
<b>e-mail:</b> A.Bundy@ed.ac.uk	

**1. Brief summary of your track record (2,000 character limit)**

I am Professor of Automated Reasoning in the School of Informatics at the University of Edinburgh. My research interests include: the automation of mathematical reasoning, with applications to reasoning about the correctness of computer software and hardware; and the automatic construction, analysis and evolution of representations of knowledge, also called ontologies. My research combines artificial intelligence with theoretical computer science and applies this to practical problems in the development and maintenance of computing systems.

I am a fellow of several academic societies, including the Royal Society of Edinburgh and the Royal Academy of Engineers. The major awards for my research, include the IJCAI Research Excellence Award (2007) and the CADE Herbrand Award (2007). I was Head of Informatics at Edinburgh (1998-2001) and a member of: the Hewlett-Packard Research Board (1989-91); the ITEC Foresight Panel (1994-96), both the 2001 and 2008 Computer Science RAE panels (1999-2001, 2005-2008). I was the founding Convener of UKCRC (2000-2005), an advocacy body for UK computing research. I am currently a member of the Scottish Scientific Advisory Committee, which advises the Scottish Government on scientific matters. I am about to be appointed as a Vice President and Trustee of the British Computer Society, where I will play an ambassadorial role in connection with the new Academy of Computing. I am the author of over 200 publications and have held over 50 research grants totalling over £10M in value.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**My public engagement activities include several appearances on radio programmes, usually talking about AI: its scope and limitations.**

**As the convener of UKCRC I was also heavily engaged in discussions with government ministers and civil servants, funding agencies, industry bodies, etc. I am currently involved in the UKCRC's Grand Challenges in Computing Research as a member of the steering committee, where I have proposed relating these challenges more closely to issues of current social import, such as climate change and assisted living.**

**I have also been involved in discussions with the Scottish Government, including ministers, MSPs and civil servants as part of my membership of the Scottish Scientific Advisory Committee. In particular, I championed its activities in the promotion of assisted living technologies and the creation of a dialogue between government, including local government, industry, academia and funding agencies.**

**I have also promoted a seminar series on Computational Thinking, in which people from other disciplines were invited to explain how computational ideas had pervaded the hypotheses and theories in their discipline, affecting the type of questions they asked and the answers they sought. This was widely attended across the University.**



**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

My particular interest in this event arises from my proposed ambassadorial role in the new BCS Academy of Computing. I will be responsible for explaining computing research to a wider audience, including government, industry and the general public. It is essential that I work closely with EPSRC and other funding agencies to pool our resources and focus our message. I, therefore, need to be involved in this new initiative from the start.

<b>Name:</b> David Carey	<b>Institution/Organisation:</b> University of Surrey
<b>e-mail:</b> David.Carey@surrey.ac.uk	
<p><b>1. Brief summary of your track record</b> (2,000 character limit)</p> <p>2002-2007, EPSRC Advanced Research Fellow working on next generation displays and materials, final outcome - Outstanding</p> <p>2004 - 2009, Lecturer in Electronic Engineering &amp; course director MSc in Nanotechnology and Nanoelectronic Devices, University of Surrey.</p> <p>2009 - Present, Senior Lecturer in Electronic Engineering</p> <p>My research track record is in the area of large area practical applications of nanotechnology and carbon based electronics. I am particularly interested in transport related effects for devices including field emission displays and sensor technology. I also have an interest in the societal aspects and public perceptions of technology, especially nanotechnology and I am a member of the advisory board of the Institute of Nanotechnology.</p> <p>I am also the undergraduate admissions tutor for electronic engineering for the department and so am aware of the perception of ICT amongst A level students.</p>	
<p><b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b> (2,000 character limit)</p> <p>Yes, for example this year I was asked to give an overview of nanotechnology for UK Steel's annual meeting and in June I was invited to present a 'Celebrating Science' lecture at the National Physical Laboratory. The NPL Celebrating Science lecture series are open to all who work at NPL and the speakers are asked to take a wider view of science. I have also been invited to give seminars where the emphasis was on presenting overview material of science and technology rather than just my research. I have also been invited onto radio to talk about nanotechnology and was recorded for tv speaking about what nanoscience and nanotechnology can promise.</p>	
<p><b>3. Why is this event of interest to you and what contribution are you hoping to make?</b> (2,000 character limit)</p> <p>I enjoy public speaking and have been told I give good talks. I am concerned that at both school level and in society at large that ICT is not really understood and the benefits it can promise are often not made clear. I am hoping by attending this meeting I can get involved in either existing or new initiatives that can raise the public's excitement and knowledge of the field. We all use mobile phones, computers, TVs , and portable memory sticks many of which are taken for granted but there is fascinating science and engineering behind these devices and that needs to be communicated. I believe that interdisciplinary research is the way forward in ICT and this is one route to help identify these activities.</p>	

**Name:**

Dr. Kirsten Cater (I will be attending if invited on behalf of my colleagues)

Dr. Mike Fraser

Dr. Sriram Subramanian

e-mail: [cater@cs.bris.ac.uk](mailto:cater@cs.bris.ac.uk)

**Institution/Organisation:**

University of Bristol

**1. Brief summary of your track record**

Our team at Bristol explore how methodologies and findings across the arts, sciences and social sciences can improve existing designs. We have used ethnographic and experimental techniques to design experiences for interaction in public places, including museums, schools and community centres. We are grounded in a philosophy which draws together public engagement and research methods, driven by the importance of embedding new design in everyday practice. These activities have led to impact both through research publications in international forums and through widespread public interaction with research. We have received funding for these activities from DTI/TSB, EPSRC (Digital Economy, ICT, Public Engagement), EU and Industry.

A core element of this approach is the bottom-up involvement of communities from the very outset of a project to learn new directions for research. This enhances the resulting research and empowers public collaborators by allowing them to drive the design of future technologies that they want and need. The poor reputation of ICT design creates initial concern about participating in these activities for many communities, especially elderly groups. However, by finding common interests, we have found that these groups can become very enthusiastic and give novel insights into developing technologies. It is a matter of finding that specific hook for each community to get them excited about ICT.

**2. Have you previously participated in public engagement activities? If do please provide a brief description.**

We have been involved in major activities which have used public engagement as a fundamental research methodology. This work has included major programmes such as the Equator IRC and the DTI/EPSRC funded Mobile Bristol centre (which evolved into the Pervasive Media Studio). More recent activities include building and deploying new forms of actuated and mobile devices in schools that help children author and articulate their own designs for learning spaces (funded under the EPSRC public engagement programme); and working with industrial partners to create prototype mobile device deployments under the Mobile VCE strategic partnership. All our work has engaged media companies, and we have long-standing partnerships with various providers including good relationships with the BBC in Bristol and across the UK.

As well as research, I have personally been involved in several public engagement activities with the aim of making different communities, from elderly groups to school children, aware of the fun side of computing. I organised a seminar series during term time for local schools (yrs 10-13) on Computer Science topics aimed to get students excited about the field. After the seminar series finished we offered the lectures to any school that was interested and we have travelled to schools nationally to give these talks. In the quest to excite more female students into computing I have helped run summer workshops for girls, created web pages highlighting the women behind important advances in Computer Science, as well as working with Google to provide a female-only prize to encourage women to enter and remain in the field of Computer Science at Bristol. As the admissions tutor for the department, I am acutely aware of declining numbers of good students applying to study Computer Science. The declining pool of good applicants presents a serious threat to the future of computing in higher education and beyond.

### **3. Why is this event of interest to you and what contribution are you hoping to make?**

The goals of the workshop are critical to the recruitment of future research leaders, high quality practitioners for industry, and ultimately the competitiveness of the UK under a vision of the 'high-tech economy'. There are at least three areas we are interested in collaborating on. Firstly, we would love to participate in discussions on how computing is represented in the media, particularly with a view to creating radio/television series or programmes on ICT. Secondly, we would like to explore the relationships between schools and higher education with regard to ICT, looking at the difficulties in designing and teaching sufficiently appropriate curricula to engage and excite young people in computing and especially to appropriate their interests in 'home' technologies (phones etc.) into the classroom. Finally, we would welcome the opportunity to meet others across the UK who are facing the same challenges and to exchange ideas that have helped, particularly grounding our ideas in a base of existing excellent work (notably the cs4fun team at QMUL, but many others with similar interests). In turn we can bring our varied expertise in engaging with children in schools, elderly communities and people in public places through the design of prototypes and 'hands-on' educational workshops. We also bring media contacts and opportunities which may prove to have wider relevance to the goals of the workshop.

**Name:**

Professor Jonathon A Chambers

**Institution/Organisation:**

Loughborough University

e-mail: j.a.chambers@lboro.ac.uk

**1. Brief summary of your track record (2,000 character limit)**

Head of Advanced Signal Processing Group, Communications Division

Deputy Head of Dept. of Electronic &amp; Electrical Engineering (Research)

- More than 20 Years of academic and industrial experience in signal processing
- Published more than 300 works, co-authored two research monographs
- Steered 47 researchers to PhD graduation
- Extensive experience of successful technical management of EPSRC and industrially funded research projects
- QinetiQ Visiting Fellowship awarded for success in industrial-based research

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)****I have delivered plenary talks both nationally and internationally to broad public audiences.****3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

I believe it is fundamentally important to increase public awareness of the role of digital signal processing as a transformational technology in almost all of today's wireless communications technologies, for example, digital audio and video broadcasting, WiFi, WiMax, and 4G LTE Advanced, all rely upon the Fast Fourier Transform, as does wireline technology in the form of broadband to the home. This mathematical algorithm has been extended and refined by the signal processing community and provides the mechanism to convert a difficult multipath channel, i.e. one where there are many different routes for the transmitted message to reach the destination, into a much simpler form. As a result very simple procedures can be employed at the receiver to extract the original message. For the future of the UK, young people must be made aware that such advances are only possible with the fusion of engineering and mathematics, and they must be excited to desire to study these topics so that they can pursue challenging and stimulating careers in digital signal processing in order that the UK continues to have worldwide impact in the field of telecommunications, and ICT more generally. Another area in which digital signal processing is very useful is the machine cocktail party problem, i.e. building a device which is able to combine audio and video information to emulate the brain's ability to hold a conversation with one person in a noisy environment. This type of research is likely to advance fundamentally human machine interfaces. Communicating such challenges and recent progress in these areas is very likely to stimulate the public. I therefore wish to attend the event to highlight such research activity in the field of digital signal processing and explore possibilities for communicating this to a wider audience in the UK, such as through strategic use of conventional and emergent mechanisms, including colleges, schools and Internet-based social networks.

<b>Name:</b> Prof Dave Cliff	<b>Institution/Organisation:</b> Dept of Computer Science, Univ. of Bristol
e-mail: <a href="mailto:dc@cs.bris.ac.uk">dc@cs.bris.ac.uk</a>	
<b>1. Brief summary of your track record</b>	
<p>BSc in Computer Science (1987), then MA ('88) and DPhil ('92) both in Cognitive Science (artificial intelligence), worked as an academic for several years at Sussex, then at the MIT AI Lab, then left academia to be a research scientist for Hewlett-Packard, then for Deutsche Bank in the City of London. After 7 years in industry I returned to academia as a Prof of Computer Science at Southampton, later moved from Southampton to be a Prof of Computer Science at Bristol (since summer 2007).</p> <p>While in industry I learnt loads about technology innovation, exploitation, and commercialisation. In addition to my 70-odd academic publications, I'm inventor or co-inventor on 15 granted patents.</p> <p>Since October 2005 I have been Director of the largest EPSRC-funded project in ICT: the UK Research &amp; Training Initiative in the Science and Engineering of Large-Scale Complex IT Systems (LSCITS). The LSCITS Initiative is funded by over £10m from EPSRC, 2005-2012, and involves over 200 person-years of effort.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
<p>I've given over 150 invited external keynotes and lectures, many of which have been "public engagement" to non-technical audiences. PE work has been a constant throughout my career. In 1993 I was chosen to give the <a href="#">Isambard Kingdom Brunel Award Lecture</a> at the annual summer meeting of the <a href="#">British Association for the Advancement of Science</a> (now known as the British Science Association). After that, I was a "Schools' Science Lecturer" several times at the <a href="#">Royal Institution of Great Britain</a>. I've been an invited speaker at the <a href="#">Cheltenham Science Festival</a> three times, and I've done an awful lot of media interviews, both print and broadcast. I was chosen by the British Computer Society (BCS) to give a tour of lectures for 14-18year-olds at six venues around the country, to celebrate the 50<sup>th</sup> year of the BCS. Currently I am the only Computer Scientist employed by <a href="#">GSCE Science Live</a> to talk to large audiences (several hundred at a time) of GCSE-level students about just how much fun computer science (and engineering) can be – in 2009 I lectured on the future of computing to over 8,000 schoolkids. I do similar work for <a href="#">Maths Inspiration</a> too. Trying to get schoolkids switched on to science and engineering is something that I really enjoy doing.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>I'm passionate about public engagement – I enjoy doing it, I think it's vitally important, and I would like to be able to do it better, and also to use my experiences over the past 17 years to help others do it better too.</p>	

<b>Name:</b> Dr Roy L Crole	<b>Institution/Organisation:</b> University of Leicester
<b>e-mail:</b> r.crole@mcs.le.ac.uk	
<p><b>1. Brief summary of your track record (2,000 character limit)</b></p> <p>I have an MA and Part III in Mathematics and a PhD in Computer Science from Cambridge. I am currently a senior lecturer at Leicester. My research area is program language semantics. My early research career focussed on categorical type theories and included an advanced graduate level monograph published by Cambridge University Press. In recent years I have become more interested in application areas such as mechanized theorem proving for correctness proofs.</p> <p>I am also interested in teaching at all levels. I have been most active in the Midlands Graduate School in the Foundations of Computing Science for the last ten years, having chaired the organising committees in 2006 and 2009, and obtained EPSRC funding support. The MGS runs a week long 'spring school' of advanced graduate level courses for UK and international students. As further evidence of a commitment to teaching, I have very recently been awarded Fellowship of the Higher Education Academy.</p> <p>Of direct relevance to this workshop, I have been BSc admissions coordinator for the past five years. Responding to the national decline in applications for Computing and related degrees I organised ICSS 2006 - a workshop on Inspiring Computer Science Students. Speakers included Anna Round who spoke about her studies of the reasons for the decline, Andrew Sithers from MS Education, and members of the Department's Industrial Advisory Board. One outcome was the creation of iCS. This is a short newsletter for schools which attempts to demonstrate that University Computing is exciting, challenging, and can lead to great jobs and fulfilling careers. It is published twice a year and is distributed to schools both in the Midlands area and nationally.</p> <p>I have attended various national events in recent years, such as the BA Science Communication conference in London, BCS and HEA workshops, and MS sponsored education meetings. I also actively promoted computing at Leicester Teachers' Conferences in 2007 and 2008.</p>	
<p><b>2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)</b></p> <p><b>Apart from the activities outlined in Section 1, probably my main contribution here is the organisation of a Masterclass for school children in 2009. Entitled 'No Limits? What Computers can and can't do', this was an extended half day event consisting of an introductory lecture on university computer science, a laboratory session in which students undertook a tutorial in Scratch programming and were able to interact with student project work, and a final lecture covering what computers cannot do and their limitations. Most of the students who attended were local to Leicester. The Masterclass was well received and the students' feedback was mostly very positive indeed. We are planning to repeat the Masterclass in April 2010.</b></p> <p><b>I have interacted with teachers on a one-to-two basis at the Leicester Teachers' Conferences. This involved brief discussions about Computer Science both at Leicester and also more generally in the UK, with the intention of offering advice about how school curricula (I am not an expert) compare with university curricula (as well as general advice about admissions to Leicester, and especially whether we require Computing, ICT and/or Mathematics - either from A-levels or indeed from the many other 16-18 range qualifications).</b></p>	

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

I have been involved in recent years with a number of activities that seem to be either related to or directly connected to the ExICTe workshop. I am very interested in both teaching and research and am passionate about teaching young people and supplying them with a clear picture of the world. There appears to be a body of evidence that suggests school students find the current ICT syllabi boring and tedious; and moreover they typically do not fully understand the nature of University degree courses, especially the wide variation of programmes from applied ICT through to theoretical computer science.

I would be happy to talk briefly about the iCS newsletter that the University of Leicester is producing, and to bring along some samples. I could also discuss the Masterclass that ran in 2009. I believe that I can contribute effectively to general discussions by drawing on my experience of the last five years or so (as outlined in Section 1 and 2).

In conclusion, I am already involved with trying to raise the profile of ICT and Computing, I am engaged in academic research but have a healthy interest in teaching, and would be willing to assist in 'galvanising action'.



**Name:** Paul Curzon

**Institution/Organisation:** Queen Mary,  
University of London

**e-mail:** pc@dcs.qmul.ac.uk

**1. Brief summary of your track record (2,000 character limit)**

I am a Reader in Computer Science at Queen Mary, University of London with 20 years' research experience in the evaluation of computer and human-computer systems. I have published over 100 articles in journals and conference proceedings. I was technical co-chair of BCS Human Computer Interaction, 2006 and of two International Workshops on Formal Methods for Interactive Systems (2006,7). I am a member of the ACM, Chartered IT Professional Fellow of the BCS and Fellow of the HEA. I was a finalist for the Times Higher Innovative Lecturer of the year 2009. I was Principal Investigator on EPSRC project GR/M45221 on the verification of verification systems and on the Human Error Modelling project (GR/S67494/01). I am Co-Investigator on the Extreme Reasoning Platform Grant (EP/F02309X). I am also Co-Investigator and member of the management team of the CHI+MED programme grant (EP/G059063/1) on the safe use of interactive medical devices.

**Sample publications**

1. Ruksenas, R., Back, J., Curzon, P. & Blandford, A. (2009) "Verification-Guided Modelling of Saliency and Cognitive Load", *Formal Aspects of Computing*. 21(6).
2. Ruksenas, R., Curzon, P. & Blandford, A. (2008) "Modelling and Analysing Cognitive Causes of Security Breaches". *Innovations in Systems and Software Engineering* 4(2), pp 143-160.
3. Curzon, P., Ruksenas, R. and Blandford, A. (2007) "An approach to formal verification of human-computer interaction", *Formal Aspects of Computing*, 19(4) pp 513-550.
4. Xiong, H., Curzon, P., Tahar, S. and Blandford, A. (2007) "Providing a Formal Linkage between MDG and HOL", *Formal Methods in Systems Design*, 30 (2) pp 83-116.
5. Mizouni, R., Tahar, S. and Curzon, P.. (2006) "Hybrid Verification Integrating HOL Theorem Proving with MDG Model Checking", *The Microelectronics Journal*, 37(11), pp 1200-1207.
6. Curzon, P., Wilson, J. and Whitney, G. (2005) "Successful strategies of older people for finding information" *Interacting with Computers* 17 (6), pp 660-671.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**I have wide public engagement experience, including PI on the 5-year Computer Science for Fun PPE grant (EP/F032641) ([www.cs4fn.org](http://www.cs4fn.org)). cs4fn was singled out for praise in the 2007 EPSRC International Review of Computer Science. The cs4fn website gained 15 million hits in the last year and the magazine has a print run of 22000. I regularly give schools talks including our Computer Science Magic Show, personally reaching around 2000 children in the last year. I've further participated in the Royal Society Summer Exhibition, BA Festival, and Manchester and Brighton Science Festivals. I partnered primary schools on two Royal Society Partnership Grants (2007, 2008) and was PI on a 2007 RCUK Science Week award. I won the EPSRC Non-professional Computer Science Writer award in 2007. I have published results on my PE activities as well as giving invited keynotes about them in International conferences on computer science education[1-6]. I turned round interest in studying computer science at QMUL with applications more than doubling since I was given responsibility for recruitment in 2004.**

1. P. Curzon, J. Black, L.R. Meagher, P.W. McOwan (2009) "cs4fn.org: Enthusiating

students about Computer Science", Informatics Education Europe IV.

2.P. Curzon, P.W. McOwan, Q. Cutts and T. Bell (2009) "Enthusing & inspiring with reusable kinaesthetic activities", ACM SIGCSE Bulletin 41 (3), 94-98.

3.P. Curzon, P.W. McOwan and J. Black (2009) "The magic of HCI: Enthusing kids in playful ways to help solve the Computer Science recruitment problem". Keynote at HCI Educators 2009.

4.P. Curzon (2007) "Serious Fun in Computer Science", ACM SIGCSE Bulletin 39(3) p1, Keynote at ITiCSE 2007.

5. Curzon, P., Peckham, J., Taylor, H., Settle, A. and Roberts, E. 2009. Computational Thinking (CT): on weaving it in, ACM SIGCSE Bulletin 41 (3), 201-202.

6.P. Curzon & P.W. McOwan (2008) "Engaging with Computer Science through Magic Shows", ACM SIGCSE Bulletin, 40(3), 179-183.

**3. Why is this event of interest to you and what contribution are you hoping to make?** (2,000 character limit)

I have been extremely successful in improving the public profile and perception of ICT in my activities to date, both in the UK and overseas. I would like to share success stories both to help others and also to gain new ideas for my own work. cs4fn is also a high profile outlet that others can use to raise the profile of their research and PE activities and I hope my attendance will act as a catalyst for more people to do so. I would be happy to give a presentation on the cs4fn approach if desired.

I hope this event will act as a catalyst for more people to actively do things rather than just be a talking shop about problems (which has unfortunately been the case with previous workshops on this issue). There are many people already making a difference and I hope the workshop will build on the successes and the knowledge that already exists of how to solve the very big problem that exists as well as generating new ideas.

<b>Name:</b> Quintin Cutts	<b>Institution/Organisation:</b> University of Glasgow, Computing Science
<b>e-mail:</b> quintin@dcs.gla.ac.uk	
<b>1. Brief summary of your track record</b>	
<p>I studied for my PhD and undertook subsequent post-doc research at the University of St Andrews from 1988-1995. I then took up a lectureship at the University of Glasgow. My PhD, post-doc and early lecturing career, from 1988-1999 all involved research into persistent programming systems, with EPSRC, EU and industry support and collaborations across Europe, North America and Australia.</p> <p>Since 2000, my research focus has switched to technology in education and more recently to focussed research into computer science education. The key theme running through my learning and teaching research is the engagement of learners with CS and with the processes required to learn the subject. Both aspects are widely recognised as major issues: the subject is poorly understood throughout society; and learning the subject, particularly programming, is highly challenging for many learners.</p> <p>I have participated in multi-institution, multi-national research projects in CS education, and have a range of collaborators in the UK, North America and Australia.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
<p>From 2006-9, I led the EPSRC PPE project CS Inside, which has had a strong influence on the teaching of computing in Scottish secondary schools and more widely. We initially developed a series of lesson length workshops to be used in schools by academics, science communicators and teachers. The workshops bring out key aspects of computer science found inside the technology that surrounds pupils – a typical example is that of the machine learning required to support the predictive texting systems found inside mobile phones. The key here is to enthuse pupils with the science of computing by linking it to technology that they care about and use every day. As well as delivering the materials, I developed a range of CPD opportunities for teachers to enhance their delivery. We have visited over 100 schools; over 600 teachers have downloaded materials from our website from around 20 countries worldwide. Teachers from over half of all secondary schools in Scotland have had exposure to the materials, and we know over 6000 pupils have attended at least one workshop. 1300 hours of CPD have been delivered to teachers, mostly Scottish, some international.</p> <p>There have been many spin-offs from this project, including involvement with the Scottish Qualifications Agency and Learning and Teaching Scotland, exploring curriculum developments, and funding from Google to exploit opportunities for CS offered by the new Scottish Curriculum for Excellence. As a legacy to CS Inside, we now have a credit-bearing final year course where students spend time in schools working with pupils and developing further workshop materials.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>Despite the range of activities across the UK, from mine in Scotland to Paul Curzon's EPSRC-funded <i>cs4fn</i> programme at Queen Mary University, London, as well as the various robotics projects and competitions, we still have not had a significant effect on attitudes and understanding of CS as a science in the UK, either (apparently) at government level or amongst the general population.</p> <p>Originally, I thought that teachers and pupils were the best target, but now it seems to me that the general population (in particular parents, school governors and local education authorities) and national government need to be targeted.</p> <p>I can bring my extensive experience of this general field to the meeting, and hope to</p>	

explore how I can build on this experience to address these different target audiences. I'm keen to collaborate with others around the country with similar aims in order to develop a strategy for going forward.

<b>Name:</b> John Darlington	<b>Institution/Organisation:</b> Imperial College
<b>e-mail:</b> j.darlington@imperial.ac.uk	
<b>1. Brief summary of your track record</b> Brief Summary of CV/Track Record:  Current Position: Professor, Department of Computing, Imperial College London, Head, Social Computing Group  Career: BSc (Econ) London School of Economics, 1969 PhD Department of Artificial Intelligence, Edinburgh University, 1970-72, Research Associate, Edinburgh, 1972-77, Visiting Fellow, IBM Yorktown Heights, SRI, Lecturer, Imperial College London, 1977 Professor, Imperial College, 1985  Research Contributions: Functional programming languages, Program Transformation, Coordination Forms, Component-based software infrastructures, Cloud computing, Internet Economics and Applications, Parallel Machine Design  Facility Support: Director of Imperial College, Fujitsu Parallel Research Centre, Imperial College Parallel Computing Centre, London e-Science Centre, Imperial College Internet Centre.	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>  I have always had an interest in the “politics” of computing science research and what I see as a desire of some workers to artificially restrict the subject so it can aspire to be called a proper science. This, I feel, sometime leads to a prejudice against applied computing. I think this is a false dichotomy which, if maintained, could result in academic computing cutting itself off from many of the exciting public-facing developments – the Web, Digital Media, Internet Services, Apple Apps. The fact that ICT is ubiquitous should make it all the more exciting and relevant. This is where the enthusiasm for ICT could be generated.  As the Internet now involves members of the general public at its nodes as both users and providers of data and services it becomes an economic and social arena and should be studied as such.  Similarly much progress in ICT is via innovation – doing new things with existing technology – which can be very short term as opposed to longer-term basic computer science research.  As Director of the London e-Science Centre and the Imperial College Internet Centre I pursued this applied agenda with work on Internet applications and Internet economics. I have given several presentations on this theme to public and commercial workshops and written several papers on this  The Internet Centre organised two open “Wealth of Networks” public consultation meetings which were very well attended.	

**3. Why is this event of interest to you and what contribution are you hoping to make?**

As I said above I feel a case should be made for the more applied and successful ICT research programmes – e-Science, Digital Economy – to be recognised and supported and equal prominence given to exciting public developments and innovation in ICT.

I would be happy to put this case in a short presentation or just make the case from the floor.

**Name:**

Dr Aniko Ekart

**Institution/Organisation:**

Aston University

**e-mail:** a.ekart@aston.ac.uk

### **1. Brief summary of your track record**

I have been a lecturer at Aston University since January 2006. Previously to this I have worked as a Senior Researcher at the Computer and Automation Research Institute of the Hungarian Academy of Sciences and as a lecturer at the University of Birmingham.

I am Postgraduate Programme Director in Computer Science at Aston.

Currently I am supervising two PhD students, one of them on an EPSRC CASE studentship. My main research is in the specialised field of genetic programming and artificial intelligence techniques in more general and their applications in various research areas in engineering.

I have recently started collaboration with D. Gherghel and C. Hirsch from the Life and Health Sciences School on the Aston Virtual Patient project to produce an easy to use, effective virtual learning environment to support the delivery of multidisciplinary clinical teaching. Another project with D. Gherghel and R. Heitmar is on building computational models to detect the effects of normal ageing on retinal vascular function. We are aiming to find appropriate models using evolutionary algorithms.

I am also collaborating with S. Nemeth from the School of Mathematics, University of Birmingham on developing heuristic algorithms for projections on cones, which is a problem with applications in engineering.

### **2. Have you previously participated in public engagement activities? If do please provide a brief description.**

The evolutionary art event I proposed has been accepted for the 2010 British Science Festival to be held in September 2010. So this is a public engagement activity I am preparing for.

### **3. Why is this event of interest to you and what contribution are you hoping to make?**

This event is of interest to me as I'd like to be part of shaping research direction that is relevant to ICT and to the contribution of Aston University.

I am collaborating and building up collaboration with researchers in many seemingly very different fields both internally and externally to Aston University and I am also interested in attracting good candidates to do postgraduate studies in ICT.

I am hoping to share my experience of working in multidisciplinary areas.

Enabling computer systems to work in harmony with individual users and organisations is the key to effective exploitation of the digital age and this message has to be communicated effectively to the public.

The British Science Festival provides a great opportunity for raising the profile of ICT in general. As it is being prepared and several of my colleagues at Aston have accepted events, I can help by communicating the outcome of ExICTe and coordinating any resulting

action.



<b>Name:</b> Dr Parisa Eslambolchilar	<b>Institution/Organisation:</b> FIT Lab/Swansea University
<b>e-mail:</b> p.eslambolchilar@swansea.ac.uk	
<b>1. Brief summary of your track record</b>	
<p>Dr. Eslambolchilar is a lecturer at Swansea University since March 2007. Her research interests are in the area of dynamic, continuous multimodal interaction with mobile devices, mobile human-computer interaction (HCI), and persuasive technologies. She is a regular reviewer for ACM CHI and Mobile HCI conferences and International Journal of Mobile HCI. She has given many talks on continuous interaction and novel interaction techniques with small computing devices, including talks at SONY Research Institute (Paris), SHARP research lab (Oxford), and Knowledge Media Institute (Milton Keynes). Her four full publications were entered into the RAE 2008. Parisa is a co-investigator in a few EPSRC funded projects including "CHARM:shaping consumer behaviour by informing conceptions of normal practice" (ref EP/H006966/1). CHARM proposal brings Parisa's expertise into social behaviour research, mobile devices, persuasion &amp; active lifestyle.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
<p>Yes – I have been presenting my research to public in an annual exhibition in Dublin from April 2003 to September 2006. I have also given public talks in SHARP (Oxford) and Sony (Paris). My RA, Mr. Byrne and myself have participated in Science Days in Wales. I am an active member of the department for Open Days' events including giving presentations and talks to A-level or GCSE students and their parents. I have organised Discover! Workshops for 12-14 year-old school girls to engage them with science particularly Computer Science. I am the ICCT liaison officer at Computer Science Department/Swansea University. This allows me to engage with pupils interested in Computer Engineering as well as teaching members of Engineering Department.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>I would like to participate in this workshop because I am confident that my expertise in</p> <ol style="list-style-type: none"> <li>1) Designing interaction for mobile computing devices,</li> <li>2) Mobile persuasion and persuasive technologies,</li> <li>3) Continuous interaction, such as gestures,</li> <li>4) Dynamic systems and hybrid dynamic interaction,</li> <li>5) Interaction with medical devices/ healthcare systems,</li> </ol> <p>will encourage a broader interest in raising the profile of ICT. I am keen through this workshop I</p> <ol style="list-style-type: none"> <li>1) Extend my research to other areas,</li> <li>2) Gain another team work experience,</li> <li>3) Meet strangers from a different background,</li> <li>4) Learn about other people's experience in ICT.</li> <li>5) Grow my network of academics and non-academics (industry) in ICT community.</li> </ol>	

<b>Name:</b> Professor Terrence Fernando	<b>Institution/Organisation:</b> University of Salford
<b>e-mail:</b> t.fernando@salford.ac.uk	
<b>1. Brief summary of your track record</b>	
<p>Professor Fernando is the Director of the ThinkLab (<a href="http://www.thinklab.salford.ac.uk">www.thinklab.salford.ac.uk</a>) and the Director of the Future Workspaces Research Centre at the University of Salford. His currently conducting research to develop novel <b>interactive spaces</b> (physical and virtual) for creating new working environments which can enhance creativity, improve productivity, promote social interaction and support knowledge management within distributed organisations. He has a broad background in conducting multi-disciplinary research programmes involving large number of research teams in areas such as distributed virtual engineering, virtual building construction, driving simulations, virtual prototyping, urban simulation, and maintenance simulation. As a part of the EU funded Future_Workspaces roadmap project, Prof. Fernando brought together over 100 companies and research centres, from areas such as aerospace, automotive, building construction, architecture, multi-modal interfaces, system architecture, networking, human factors etc, to define a 10 year European vision for future collaborative engineering workspaces. He was a leading researcher in the OpenFutures project which studied the challenges in creating "Future Cenrtes" by bringing physical perspective, technological perspective, methodological perspective and organisational perspective. He was also a core member of the INTUITION VR network involving over 58 institutions across Europe. Currently he is the technical manager for the EU funded CoSpaces project which is developing technologies for future collaborative workplaces.</p> <p>He has worked with researchers from different disciplines (engineering, construction, IT, social science, human factors, transport) etc and worked with large number of industrialists from sectors such as aerospace, automotive, construction, Police, City Councils. He has been instrumental in developing the ThinkLab which is an inspiring space for demonstrating the value of ICT for many disciplines and get them excited in long term research.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
No.	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<ul style="list-style-type: none"> <li>• I have used visual technology over 20 year and I feel that you can excite people about ICT through such visual technology.</li> <li>• It is also important to see the benefits of ICT when you are trying to excite people (fun, business value, social value etc). I have experience in developing such applicatuions.</li> <li>• ICT can be presented within and exciting environment to capture the imagination of people. By combining ICT with the physical environment, we can create exciting ambient environments. ThinkLab is such an environment. I could show the value of such an environment in exciting people about ICT.</li> <li>• ICT become an exciting area, when you are thinking about how ICT could be used to help us to create new working environment, new media spaces within homes and schools. I could bring such views to the discussion.</li> </ul>	

**Name:**

Professor Tarek Hassan

**Institution/Organisation:**

Loughborough University, Civil and Building Engineering Department

**e-mail:** T.Hassan@Lboro.ac.uk

**1. Brief summary of your track record (2,000 character limit)**

Leading research in ICT domain with particular focus on applications to the construction industry. Particular success in securing research grants from the European Commission within the ICT and NMP programmes. This includes 12 EU research grants 2 of which as coordinator and leading the research work, total value of these projects 35 Million Euros with direct funding of 5 Million Euros to my institution. Appointed expert evaluator and reviewer by the European Commission for proposals / projects within the ICT programme. Conference chair and key note speaker for several international conference. Selected member to the advisory board of the REEB European project "European strategic Research Roadmap to ICT enabled Energy Efficiency in Buildings". Publications record include over 120 publications, 35 of which are in refereed academic / scientific journals. Invited referee for many international scientific journals. Invited member to the European Construction Technology Platform (ECTP) focus area processes and ICT. Participation in several roadmapping activities with the European Commission to set the strategic research agenda and Implementation Action Plan for ICT research in Europe. My expertise include applications of advanced ICT for energy efficiency via monitoring & control using wireless sensor networks, embedded systems & smart metering, integration between construction collaborative platforms and building management systems to create high performance energy efficient (zero or positive energy) buildings, interface between smart buildings /grids /lighting. Earlier research work include pioneering research on legal issues involved in the exclusive use of ICT for the exchange of information and documentation, and the development of tools, methods and techniques to improve collaborative working environments and overcome the barriers which impede their wider deployment, and the development of solutions for the interoperability of heterogeneous platforms.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**My participation in public engagement activities has mainly been at a European / International level for dissemination of research results of my projects. As most of my research experience has been acquired through major EU funded projects, there has been always emphasis from the European Commission on "impact creation" activities. This has been mainly achieved by the dissemination of the research results to the research community, industry, policy makers & the general public (for awareness raising), as a first step to the uptake of results. Dissemination to the last 3 categories had to be in jargon-free language focusing on functionalities rather than specifications and impacts rather than methodologies. I have been successful in achieving this as demonstrated by the uptake of industry companies to developments from my research and incorporation of key findings from my research in EC policies**

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

This event is of interest to me as ICT is the main focus of my research. I believe that I can bring to the workshop the knowledge gained from my participation in and leadership of EU projects within the ICT programme particularly the strategic projects which set the roadmap and the agenda for ICT research in Europe to benchmark the UK ICT research against Europe and identify best practices and / or lessons learnt. Also my interest is to work with the other selected group of experts to underpin the benefits and impacts arising

from ICT research (e.g. ICT for energy efficiency) to promote it to the general public and encourage their broader interest and enthusiasm in ICT research at large.

<b>Name:</b> Tim Jackson	<b>Institution/Organisation:</b> University of Birmingham
<b>e-mail:</b> T.J.Jackson@bham.ac.uk	

**1. Brief summary of your track record (2,000 character limit)**

Interdisciplinary research on electronic materials and devices, mainly based on thin films and covering materials science, physics and microwave engineering. The research falls within the remit of the ICT area, in that it considers materials and processes that might be used in components and devices of the future. Dissemination of research outputs has included publication in the literature from all three fields, resulting in over 40 journal papers and over 20 conference papers. Contributions to international meetings have included tutorial talks at and International Conference on Electroceramics (Seoul, 2005) and European Microwave week (Manchester, 2006). Other conference talks include 2nd Nordic Seminar on Industrial Applications of Superconductors (2006) and the Ampere Colloquium on Application of Nuclear Techniques to Solid State Physics (Pisa, 1999). Recent seminar and workshop talks have been given at the University of Aston, University of Naples, and the National Physical Laboratory. Our research group has just finished editing a book, "Ferroelectric Films at Microwave Frequencies" which will be published by Research Signpost early next year.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**A range of activities over 14 years, including:**

**(i) radio interviews on Naked Scientists (October 2006) and Supersonic FM (a school radio project for Science Week, March 2008)**

**(ii) technical consultancy for a Theatre in Education play developed in collaboration with the School of Drama at the University of Birmingham and toured to local schools. The objective of the piece was to raise awareness of the importance to our everyday lives of science and technology and ICT in particular. The play included creative workshop sessions in which the audience imagined inventing things that would change their lives. A PPE proposal extending this work is currently being considered by EPSRC**

**(iii) writing for science magazines, including one technical and one non-technical article for Physics World (1995 and 1996 respectively) , a conference report for Magnews (1999) and an article for school science magazine Catalyst (Feb 2009)**

**(iv) demonstrations and lectures organised by the Institute of Physics for the general public. These are a teachers' development day (July 2009) run by the Institute of Physics and two talks for sixth form students interested in Physics (July 2007 and November 2009)**

**(v) demonstrations at University open days.**

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

My PPE work has suggested a low level of public awareness of the impact of ICT on their daily lives and of the career opportunities in the area. At a recent talk to sixth form students, the essential roles and opportunities for power engineers in developing a sustainable and stable energy supply seemed to come as a surprise to most of the audience. Similarly, there seems to be little awareness of the excitement and rewards

of careers in these ICT, or the the career pathways that exist. I could contribute examples of these findings and analysis of the activities in which I have been involved in efforts to address these issues.

<b>Name:</b> Prof. Stephen Jarvis	<b>Institution/Organisation:</b> University of Warwick Computer Science
<b>e-mail:</b> Stephen.Jarvis@warwick.ac.uk	
<b>1. Brief summary of your track record (2,000 character limit)</b>	
<p>I have been in academia (at the Universities of Oxford and Warwick) for the past fifteen years and now hold a Professorship in Computer Science at the University of Warwick.</p> <p>I am currently a Royal Society Industry Fellow. These Fellowships are designed to enhance knowledge transfer in science and technology between those in industry and those in academia. The Fellowships are extremely competitive - around 6 Fellowships are awarded per round and applicants come from all areas of life and physical sciences, including engineering. The Fellowship funds 50% of my time; I use this time to simulate aircraft engines at Rolls-Royce in Derby.</p> <p>I am interested in how complex simulations (such as those used to explore the thrust and efficiency of an aircraft engine) can be run on modern supercomputers.</p> <p>This topic addresses two questions:</p> <p>(1) How can a Rolls-Royce turbofan engine (found on an Airbus A380 or a Boeing 777), and which generates over 90,000 horsepower on take off (equivalent to the power of about 1,200 family cars), be modelled on a computer, and how can this model be used to explore optimum engine design?</p> <p>(2) How can this engine model then be run on one of today's highly intricate supercomputers, which themselves can simultaneously execute millions of mathematical calculations per second (the World's fastest computer can do more than a thousand trillion operations a second)?</p> <p>These kinds of complex computing problems are ubiquitous - whether it be in drug design, weather prediction or in the design of more efficient aircraft engines.</p> <p>Throughout my career in computing I have worked (and published) with NASA Ames Research Centre, MIT Centre for Space Research, IBM and Microsoft Research, Fujitsu Labs Europe and the NEC European Research Laboratory, amongst other. My work has featured in articles in popular computing magazines (including 'PC Plus' and 'Linux Pro').</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)</b>	
<p><b>In addition to my public engagement activities with the Royal Society, I provide two further examples below:</b></p> <p><b>1. I was one of the keynote speakers during the National Science Week in 2004. IBM held a series of talks and workshops at their Hursley Park Laboratory aimed at promoting computing science. I was invited to speak on 'Supercomputing and Code breaking the DNA Microdot!' to 6th form students from local schools and colleges.</b></p> <p><b>2. I have also delivered a number of other public lectures. In 2007 I gave a keynote lecture to dignitaries from the Ministry of Defence and the UK Office of Science and Technology, for the opening ceremony of the Redwood Supercomputer (then one of the most powerful supercomputers in the UK). My talk focussed on the applications of supercomputing in the UK, including in weather forecasting, in cosmology and in defence.</b></p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)</b>	
<p>I believe that I can help.</p> <p>The reputation of computing science in the UK is very poor. This is despite there being a</p>	

desperate need in industry for good computing graduates. There are a number of reasons for this, including: a lack of knowledge at 6<sup>th</sup>-form level as to what the 'science' in computer science actually is; a detachment between everyday living (using mobile phones, Facebook, iPlayer etc) and the computing that supports this; the lack of knowledge relating to the potential that computing can offer (in future healthcare, tackling climate change, understanding disease pandemics etc).

In my research and in my teaching I try to join up computing 'as a science' with everyday industry application. Fundamentally I believe that we need more ambassadors. I believe that I have the experience and credibility to demonstrate this link between computing science and everyday industry-strength applications.

A great deal can be achieved through public lectures, school tours and articles in the popular press. However, we are likely to reach a wider audience through creative youtube-style podcasts and 6<sup>th</sup>-form-level tech-updates on Twitter etc.

It is important that the right people are selected for this scheme. Some quotes from [ratemyprofessor.com](http://ratemyprofessor.com) may persuade you that I can indeed help: "Definitely my favourite lecturer of all time", "A CS lecturer with charisma...who'd have thought it", "Best lecturer I've ever had! Very entertaining and grips your attention...it made me want to attend every lecture, even when I was ill! Definitely take his class if you can."



<b>Name:</b> Neil McBride	<b>Institution/Organisation:</b> De Montfort University
<b>e-mail:</b> nkm@dmu.ac.uk	

**1. Brief summary of your track record (2,000 character limit)**

I have written on the state of ICT for the Times Higher, and on A level computing. Having analysed the problem as partly one of curriculum at various levels, I contributed to the development of new International Baccalaureate Computing curriculum as part of the course development team. My comments on the state of ICT and computing contributed to a Thinking Through Computing Conference held at the University of Warwick in November 2007.

I have researched in IT service management and spoken at IT service management conferences. I have addressed the need to teach ICT in the context of how organisations have shifted from a technological focus to a service focus. I developed a BSc in ICT at De Montfort University which now has 60 students. This degree sets ICT practice in the context of service-centric IT practice in organisations.

McBride, Neil (2007) Erase old programme and launch new version. Times Higher Education Supplement, February 9th 2007, p 14.

McBride, Neil (2007) The Death of Computing. British Computer Society Future of Computing, URL: <http://www.bcs.org/server.php?show=ConWebDoc.9662>

McBride, Neil (2008) The State of A Level Computing, British Computer Society. Professional Issues, URL: <http://www.bcs.org/server.php?show=conWebDoc.19144>

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**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

I have not previously participated in public engagement activities, beyond speaking at various industrial conferences.

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**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

1. Part of the problem with ICT derives from the curricula as students experience it right from nursery through to university. A complete review and renewal of syllabus is needed. There should be new syllabus which reflect the role of ICT in society and this will mean placing technical practice in its social and application context. My curriculum analysis and development experience will be valuable in this area.
2. The raw study of the technology of IT is viewed as boring and geekish. It is the understanding ICT in its social context and its problem solving capability that ICT is exciting. The application of ICT and its study is interdisciplinary. I provide an interdisciplinary approach. I have written papers in sociology, management and geography, and have an academic background in molecular biology, so I can link disciplines.
3. Getting across the excitement of ICT requires new approaches to communication. I write poetry; I have written about poetry in the Times Higher; I have in the past written radio plays (unpublished) and can bring new ideas for presenting the challenges of ICT to the table.



**Name:**

Greg Michaelson

**Institution/Organisation:**

Heriot-Watt University

**e-mail:** G.Michaelson@hw.ac.uk

**1. Brief summary of your track record (2,000 character limit)**

My research is in the broad area of formally motivated computing with a strong focus on the design and implementation of programming languages, in particular functional languages for parallel, distributed and mobile deployment. I have held major grants from SERC/EPSRC, EU and DTC to support this work. Most recently, I have been developing the novel Hume language with Prof Kevin Hammond at St Andrews, aimed at systems where strong assurance is needed of tight bounds on use of resources such as time, space and power. Hume has enjoyed considerable international interest and collaboration both academically and in industry. Currently I co-hold a substantial EPSRC grant with Prof Hammond and colleagues at Heriot-Watt, Edinburgh and Queens Belfast to explore the use of Hume for sensor processing on heterogeneous architectures.

I have also been conducting long standing research into gender and computer mediated cooperation with Prof Margit Pohl at the Vienna University of Technology, exploring differences between face to face, one-to-one email and email list interactions.

I am very active in the community, publishing widely, and helping organise and referee many international events. I helped found the International Symposia on Trends in Functional Programming. I have co-supervised 14 PhD students and examined 22.

I have been Professor of Computer Science since 2005. I was Head of Department from 2003-2008. I helped found and currently convene the Scottish Heads of Computing group, a forum for managers of University Computing Research and Teaching.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**I have no experience of or training in public engagement per se.**

**However, I am a published author, with short stories in Scottish Book Collector, Tetualities, Science and Intuition 1 and New Writing Scotland. My 2008 novel "The Wave Singer" (Argyll, 2008) was shortlisted for a Scottish Arts Council/Scottish Mortgage Trust First Book Award. Currently, I am the recipient a Scottish Arts Council Writers Bursary to write a sequel.**

**I have published popular articles on computers in cartoons, and contributed to the UK Women in Computing initiative.**

**Four years ago, I initiated, and currently coordinate, the Heriot-Watt University Programming Challenge aimed at high achieving secondary school students in Scotland.**

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

I think that ICT has a poor public profile both because of external misconceptions and internal insularity. Externally, there is a failure to recognise that computer hardware and software, the key world technologies, are undepinned by Computing, which is a major discipline in its own right. Without sustained, autonomous research in Computing, sustained social and economic benefits of wider ICT will simply not be realisable. The UK has long been internationally leading in Computing: it is a shame that this is hidden behind bland, misunderstood terms like IT and ICT. EPSRC already gives substantial support to what is clearly Computing research. This should now be made explicit with a new Computing programme formed from the Computer Science and People and Interactivity sub-programmes.

Internally, the Computing community appears insular and inward looking, despite the enormous practical impact it actually has. Thus, the Computing Grand Challenges, while certainly grand and challenging in pure research terms, really do not match up to very

public scientific and engineering successes like space, renewable energy, disease cure/control etc.

Two major areas of Computing activity combine considerable public understanding with deep research. Firstly, interaction with computers is compromised by their inability to understand human language. UK success in natural language interaction would give a commanding international lead in a revolutionary new technology. And there will be considerable public enthusiasm for this well understood yet science fiction modality. Secondly, computers consume significant amounts of energy. Low carbon computing, seeking to minimise all aspects of resource use, offers another challenging but highly publicly engaged activity. Success would again be of considerable benefit to the UK, socially and economically. Large research programmes in these areas could galvanise the Computing community and enhance its public profile.

<b>Name:</b> Prof John Nelson	<b>Institution/Organisation:</b> University of Aberdeen
<b>e-mail:</b> j.d.nelson@abdn.ac.uk	
<b>1. Brief summary of your track record</b> <p>John Nelson is Professor of Transport Studies and Director of the Centre for Transport Research at Aberdeen University where he is also the theme leader for <i>Accessibility and Mobilities</i> in the RCUK Rural Digital Economy Hub at Aberdeen University. He has a long-standing interest in the application of new technologies to transport problems, especially public transport systems. He is particularly known for his work in the development and implementation of flexible transport systems and was lead author of Department for Transport sponsored guidance on implementing Telematics-based Demand Responsive Transport Services issued to every UK local authority (2006). John's most recent book advances the concept of "infomobility" and illustrates the use and distribution of dynamic and selected multi-modal information to users, both pre-trip and, on-trip.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b> <p>Although I have not formally participated in EPSRC-funded PE activities I am indirectly involved in the PE programme at Aberdeen University in my capacity as Director of Research and Commercialisation in the College of Physical Sciences.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b> <p>I am very enthusiastic about the (appropriate) application of ICT solutions to real world problems. I am also keen to ensure that there is on-going engagement with relevant user communities and a strong academia / industry interface. For example, part of my role in the Centre for Transport Research involves regular liaison with senior colleagues in FirstGroup (the UK's largest passenger transport provider). This has led to a number of transferable joint activities including in-house workshops, joint projects and proposals, and a key industry interface that is helping us to secure high profile initiatives such as the Rural Digital Economy Hub. I can thus bring direct experience of working with a diverse range of user communities.</p>	

<b>Name:</b> Dr M. Rajarajan	<b>Institution/Organisation:</b> City University London
<b>e-mail:</b> <a href="mailto:r.muttukrishnan@city.ac.uk">r.muttukrishnan@city.ac.uk</a>	
<b>1. Brief summary of your track record</b>	
<p>I have been working in the area of information engineering for the last 15 years. Firstly in the area of fibre optics communications and then in the security and privacy in mobile and wireless devices and systems. Data security is important for the future growth and success of the ICT area. I also lead one EPSRC funded project in the area of identity management and another Indo-UK project in the area of mobile security for mobile banking, mobile healthcare and mobile entertainment. In recognition of my contribution to the security and privacy research areas the Science and Innovation (SIN) Division of the British Deputy high commission office in Bangalore India has appointed me as the Working group leader for the Indo-UK Cyber Security Research. The group has more than 60 academic, industrial and government members who regularly consult and contribute to the development of policy documents. I also work closely with Whitelooop an SME in the creative sector in UK in developing mobile applications for mobile learning. I am also looking at developing simple and user friendly mobile applications for the senior citizens in the UK. This will help the retired population to self train using mobile devices and can become employable after their retirement age.</p> <p>I have also been looking at cloud computing security, critical national infrastructure protection, secure smart meters for next generation energy utilisation monitoring and alert monitoring for network and ICT systems threats in collaboration with BT. Recently we have signed an agreement with Monitise a mobile banking platform provider to deliver mobile money for the un-banked populations in the rural villages of India &amp; Bangladesh.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
<p>As part of the Indo-UK cyber security initiative I have been actively educating the local public (i.e. awareness building) in India on the cyber security threats. This involves teaching the parents and school kids about the dangers of using social network sites and the Internet. We have also developed basic Internet security house keeping modules for parents. We also organised a bus campaign with University students to educate the rural kids about the dangers of using social networks and the Internet. This was very well received by the general public and the parents. We are also planning to do a similar activity to promote mobile money concept to the unbanked population in India in April 2010. I also gave a talk entitled "Cybercrime: A Digital War" at the India Merchant Chambers Mumbai in March 2009 to the Indian public. This was well received and more than 250 participants attended this event. I have also presented the ICT tools that are available for the forensics analysis to the police officers in India. I strongly believe that there are several good quality research that is been undertaken in the ICT sector that needs public awareness and end user engagement for real impact to the society.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>I have a general passion for the ICT sector. I have been working very closely with the UK and overseas industries to research develop and promote new ICT solutions to enhance the 'quality of life' of the UK and global citizens. I have taken two Royal Academy of Engineering secondments in the last 6 years to go to major ICT sector industries Logica and BT (presently) to understand the latest ICT trends in industry. Currently as part of my secondment I am working with BT to develop a roadmap in the ICT space to understand the next generation ICT requirements to identify areas where we need to innovate for the future growth and success of the ICT sector. Hence I can give my views, opinions and outcomes of the feasibility studies I have done to date in this space. I am also closely working with Whitelooop to come up with new and novel mobile applications for the creative</p>	

industries. As part of this initiative we have identified few novel applications that we feel are interesting for the ICT community and I will be able to share these ideas with the Workshop participants.

<b>Name:</b> Clare Reddington	<b>Institution/Organisation:</b> iShed/The Pervasive Media Studio
<b>e-mail:</b> clare.reddington@watershed.co.uk	
<b>1. Brief summary of your track record</b>	
<p><b>Clare is Director of iShed and the Pervasive Media Studio.</b></p> <p>Clare works with industry, academic and creative partners to deliver collaborative research around digital technology and the creative industries. She likes finding new talent, supporting great projects, showcasing new ideas and playing games.</p> <p>Clare joined Watershed in Bristol in 2004 to work with HP Labs on utility computing animation project SE3D. In 2007, Clare set up iShed CIC as a subsidiary of Watershed, to initiate and support creative technology research and development. Projects include the R&amp;D investment scheme Media Sandbox, Light Up Bristol, which mapped 400ft projections on to Bristol's Council house, and the Creative Technology Network.</p> <p>Before joining Watershed, Clare organised the Cheltenham Festival of Science, an annual five day festival exploring, promoting and encouraging debate around contemporary scientific development.</p> <p>Clare is a member of the Arts and Humanities Research Council Advisory Board and has acted as an assessor for the Technology Strategy Board's Creative Industries funding and is a finalist in the British Council's UK Young Interactive Entrepreneur 2009.</p> <p>Clare also assessed for the EPSRC Research In the Wild Call.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
<p>Before joining Watershed, Clare organised the Cheltenham Festival of Science, an annual five day festival exploring, promoting and encouraging debate around contemporary scientific development.</p> <p>All of the projects iShed and The Pervasive Media Studio deliver have a public engagement element to them.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>This event is of interest to make new links with researchers working in ICT for iShed and the Studio, to discuss shared issues around engaging the public in ICT research, to feed into potential project ideas and promote the studio/iShed as a delivery agent.</p> <p><b>Contribution:</b></p> <p>Creative Industries perspective (particularly around interdisciplinary creative technology projects)</p> <p>Knowledge of working with SMEs/Micro Companies</p>	



Background in public engagement projects

<b>Name:</b> Nigel Thomas	<b>Institution/Organisation:</b> Newcastle University
<b>e-mail:</b> nigel.thomas@ncl.ac.uk	
<b>1. Brief summary of your track record</b>	
<p>I am a Reader and Director of Teaching in the School of Computing Science at Newcastle University, having previously been a lecturer at the University of Durham from October 1998. I have worked for many years in the field of performance engineering and I am known for my work on model decomposition in stochastic process algebra and queueing theory. Some of the most significant results in this area include characterisations of reversibility and the Boucherie product form (with Prof Jane Hillston at Edinburgh) in the stochastic process algebra PEPA, the introduction of the non-product form decomposition known as quasi-separability, the formalisation of the concept of behavioural independence and an iterative solution based on component substitution. Currently I am on sabbatical at Imperial College London working with Prof Pete Harrison on extensions to his Reversed Compound Agent Theorem.</p> <p>I have also worked in the area of routing and scheduling in queueing systems and was one of the instigators of the area of performability modelling of Grid systems in the UK, organising a number of workshops, editing two journal special issues and co-authoring a survey of open issues on the topic as well as actively researching some problems in scheduling and resource allocation.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
No.	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>I believe the public perception of ICT is one based on the applications that people use, rather than the understanding of systems. This permeates to potential undergraduates, who expect their degree to be primarily about programming, and little else. My research (like much of the EPSRC portfolio) is quite far removed from this perception, and yet is part of the fundamental underpinnings of the subject. A raising of public perception the breadth of what ICT constitutes would greatly assist communication between research and other potential stakeholders in the HE sector, such as school students, school teachers and potential employers from other sectors.</p>	

<b>Name:</b> Lorraine Warren	<b>Institution/Organisation:</b> School of Management, University of Southampton												
<b>e-mail:</b> lw4@soton.ac.uk													
<p><b>1. Brief summary of your track record (2,000 character limit)</b></p> <p>Interested in VALUE CREATION from ICT, especially in Digital Economy/creative industries, on Steering Group of <a href="http://www.creatorproject.org">www.creatorproject.org</a></p> <p>For more information see <a href="http://www.doclorraine.com">www.doclorraine.com</a></p> <p><b>EMPLOYMENT HISTORY:</b></p> <p>2004 – present, University of Southampton, School of Management, Senior Lecturer in Entrepreneurship and Innovation</p> <p>2002 – 2004, Lecturer in Entrepreneurship, Loughborough University Business School</p> <p>1995 - 2002, Senior Lecturer, Department of Corporate Strategy, University of Lincoln</p> <p>1993 - 1995, Lecturer, School of IT, Hull College</p> <p>1991 - 1993, Project Manager, Multimedia-Based IT for the Humanities, HEFCE/ITTI project, School of European Languages and Humanities, University of Hull</p> <p>1985 - 1990, Boulsworth Educational Services, operating as independent educational consultant; also as proprietor of agency co-ordinating provision of training/education requirements to clients</p> <p>1983 - 1985, Research Associate, Department of Chemistry, State University of New York at Binghamton, USA</p> <p><b>QUALIFICATIONS:</b></p> <table> <tr> <td>1983</td> <td>PhD (Chemistry)</td> <td>University of Wales</td> </tr> <tr> <td>1980</td> <td>BSc (Hons) First class (Chemistry)</td> <td>University of Wales</td> </tr> <tr> <td>1991</td> <td>MSc (Computing)</td> <td>University of Bradford</td> </tr> <tr> <td>1995</td> <td>PGCE (post-16)</td> <td>University of Huddersfield</td> </tr> </table>		1983	PhD (Chemistry)	University of Wales	1980	BSc (Hons) First class (Chemistry)	University of Wales	1991	MSc (Computing)	University of Bradford	1995	PGCE (post-16)	University of Huddersfield
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<p><b>2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)</b></p> <p>1. From 2003-2005, I was a Science and Engineering Ambassador in the Midlands (established while I was at Loughborough University)</p> <p>2. Active participant in Café Scientifique in Southampton, Portsmouth, Salisbury</p> <p>3. Currently been participating in and organising online and offline PR events for Dr Stuart Clark, <a href="http://www.stuartclark.com/">http://www.stuartclark.com/</a>, one of Britain's best known science writers. I organised a talk on December 9 2010 at Southampton University, around 30 people from outside the uni attended despite bad weather. I live-tweeted the event on twitter. I also help popularis his live sessions on twitter #askdrstu.</p>													

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

I think there is great potential to create value in the space presented by Web 2.0, social media, geolocation, smartphones, laptops, government data. I think young people would be excited by this if they knew more about the space and how to work in it, say developing apps for smartphones, or working with government data in local communities. I have been developing the below as a NEW conceptual schema (it looks better as a table/diagram but this form doesn't support that format) to support this work, this might be helpful to the workshop and helpful to me in continuing my thinking:

Consumers – use what is already available but in a basic and limited way

Potential for value creation = LOW

Largely individualised activity

Use email, access information on internet

Register accounts on Flickr, Twitter, Facebook, but little use beyond reading or storage of limited amount of information

Use non-smart mobile phone, talk, text, photo, webcam

Watch YouTube, TV, download mp3

Access Digg, Delicious

Play simple games, maybe online with others

Creators – use what is available to create their own material

Potential for value creation = MEDIUM

Access and join existing networks

Build collections of links on sites such as Digg, Delicious

Create video, picture, sound file, upload to YouTube, Twitter, Flickr

Use Facebook for social events largely among existing friends

Use smart phone, maybe download games

Participate in distributed games such as World of Warcraft

Keep blog and update regularly

Disruptors – create new networks and applications

Potential for value creation = HIGH

Use social media to develop new activities, maybe with people outside their existing sphere of influence

Develop activities based on real time events and breaking news

Main space of professional/personal identity is online, rigorously maintained

Build new games

Look out for new applications and technological developments

Download applications onto smart phones and extend them

<b>Name:</b> Prof. Jon Whittle	<b>Institution/Organisation:</b> Computing Dept, Lancaster University
<b>e-mail:</b> whittle@comp.lancs.ac.uk	

**1. Brief summary of your track record (2,000 character limit)**

I am a Professor of Software Engineering and a Royal Society Wolfson Merit Award holder. After spending seven years working as a researcher at NASA Ames Research Center and then two years as an Associate Prof. at George Mason University, I returned to the UK in Sept 2007. Since then, I have begun to build a group which I am calling "Software in Society": all group projects are connected by an emphasis on understanding how software is built, but more importantly, what is software's impact on society and how can it be measured. I have a history of working closely with industry, having led projects or collaborations with Motorola, CESA, the FAA, the US Federal Railroad Administration and Aerospace Corporation. My research has been recognized by a number of Best Paper awards, including the IEE Software Premium prize. I have served on over 30 international program committees and serve as Associate Editor/Guest Editor for many influential journals.

I currently lead 2 EPSRC projects that involve significant engagement with the public. The first, VoiceYourView, aims to capture in real-time the public's perception of safety in places in which they live and work. This is a £855K multidisciplinary project funded under the Digital Economy programme and is in collaboration with designers, computer scientists, and ethnographers. The second, EA-MDE, brings together computer scientists and psychologists to understand current software trends and why some techniques are more successful than others in revolutionising industrial practice.

**2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)**

**I am relatively new to the UK, having taken up the position at Lancaster in Sep 2007. Therefore, I do not have a long track record of public engagement in the UK. However, this is something I am interested in pursuing.**

**I was recently asked to participate as a panelist at Comixed, a Manchester Science Festival event, where five panelists led discussions on important scientific challenges. I was asked to talk about the Digital Economy.**

**3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)**

I do believe ICT has a poor public profile. I have realized this through my projects that involve public engagement. For example, at the Manchester Science Festival event mentioned above, I tried to paint a picture of how technology could change our lives; and what such a life would look like in 2020. I was surprised by the amount of fear that the public had about this vision. There was clearly a lot of suspicion about technology and a reluctance to embrace it. There were many comments deriding technologies such as mobile phones, facebook, Second Life etc. I tried to argue (perhaps unsuccessfully) that all technologies have benefits and drawbacks. For example, Second Life has made people millionaires and couples have found each other on Second Life. Disabled people, with limited mobility, have found Second Life to be a great way to meet friends. On the other hand, there are clear drawbacks with such technologies related to their effect on levels of

exercise and social integration. I think the public needs to understand better these issues before they will fully embrace ICT.

I have also found a lot of reluctance to embrace ICT on my VoiceYourView project. The technology developed in this project has been trialed at Lancaster Library, which has given me an understanding of the fear that many members of the public have for technology -- even when it has been specifically designed to assuage those fears.

In terms of what I can contribute to the workshop, I think the answer is twofold. Firstly, I have quite a lot of experience in working with the public and trying to introduce new technologies. Secondly, I have a serious hobby as an actor/dancer/theatre director. I believe that one way to positively change the public profile of ICT is through entertainment, and I have some thoughts on how that might be done.

<b>Name:</b> Kevin Warwick	<b>Institution/Organisation:</b> University of Reading
<b>e-mail:</b> k.warwick@reading.ac.uk	

**1. Brief summary of your track record**

Professor of Cybernetics, UoR: Interests – Biomedical Engineering, Robotics, Artificial Intelligence, Control Systems, Computing

Many newspaper + magazine articles and radio appearances

TV appearances partially listed at <http://www.imdb.com/name/nm0990120/>

Incl. BBC News, Late Night with Conan O'Brien (NBC), Future Fantastic and much international

**2. Have you previously participated in public engagement activities? If do please provide a brief description.**

See above +

EPSRC PPE awards – School Robot League (awarded EPSRC Millennium Award) and Androids Advance – robotics competitions for schools.

Robots on display in Science Museum (London) and museums in Birmingham, Newcastle, Linz

Regular presentations at Schools, colleges, universities and companies see Wikipedia (Kevin Warwick) entry for partial listing

Presented year 2000 Royal Institution Xmas Lectures

**3. Why is this event of interest to you and what contribution are you hoping to make?**

Need to get an exciting message out

Sharing experiences – happy to discuss my own contribution

Hopefully will learn from others

<b>Name:</b> Prof. (Emeritus) Heinz Wolff	<b>Institution/Organisation:</b> Brunel University, Uxbridge Middlesex
<b>e-mail:</b> Heinz.wolff@brunel.ac.uk	
<b>1. Brief summary of your track record</b>	
<p>Head of Division of Bioengineering National Institute for Medical Research, 1962-1971.</p> <p>Head of Bioengineering Division MRC Clinical Research Centre, 1971-1983</p> <p>Founder of Brunel Institute for Bioengineering and director 1983-1995.</p> <p>Member and chairman of various policy committees European Space Agency 1970-1992, concerned with manned space flight and the scientific exploitation of microgravity.</p> <p>Approximately 30 years of TV and radio mostly in the area of the popularisation of Science and Technology. (Great Egg Race and that sort of thing.)</p> <p>Now (I am nearly 82) concerned with the technology and cultural change required to deal with an ageing population in a difficult economic climate, Still support research team of 5, from lecture earnings personal resources and the stock exchange.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b>	
<p>Extensively. Apart from Radio and Television, most of which is pre-1990, I still lecture extensively to sections of the public (this makes some of the money to support my research). Quite recently I gave one of the 40<sup>th</sup> anniversary lectures for the Open University.</p> <p>I also do so on behalf of Brunel University, by visiting schools, speaking to the U3A and taking part in the University public engagement program, last year.</p> <p>The University awards Heinz Wolff Fellowships in Public Engagement to members of the staff who want to gain experience and train in the technique of communicating with the public on scientific, technical and medical matters.</p>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make?</b>	
<p>I have fallen victim to a condition, which tend to turn over-aged scientists and engineers into part-time philosophers. I spend a good deal of my thought and talking time about what the future has in store for us in the UK and for the West in general.</p> <p>ICT has an obvious function in our future, but if managed in a manner as it is at present, its function is on balance, not necessarily beneficial.</p> <p>It is not surprising that the public in general shows little interest and even fear, because they have discovered that on a large scale, like NHS, CRB, CSA, Tax Credits, Student Loans, ICT just does not work. Add to this Cyber Crime in its various forms, and the possibility of Cyber Warfare, the picture looks a little bleak.</p> <p>I am quite prepared to talk about this and possible causes and solutions. I believe that the major task which faces the ICT community is to civilise and tame the subject, rather than pushing and rewarding technological advance in hardware. It could even be that there are conditions a little analogous to a nuclear reaction going critical, where IT systems above a certain level of complexity are not possible and that there might be real advantages in limiting the size and possibly even the speed of systems. The Stock and Financial Services Market almost certainly (in my opinion), runs too fast for stability.</p>	





<b>Name:</b> Kirk Woolford Kirk Woolford	<b>Institution/Organisation:</b> University of Sussex
<b>e-mail:</b> k.woolford@sussex.ac.uk	
<p><b>1. Brief summary of your track record</b></p> <p>Kirk Woolford is a creative and technical director who works closely with digital and creative industries. Prior to returning full-time to academia in 2005, he set up and directed web development and video games production companies in New York, London, and Amsterdam -- working with partners including the Economist Group, BBC, Channel 4, FilmFour, Illuminations, Babel Media, and THQ to produce online education and entertainment systems. His research is practice-led and he continues to actively exhibit his work in international venues including Shanghai eArts, ARCO Madrid, Art Cologne, P.S.1. (MoMA), Venice Biennale, Ars Electronica, and SIGGRAPH. In the early 1990s he worked with Eastman Kodak, Adobe, and Quark to develop one of the first desktop publishing studios. Between 1992 and 2005, Woolford held several research positions in German and Dutch Design and Media programs as he moved between academy and industry. From 2005-2008 he was a lecturer in Digital Arts at Lancaster University. In 2008 he moved to University of Sussex as Sr Lecturer of Media Practice where he teaches digital media, works with local companies to explore innovative applications of their products, and acts as a link between academy and creative/cultural industries.</p>	
<p><b>2. Have you previously participated in public engagement activities? If do please provide a brief description.</b></p> <p>I worked as a researcher and developer on the BBCs "The Net" program and spent 3 years as a technical director working for Channel Four/Film Four. As a practicing media artist, I frequently teach workshops for schools and local communities. I was in charge of public engagement for the Lancaster Institute for the Contemporary Arts and am currently the Enterprise Director for Sussex's school of Media, Film and Music. I work closely with the director of Sussex's new Attenborough Centre for the Creative Arts where we are currently developing the primary public engagement scheme for the entire university.</p>	
<p><b>3. Why is this event of interest to you and what contribution are you hoping to make?</b></p> <p>In my own career, I started as a computer scientist, and moved into developing digital photography systems in partnership with Adobe and Eastman Kodak. I currently teach within an Arts/Humanities program where I have had to write new courses and double up the number of sessions we teach in order to meet the ever-increasing student interest for digital media. For me, digital media is an extension of ICT, so I see an exceptionally vibrant ICT community, but this does not appear to be the general consensus.</p> <p>Through this event, I'd like to address this question of definition within the ICT community and explore whether it is possible to capture people's interest digital and social media, use it to raise the overall ICT profile, and draw people from media into more traditional and established fields of ICT.</p>	

<b>Name:</b> Prof Song Yan	<b>Institution/Organisation:</b> University of Bedfordshire
<b>e-mail:</b> song.yan@beds.ac.uk	
<b>1. Brief summary of your track record (2,000 character limit)</b> I am currently Professor in Computer Science at University of Bedfordshire, and in the same time I am Visiting Professor at MIT/Harvard, supported by the Royal Academy of Engineering and Royal Society. My research interests include algorithms, complexity, cryptography, network security, and secure e-commerce, etc. I have published more than 50 high-quality research papers and 5 well-received research monographs. My most recent advanced research monograph, completed at MIT/Harvard, is as follows: S Y Yan, Primality Testing and Integer Factorization in Public-Key Cryptography, Advances in Information Security, Vol 11, Springer, 2009.	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)</b> <b>No</b>	
<b>3. Why is this event of interest to you and what contribution are you hoping to make? (2,000 character limit)</b> Information and Communication Technology is a very active research area, and it is a good idea to increase its public profile. I think EPSRC-ICT did a very good job in organising this workshop, so that researchers in different areas of information and communication technology can exchange ideas and more importantly do collaborations. I am very interested in attending this workshop. I can bring my rich research experience to the workshop and I am happy to share it with other ICT colleagues. I will also be happy present a talk if needed.	

<b>Name:</b> Jon Oberlander	<b>Institution/Organisation:</b> Informatics/University of Edinburgh
<b>e-mail:</b> J.Oberlander@ed.ac.uk	
<b>1. Brief summary of your track record (2,000 character limit)</b>	
<p>Current Position and Employment History</p> <p>Professor, School of Informatics, University of Edinburgh, since 2005. British Academy Postdoctoral Fellow 1987–1990; SERC Research Associate 1990–1993; EPSRC Advanced Fellow 1993–1998; Lecturer 1998–2000; Reader 2000–2005. 100+ refereed publications.</p> <p>Education : 1987 School of Epistemics, University of Edinburgh. PhD in Cognitive Science. 1983 Pembroke College Cambridge. Foundation Scholarship. BA (Hons) 1st Class in Philosophy.</p> <p>Professor Jon Oberlander is Director of the Scottish Informatics and Computer Science Alliance, a £29M initiative bringing together leading researchers in 10 institutions across Scotland. He is also Director of Inspace, Edinburgh's new 300m2 instrumented living lab and public engagement space, with a special focus on human-robot interaction, and the development of "smart spaces". He works at the intersection of computational linguistics and cognitive science, aiming to develop cognitively- and affectively-motivated computational models of the ways in which differing people produce fluent discourse. A long-standing interest in personalisation technologies applied to museum interpretation has led to recent work on human-robot dialogues. He has extensive experience in designing and supervising empirical studies of human-human and human-computer communication. He was one of the designers of the original ILEX museum guide system, and one of the principal investigators on the EU's M-PIRO, INDIGO and JAST projects.</p> <p>Research Grants: Over the past 14 years, PI/co-PI on 19 UK and European research grants, with a value to the University of £3.5M+. Since 2005, grants: JAST: Joint Action Systems Technology (EU); Indigo: Interaction with Personality and Dialogue Enabled Robots (EU) – value to Edinburgh of £0.6M.</p>	
<b>2. Have you previously participated in public engagement activities? If do please provide a brief description. (2,000 character limit)</b>	
<p><b>I have given public talks as part of the Science Festival, in 2000, 2002, 2009 and 2010. These generated a substantial number of newspaper articles, and broadcast items. I have also written occasional pieces on science for the Sunday Herald, and in the late 1990s, broadcast regularly on BBC Radio Scotland's 'Usual Suspects' programme.</b></p> <p><b>In the last year, I have undertaken public engagement training through the Royal Academy of Engineering DEEPER programme, and currently hold a an RAEng Ingenious public engagement grant (with Sethu Vijayakumar). I also participate in the Beltane Beacon for Public Engagement.</b></p> <p><b>Perhaps most relevantly, I now foster public engagement activities for the School of Informatics (the UK's largest computer science department) through its new Inspace facility, an instrumented interactive space designed to work as a research lab and as a meeting place and exhibition gallery. We operate Inspace as a joint research collaboration with New Media Scotland, an arts organisation specialising in interactive artworks.</b></p> <p><b>Associated with this, since last year, we have operated the Informatics Forum as the venue for the adults talks series within the Edinburgh International Science Festival (the largest science festival in the world). During the 2010 Science Festival, the Forum will also be the venue for 'Huxley's Lab', a site-specific theatre work produced by Grid Iron (one of the UK's leading site specific theatre groups).</b></p>	

**3. Why is this event of interest to you and what contribution are you hoping to make?** (2,000 character limit)

From the above you, it should be obvious that I am very interested in public engagement - although I must admit that I have never succeeded in securing a PPE grant from EPSRC.

At the meeting, I would like to:

- explore why -- in a world transformed and apparently obsessed by google, iphones, satnav and amazon -- anyone might worry that 'ICT has a poor public profile'
- gauge support for a proposal for a national-level computing/AI public engagement activity, which arises from joint discussions with the Royal Society of Edinburgh, involving my colleague Jane Hillston
- represent the interests of a number of other colleagues at the University of Edinburgh, in Informatics and in the social sciences.

