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Editorial: Experts jailed for giving advice. Where now for crisis management?

There is cry around in many areas of government, industry and business that all decision making should be evidence-based. But, of course, that can never always be the case. Sometimes evidence cannot be collected before a decision is needed; sometimes the uncertainties are such that there is no scientific consensus on underlying behaviours: no agreed scientific theories and models. Thus on some occasions we have to manage risks and events without full evidence and with no time or way to seek it. Instead we rely on expert judgements. Crisis management is one such area. The US eastern seaboard states and FEMA had to rely on expert judgement in many ways in preparing and responding to Storm Sandy. Even in smaller events such as road accidents there is a need to rely on expertise. In dispatching fire, police and paramedic teams to a road accident, there is considerable uncertainty, conflicting reports of what is happening, so the dispatcher has to make judgement calls on what teams to send, albeit judgements supported by protocols and guidelines on good practice.

Expertise, therefore, is central to crisis management. So we should all be greatly concerned at the recent sentences handed down on the scientists who offered their best judgements in the case of the L'Aquila Earthquake. If there is a threat of prison if an expert gets a judgement wrong, who will dare to offer their advice and judgement at times that we most need it. The ISCRAM Board has issued a statement on their concern: see page 2.

Turning to other matters and the content of this newsletter. Since the last issue of the ISCRAM Newsletter, two ISCRAM events have been held:

- 1st ISCRAM-ASIA Conference on Information Systems for Crisis Response and Management (Beijing, 17-19 Oct)

- An ISCRAM panel at the IEEE Global Humanitarian Technology Conference. (Seattle, 21-24 Oct)

Reports of these very successful events are on pages 2 and 3, respectively; and there is a report on the ISCRAM Summer School held in August (page 4). We also begin a series of interviews with senior players in the ISCRAM field. In this issue Tina Comes interviews José Gonzalez: see page 5.

The call for papers for ISCRAM2013 is on page 11 or www.iscram2013.org). Get planning! For full papers, the deadline has been extended until **December 1st, 2012**; but there is until January 15th, 2013 to get shorter work-in progress, discussion or practitioner papers prepared.

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ISCRAM Board: Statement on L'Aquila Verdicts

The ISCRAM Board released a statement on October 31st, 2012 in response to the October 22nd, 2012 court verdict in the aftermath of the Earthquake in L'Aquila in which scientists were found guilty of multiple manslaughter.

The ISCRAM Association wishes to express its support to the scientists convicted on October 22nd for manslaughter following the Earthquake in L'Aquila, Italy. In our opinion the verdict cannot be justified, and inappropriately places liability on the scientific community, whose task should be to provide an unbiased and independent basis for decision-making.

The ISCRAM Association's primary mission is to foster a community dedicated to promoting research and development, exchange of knowledge and deployment of information systems for crisis management, including the social, technical and practical aspects of all information and communication systems used or to be used in all phases of management of emergencies, disasters and crises. Therefore ISCRAM is strongly concerned about the impact the verdict could have on the communication of scientific results on crisis management, including risk assessment, risk reduction and mitigation. It is likely that this verdict could prevent scientists and other experts from taking on public advisory roles, whilst their contributions are legitimate and essential as part of managing the risk from natural disasters.

Sentencing scientists for ineffective communication of the risk of extreme events is inappropriate and unjust because the science behind risk assessment is fraught with unavoidable uncertainty. We hereby express our sincere hope that the verdict will be revised for all the reasons mentioned above.

The Board of Directors,
ISCRAM Association

Submission Deadline for ISCRAM2013 extended

The submission deadline for ISCRAM full papers has been extended to December 1st, 2012. The full call for papers is on page 11.

1st ISCRAM-ASIA Conference On Information Systems for Crisis and Management

The first ISCRAM-ASIA 2012 Conference was held in Beijing on October 17-19, 2012, co-hosted by Harbin Engineering University, Tsinghua University and Institute of Disaster Prevention. Following a successful series of five ISCRAM-CHINA conferences held at Harbin Engineering University, this conference was the first regional conference targeting researchers from the wider Asian region. As usual, the conference served as a platform for sharing research and practical experiences among universities, institutions and other organizations in the field.

During the 3 day program, mornings were reserved for keynote speakers from Japan, Europe and the USA. The first keynotes were given by renowned Japanese earthquake researchers, professors Kimiro Meguro and Muneo Hori who provided the latest insights in earthquake prevention and risk reduction. ISCRAM board member Murray Turoff and ISCRAM2014 Program Chair Roxanne Hiltz presented their latest findings on a Delphi emergency threat analysis and social media, respectively, while Lili Yang (co-chair of ISCRAM2013) gave a talk on "the Internet of Things" and the implications for emergency management. Professor Young-Jin Kwon from Korea spoke about fire prevention in large buildings, and consequences for city planning. Last but not least, Eric Rasmussen gave a thought-provoking keynote on International Disaster Response.

During the afternoon, parallel sessions were held with presentations on global major natural disasters, environmental disasters, city security, public security, production safety and other crisis phenomena. Presenters discussed crisis

response and management to deal with theoretical and practical problems of crisis warning, forecasting, supervising, evaluation and decision making.

During the last afternoon, an excursion was organized to the Phoenix Valley Base Training Centre for the Chinese rescue services. At the impressive training site, participants could visit the outdoors training facilities, with collapsed buildings and damaged infrastructures. A fabulous 4D (including moving seats) movie on an earthquake and its consequences provided for a "grand finale" of an excellent conference.

We thank professors Zhang (Tsinghua University), Bo (IDP) and Song Yan (Harbin Engineering University) for their hard work and the excellent organisation of the conference, and are looking forward to the 2013 edition of ISCRAM-ASIA!

Jingui Jiang
Bartel Van de Walle

ISCRAM Partners with IEEE at 2nd Annual Global Humanitarian Technology Conference

ISCRAM hosted a special session at IEEE's 2nd annual Global Humanitarian Technology Conference (GHTC) held in Seattle, Washington USA Oct 22-24. Professor Mark Haselkorn, University of Washington and current ISCRAM Board member, initiated this new partnership with IEEE. Professor Haselkorn saw a "winning combination" in joining IEEE's broad presence and ISCRAM's focus. IEEE is the world's largest technical organization. The GHTC, started by Paul Kostek, was created as a forum for engineers interested in applying technology to develop effective solutions for the challenges

facing the world's underserved. This year's conference had over 250 attendees.

This was only IEEE's second GHTC. In one brief year, GHTC came quite some distance in moving from an engineering onlookers perspective to establishing themselves with greater grounding and contextual approaches to design. The pre-conference tutorials by Nathan Johnson offered an excellent and appropriate ethnographic methodology for businesses in the design of energy systems within a developing context. The energy and telecommunications sessions were also notable, delivering robust and grounded research—with contextually appropriate solutions and hosting researchers working hand in hand with practitioners. Overall, GHTC significantly advanced the quality and level of field level/practitioner perspective.

The ISCRAM panel received high marks from the very active and engaged audience. All of the selected papers for the GHTC ISCRAM session came from ISCRAM members, this year. Each showcased research which is characteristic of ISCRAM's mature understanding of the practitioner's unique environments and needs. Professor Haselkorn observed a shared theme amongst our ISCRAM submissions of achieving efficient and appropriate use of technology in emergencies by understanding and linking the larger cognitive, behavioural, social, political, and organizational systems at play:

Competing constraints: the operational mismatch between business logistics and humanitarian effectiveness. (Robin Mays Robert Racadio Mary Kay Gugerty)

Robin Mays from the University of Washington, presented her team's research on the fundamental mismatches inherent within business logistics systems by looking deeper into the meaning of terms such as effectiveness, sustainability, demand and optimization. This paper challenges academics to contribute to the science of humanitarian logistics by pursuing new designs supporting the goals and constraints driven by humanitarian values vs adapting economic-based logistics systems incompatible for humanitarian effectiveness.

Use of synthetic aperture radar images for crisis response and management. (Gerardo Di Martino Antonio Iodice Daniele Riccio Giuseppe Ruello)

Guiseppe Ruello, from the University of Napoli Federico II, presented on the use of Synthetic Aperture Radar data, useful in many applications related to natural (volcanoes, earthquakes, floods, and so on) and human-driven (oil spills, Earth, air and sea pollution, and so on) disasters for spatial resolution, temporal revisit time and

coverage. The proposed approach is supported by examples that show the potentialities of the use of SAR data for crisis prevention, management and response.

Guiseppe Ruello giving his presentation

Getting user-generated content structured: overcoming information overload in emergency management. (Axel Schulz Jens Ortmann Florian Probst)

Axel Schulz presented his team's solution for filtering and aggregating the overwhelming flood of information by merging user-generated content in disaster management, allowing identifying individual incidents in an incoming stream of incident reports. The solution is implemented as a client server application, with a mobile application for sending incident reports and a client application to process and store incidents.

Future cooperation between IEEE and ISCRAM offers great opportunities both for ISCRAM researchers to expand their network, and the IEEE community to connect with ISCRAM's 10 year base of learning in practitioner perspectives. Find out more about GHTC and IEEE at http://www.ieeeghtc.org/. And get your research ready: 2013's GHTC will be held in San Francisco where ISCRAM hopes to again raise the exposure of our sensational researchers!

Mark Haselkorn
Robin Mays

ISCRAM Summer School 2012

Twenty-four PhD students and practitioners from 11 different countries attended the fifth ISCRAM Summer School at Tilburg University from August 15 to 24 2012, to share their experience, research and insights on the use of social media in crisis management.

The theme of this year's Summer School proved very timely: indeed, the apparent power of social media in recent humanitarian crises to mobilize people and create change has attracted worldwide attention, if not admiration. This phenomenal impact attributed to social media however also increasingly meets criticism: was the role of social media really that critical, and if so, in what specific cases? Were social media really useful to, and used by, those who make humanitarian response decisions - and if so: where?

More than 20 lecturers from all over the world presented their insights on the current status and future of social media. Topics varied from new technologies such as Twitcident, the use of social by emergency responders, the Egyptian revolution, communication with local communities, media monitoring, simulation learning, decision making and scenario planning, and the importance of international collaboration. In addition, a two-day "simulation game" was played at the Belgian Campus Vesta, which provided for an exhausting yet invaluable experience for all participants: see video at: http://www.iscramlive.org/portal/node/2780.

The night-time exercise at Campus Vesta

In addition to thanking the participants and the lecturers for a great time together, I would like to thank a few people who played a key role in making this Summer School probably the best edition ever: the local organizing team consisting of Jan Otten, Aart Beukers and Paul Pattynama; Simon French as "wise academic guide"; Geert Gijs and Dimitri De Fré as most welcoming hosts at the Vesta training facilities in Belgium; Veerle Van der Sluys as inspiring leader of the game development student group and Kenny Meesters as "puppet master" during the game and overall as last resort for numerous small and larger challenges throughout the 10 days.

Finally, it was very rewarding to see that past Summer School students now participated as Lecturers – Willem Muhren, Sophia B. Liu and Jozef Ristvej not only gave engaging talks, but could also provide their personal experiences to the participants, as they grew from PhD students to their current positions as academics

or as practitioners. And exactly that is the very key objective of the Summer School: not only to provide a stimulating environment for PhD students and practitioners to create mutual understanding and support, but in doing so to grow a global network that embraces and strengthens ISCRAM research and field work.

Bartel Van de Walle

By the logic of failure to Eureka moments
Interview: José J Gonzalez

José J Gonzalez is Professor of ICT at the University of Agder in Norway and the director of the newly founded Centre for Integrated Emergency Management (CIEM). He has doctor degrees in natural sciences (mathematical physics) and technology (polymer science) and has published in various areas of natural sciences, technology and social sciences. His current areas of interest are emergencies and critical infrastructure protection.

Here Tina Comes reports on her interview with Jose.

Dear José, I heard that recently you have been awarded a prize for your lifetime achievements?

José (laughing): Well, as you grow older you accumulate papers and get prizes…

The Agder Academy of Science and Letters in Norway awards prizes for research achievements and dissemination. I got the award for my lifetime achievements in research, and it was most important that I have worked in very different areas and fields. I started off as a mathematical physicist working in Munich and Kiel (Germany), and later in Trondheim (Norway). Around 1975 I got interested in the field of polymer chemistry. When the outbreak of the HIV epidemic started in the early 1980s, I developed models and simulations to analyse the spreading of the disease, which is particularly difficult given its long incubation phase. Over the years, I got interested in complex problem solving, organisational aspects and learning. In 1999, I became the first full professor in ICT at my current university, the University of Agder. I started working on information security and critical infrastructures, before getting more interested in crises and emergencies.

Who were, for you, the most inspiring people? Who gave you the most important impulses for your research?

José: When I was young, I had always wanted to become a star physicist changing the world

and winning prizes. When I worked at Heisenberg's Max Planck Institute in Munich, I had to realise, however, that there are some differences between appearance and reality. Over the years I learned that what distinguishes great scientists is that they make great mistakes, mistakes that help them to learn, advance their understanding and create meaning.

For me, one of the most impressive people was Eugene Wigner who won the Nobel Prize for developing a theory that still shapes our understanding of all the newly discovered elementary particles and their relations. We met in Lindau at the annual reunion of Nobel Prize laureates. What struck me most was that he was very kind and modest, interested in other people and what they had to say.

Today, I am more and more convinced that it is not the single lonely geniuses who drive scientific progress. We don't depend so much on individuals; nature provides so many clues that the conclusions are necessary and it is just a matter of time until the underlying principle is revealed. More important than the person is the processes: how does science advance? I have become increasingly interested in philosophy of science and cognition to get a better idea of what scientific progress actually is and how it can be achieved. Beyond the works of Popper, Carnap, Stegmüller, Kuhn, I became, most recently, very interested in Daniel Dennett.

If it is important to make great mistakes, which one was your greatest?

José (hesitates): Good question, not sure if I would like to see this in a newsletter.

I were quite ambitious when I did my diploma thesis at the Max Planck Institute in Munich on Heisenberg's Unified Field Theory. We were several very young scientists who had great aspirations and we were all convinced that we would find the "theory of everything" and make huge progress in very short time. After a while I had to realise, however, that my own contribution might not make such a great difference, and I did not want the hunt for prizes and reputation to dominate my life any more. At that time, I made the decision to live in closer contact with nature, which I still do and enjoy.

You mentioned that science should be understood as a process. What would you recommend as a good way to approach a problem?

José: There are many paths to good science, and I sure don't have the one and only guideline, but I will give you an example. When I worked at the Institute for Theoretical Physics in Trondheim (Norway) with Harald Wergeland, I learned how important it was to create an open atmosphere: we had long unplanned lunch

meetings and talked about ideas in research, science and society. In that setting, science flourished and we learned how much we could benefit from working together.

What will be the most important aspects of that approach to research in future?

José: In today's world, western societies will need to focus on creating know-how. We cannot win price competitions, and innovation and creativity will become ever more important. One way ahead is the combination of natural and social sciences.

In making decisions using ICT systems, for instance, the aspects of ethics, privacy, trust, group behaviour and so on are very important. We need to consider psychological aspects, the way people think. All the biases related to making decisions should become a part of analysis and response. Nevertheless, most software development still focuses mostly on technical aspects and neglects the fact that people think differently from computers.

Do you have a specific example of biases in emergency preparedness in mind?

José: Norway was hit so severely by the bombing and mass shooting in July 2011, because administration and society were utterly unprepared. Although the buildings should have been protected, no controls were installed and the bomb could be placed in the middle of the government buildings. This mistake was made due to the low risk perception in this peaceful country. Terrorist attacks were perceived as something that could only happen elsewhere. Of course, after 09/11, new rules and regulations were introduced. But, as nothing happened for years and years, people relaxed and guards were lowered.

We need mechanisms that integrate this and further biases in emergency planning and management.

The ISCRAM 2013 Conference will focus on "Holistic Crisis Management". What does this mean for you?

José: I am deeply convinced that emergency and crisis management require different areas of knowledge to be brought together; we won't progress a lot until we are able to integrate different disciplines and approaches. Additionally, we need to closely collaborate with practitioners and respond to their needs and requirements.

How can this integration be achieved?

José: I think that we cannot do research exclusively sitting in our offices. We need to open up, to be curious for different people and disciplines, and engage in conversations and informal brainstormings to come up with innovative solutions.

When I worked in the field of complexity theory, I got to know Dietrich Dörner who in "The logic of failure" investigated patterns of thought and reasons for commonly made mistakes in complex problem solving. Basically, when wrestling with a problem, we develop too many ideas. Inspiration – the "Eureka!" experience – comes typically in periods of rest, when irrelevant ideas have faded, while the most prominent ones will stick.

So, we need brainstormings and open discussions, and then, an easy and balanced atmosphere to allow us combining the individual pieces until they fit together.

You are the Director of the Centre of Integrated Emergency Management. What are your aims and ambitions, particularly with respect to "integration"?

José: We would like to create such a place, where people can actually work together in a stimulating environment such that this centre will excel and become one of the most important institutions in the field. We will work out better processes and procedures that enable integration. We share, however, this common vision and have excellent researchers from engineering, natural and social sciences working together.

Looking at the various fields you have covered, it seems that you changed topic every eight years. What are your next plans?

José (pensive): Actually, that's true… I plan, however, to continue working for the Centre for a while. One of the most interesting aspects of emergency management is that it covers so many diverse aspects. The red thread in my career has so far been modelling and simulation, but I would also like to explore further aspects.

In general, my interest in a topic did usually arise due to conversations I had. I got into emergency management after a conversation with Bartel in Hawaii. I presented my work on system dynamics, and he asked me for potential applications in emergency management. I was also invited to the ISCRAM Summer School (although my knowledge in emergencies was not really profound at the time), but I got into it and still think it is a fascinating topic.

Finally, a personal question: you are Spanish, then moved to Germany and for the last 40 years, you have lived in Norway. What do you think is most Spanish, German and Norwegian about you?

José: You ask difficult questions!

I think, I owe my spontaneity and the way I approach people to my Spanish roots. I have a great interest in people and the human side of science. In Germany, I learned to appreciate

culture – great composers such as Brahms, Beethoven and Schubert, the literature – and discipline, of course! In Norway, I think it is mostly the focus on social capital that has become important to me: the trust in each other, the serenity and objectivity in work. Here, matters are not taken very personally, the atmosphere is very relaxed and rather than striving for individual goals, people work for a common vision.

José, thanks a lot for the interview.

Publications and Academic Standards Committee: More ISBNs and Best Paper procedure

In the April 2012 ISCRAM Newsletter (Vol 2 No 1), we listed all the known ISBNs for ISCRAM conference proceedings. An ISBN makes it easier for a librarian to find our proceedings. Moreover, there are universities that will only recognize a conference paper as having scientific status if it is published in proceedings that carry an ISBN. So ISBNs are important to ISCRAM and to her members.

We are delighted to be able to tell you that Maria Alzira Santos, LNEC, has obtained a backdated ISBN for the ISCRAM 2011 (Lisbon) proceedings: 978-972-49-2247-8. We are now trying to obtain a backdated ISBN for the Seattle conference (ISCRAM 2010). If this succeeds, then every ISCRAM conference proceedings from the very first (in 2004 in Brussels) will have an ISBN. Since the April newsletter appeared, the Vancouver conference organizers have obtained the following ISBN for the ISCRAM 2012 proceedings: 978-0-86491-332-6.

We believe that most ISCRAM-China/-Asia conference proceedings also carry ISBNs. Here are the details, including ISBN, for ISCRAM-China 2008:

Proceedings of the 3rd International ISCRAM-CHINA Conference
Eds. Bartel Van de Walle, Yan Song, Siskya Zlatanova and Jonathan Li
ISBN 978-81133-251-3.

For ISCRAM-Asia 2012, held in Beijing from 17 to 19 October 2012, the details are as follows:

ISCRAM-ASIA 2012 Conference on Information Systems for Crisis Response and Management
Editors: Bartel Van de Walle, Jingui Jiang, Hui Zhang, Xin Li and Yong Li
ISBN: 978-1-4673-3066-4. 508 pages.

The complete list of known ISBNs can be found on the ISCRAM website, under the Publications tab (http://www.iscramlive.org/portal/all-proceedings). As we obtain more details, we will update this list.

Over the past few months, the Publications and Academic Standards Committee has been refining the procedure for selecting and announcing the awards for Best Paper and Best Student Paper in the light of our experience at the 2011 and 2012 conferences. The main changes have been (1) to clarify what the conference organizers do and what is done by the Best (Student) Paper committees, and (2) to bring activities forward so as to reduce the workload during the conference itself. The only change visible to most ISCRAM members will be that we have recommended that the ISCRAM President should announce the winners, rather than committee members..

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News

News of Members

It is with great delight and many congratulations that we report that **Song Yan**, who established the ISCRAM China conferences which have evolved into ISCRAM Asia, has been appointed as the new Dean for the School of Management at Harbin Engineering University in China. We wish her every success in her new role.

Our joy at Song Yan's promotion is balanced by sadness, though. **Dean Zhang** of Harbin Engineering University died in September. He was also a great friend to ISCRAM, supporting the ISCRAM China series. The ISCRAM Board sent the following message of condolence.

It is with great sadness that we have learned of the untimely passing of Dean Zhang, Dean of the School of Management at Harbin Engineering University.

The leadership of Professor Zhang was essential to the successful organisation of our ISCRAM-CHINA conferences in Harbin. His support and dedication were felt and deeply appreciated by the global community of researchers in our scientific domain.

Those of us who had the privilege of meeting Dean Zhang in person will remember him as a friend who genuinely cared about us. Dean Zhang did everything he could to make us feel welcome at Harbin Engineering University, in Harbin, in China. His support, his kindness and his friendship will be deeply missed.

Tony Norris is on sabbatical leave from Massey University, New Zealand for two months and working with Professors Ignaceo Aedo and Paloma Diaz and their group at The Department of Informatics, Carlos III University in Madrid. They are looking at the roles of tele- and mobile health in emergency planning.

Mark Roddy will be presenting a paper at a workshop on Ambient Intelligence for Crisis Management run alongside AMI2012 in Pisa, Italy, on 13 Nov (ami4cm.wordpress.com/). His paper is entitled: *An Analysis of the use of Cognitive Surplus In Disaster Relief scenarios*. In this he discusses whether the cognitive surplus of the online community be effectively harnessed to help in the assistance of managing global disasters? Does this community even want to assist with disaster relief? The relief experts on the ground, he argues, are continually being confronted with life and death scenarios, so how can they trust the veracity of any assistance provided by the online community? By providing examples of existing disaster management systems that have successfully leveraged the online community to assist in disaster relief, Mark Roddy's presentation will suggest that online philanthropy exists, albeit that this assistance does need to be manually verified. The presentation uses the results from an online survey to hypothesize a human intelligence model for trusting this assistance. The potential impact of this would be to reduce the burden that the disaster relief teams have to exert in order to verify and validate this assistance.

Successful PhD Defences

Yasir Javed of Massey University, Auckland, New Zealand has been awarded his PhD for a thesis on the *Design and Evaluation of Mass Evacuation Support Systems Using Ontologies for improved Situation Awareness*. His thesis abstract read:

The power of emergency decision support systems is enhanced if they are designed to improve the situation awareness (SA) of individual managers, their shared situation awareness (SSA), and team situation awareness (TSA). The goal is to ensure that team members have a comprehensive understanding of the situation not just for their individual roles but also of the roles of their colleagues. The aim of the thesis is to design a computer-based information system to support SA, SSA, and TSA of emergency managers for effective decision-making and collaborative task performance. The thesis describes elicitation of the information requirements for various emergency management roles during mass evacuation using cognitive task analysis technique. Based on the requirements, it explains the

design and development of computer-based system dubbed Situation Aware Vigilant Emergency Reasoner (SAVER) using ontologies for situation assessment and reasoning.

It is demonstrated that ontologies can be used to classify the SA information since they can model the situations in detail and allows the inference on rules and axioms. Ontology-based reasoning successfully provided the automatic situation assessment according to the SA levels. The thesis also details the evaluation of SAVER by measuring SA, SSA, and TSA of emergency managers using Situation Awareness Global Assessment Technique (SAGAT) in simulated mass evacuation scenarios. The evaluation demonstrated the superior performance of the computer-based system for improving SA, SSA, and TSA of emergency managers. Moreover, the user interfaces of SAVER were also evaluated positive for the human computer interaction (HCI) parameters like usability, ease of use, understandability, learnability, functionality, etc.

Amanda L. Hughes, Sophia B. Liu and Sarah E. Vieweg won ISCRAM's Mike Meleshkin award for the best student paper at ISCRAM2008. So it is with delight that we can report that Amanda and Sarah have just completed their PhDs successfully – Sophia received hers some time back, as we reported in Vol 1 No 2 of the ISCRAM Newsletter.

Amanda Hughes successfully defended her PhD work on August 27, 2012 and will receive her PhD in Computer Science from the University of Colorado Boulder in December of 2012.

In her thesis, Amanda examines how social media and the forms of public participation enabled by social media are changing the role of the emergency public information officer (PIO)—the role within US emergency response organizations that is responsible for communicating official response information to members of the public during an emergency event and ensuring that the information available in the public arena is accurate and complete. Based on this understanding, she explores information communication technologies (ICT) solutions for the PIO through human-centred methods that include the PIO in the design process. Finally, she designs, implements, and evaluates a software application informed by this work that supports the social media needs of PIOs. With the aim of improving emergency response efforts, Amanda demonstrates how empirically-based understandings of emergency management

work can inform technology design, practice, and policy.

Sarah Vieweg's thesis was entitled: *Situational Awareness in Mass Emergency: A Behavioral and Linguistic Analysis of Microblogged Communications*. Her abstract read:

In times of mass emergency, users of Twitter (a popular microblogging service) often communicate information about the event, some of which contributes to situational awareness. Situational awareness refers to a state of understanding the "big picture" in time- and safety-critical situations. The more situational awareness people have, the better equipped they are to make informed decisions. Given that hundreds of millions of Twitter communications (known as "tweets") are sent every day and emergency events regularly occur, automated methods are needed to identify those tweets that contain actionable, tactical information. The purpose of this dissertation is to explore how Twitter is used in mass emergencies, and to inform mechanisms for automatically identifying information that contributes to situational awareness.

This dissertation provides a three-part analysis of Twitter communications from four different mass emergency situations. I first perform discourse analysis on tweet content to uncover and explain the information Twitter users communicate during mass emergencies. This analysis serves as the basis for a qualitative coding scheme of specific information types that lead to situational awareness. Second, using this coding scheme, tweets from each of the four emergency events are coded by multiple annotators and inter-annotator agreement rates are calculated. The results of this process provide an overview of the information Twitter users contribute in these emergency situations. My final analysis identifies linguistic characteristics of those tweets that convey situational awareness information and serves as a foundation for natural language processing classifiers that can be trained to identify such tweets.

In sum, this dissertation contributes (1) an analysis of tweet content that is relevant to situational awareness, (2) an overview of the information Twitter users communicate that contributes to situational awareness, and (3) a computational linguistic resource for the development of natural language processing tools that automatically extract tweets containing information relevant to situational awareness.

Amanda, Sophia and Sarah all studied under Laysia Palen at the University of Colorado, Boulder; as did Kate Starbird, who also successfully completed her PhD recently. Congratulations to all!

Kate Starbird's thesis was entitled: *Crowdwork, Crisis and Convergence: How the Connected Crowd Organizes Information during Mass Disruption Events*. Her abstract read:

Social media have experienced widespread and in some cases nearly global adoption in recent years. Though designed and appropriated for a range of purposes, users are consistently turning to these platforms during times of crisis and mass disruption—a term used here to characterize events, including mass emergencies, natural disasters and political protests, that cause significant disruption to normal routines. Social media are now playing host to new, digital forms of the social convergence behaviour long known to occur in the wake of crisis events. This activity, which includes participation from local citizens, emergency responders, and global onlookers alike, produces huge volumes of data, some with potential value to affected people and responders. It also creates new challenges. Noise, misinformation, lost context and the unstructured nature of social media updates all contribute to an emerging information processing problem, with information seekers forced to "drink from the firehose" to identify the data they need.

Noting the difficulties of completely solving this problem with purely computational solutions, I address the challenge of processing social media updates into usable information from a perspective that positions the participating crowd as an asset in the effort. At the center of this inquiry is the discovery of an emerging role for remote participants during mass disruption events— that of the digital volunteer. This dissertation consists of four separate studies of digital volunteerism and other forms of remote participation, examining several ways members of the remote crowd help to organize information during mass disruption events. Across the different studies, I employ a mixture of methods, including qualitative and quantitative analysis of large volumes of Twitter data, interviews with digital volunteers, and participant observation within a virtual volunteer organization.

Integrating the findings from these separate studies and using a new term, crowdwork, to describe the productive activity of remote participants during mass disruption events, this dissertation works to unpack the "crowdsourcing" by identifying salient features of crowdwork during mass disruption events and mapping these to

other frameworks for characterizing crowd-leveraging systems. Rather than placing the technical platforms that conduct and structure crowdwork at the centre of the analysis, this work assumes two alternative perspectives that lead to novel views of crowdwork. The first focuses on how people organize or are organized to the do the work. Using this approach, I describe crowdwork in this context of mass disruption as a multilevel filtration system, explaining how information is processed through a variety of different activities, at different layers within a complex information space that includes crowdworkers, virtual organizations, and social media sites that host both the information and the information processing. This model identifies several potential "sites" of innovation where computational algorithms could both support and leverage crowdwork. In the second perspective, I examine crowdwork through the movement and transformation of information. Using the theory of distributed cognition in combination with this information-centred approach, this dissertation concludes with a holistic view of crowdwork on social media platforms as collective intelligence manifested within a global cognitive system.

To all of these PhD successes, we offer many congratulations.

Call for items

We want your news and will, within the bounds of relevance to ISCRAM, publish most things here: News of Members, including changes of job/address; New Research Projects; PhD defences; and so on. Please keep items to about 300 words. For successful PhD defences, please include the title, a short abstract (~250 words), the name of the awarding institution and any other details, such as being an Alumnus of an ISCRAM summer school. Please send all items to the Editor (simon.french@warick.ac.uk).

Upcoming Conferences and Seminars, Journal Calls for Special Issues

The 7th Global Security Workshop (WISG2013)

Université de Technologie de Troyes, France
22-23 January 2013.

All information concerning this workshop is available at: www.agence-nationale-recherche.fr/Colloques/WISG2013/en/

Paper submission (see details on the workshop's website) should be sent by email in an attached file to: wisg2013@utt.fr. The final date for submissions is November 30th, 2013. The best contributions will be invited to submit an extended version of the paper to be published in a book that will be edited after the WISG 2013.

New Journal: *Planet@Risk*

e-Journal on Integrative Risk Management

www.planet-risk.org

"Sharing practical know-how for improved risk management"

Call for Papers now open!

Planet@Risk in Brief

The Global Risk Forum (GRF) Davos' new e-journal *Planet@Risk* serves as a means for assessing 'grey literature', scientific reports, case studies, book reviews and working papers. By swiftly collecting and pooling these different types of literature, the documents are easily findable, accessible and citable as part of an interdisciplinary knowledge pool for the risk reduction and disaster management communities.

Planet@Risk contributes to bridging the gaps between science, practice, and different sectors of academia. It fosters a multidisciplinary approach and presents the results of interdisciplinary and transdisciplinary research with a special emphasis on their application to practical problems. Information from data and reports which has been difficult or impossible to access, and whose quality has perhaps been hard to judge, can finally be put to use.

GRF Davos' innovative *e*-journal aims to support the establishment of a worldwide risk community, committed to sharing know-how and expertise by a constant process of dialogue – a crucial but still insufficiently implemented element of a truly integrative approach to risk reduction and disaster management.

As it is an electronic and open access journal, *Planet@Risk* offers quick publication and free accessibility to everyone. Quality control and assessment for publication are guaranteed by a rapid review process and an editorial board composed of international experts.

5th International Disaster and Risk Conference IDRC Davos 2014

http://www.idrc.info/

After the successful IDRC Davos 2012 conference, it has been announced that the 5th IDRC Davos 2014 will take place from 24 to 28 August 2014 in Davos.

The 10th International Conference on Information Systems for Crisis Response Management
(ISCRAM 2013)

Baden-Baden, Germany, 12-15 May 2013

http://www.iscram2013.org/

First Call for Papers

ISCRAM 2013 welcomes practitioners and scientists working in the field of information systems for crisis response and management.

Modern societies are faced with numerous risks. Along with the growing interrelatedness and the dependence on technologies and complex infrastructure systems, the vulnerability of societies, economy and environment increases. Cascading effects and feedback loops that exacerbate the consequences of disasters become more and more important. In these situations, which are characterised by complexity and uncertainty, a holistic approach for crisis response and management is required.

"Holistic crisis management" sounds like a good idea, but what do we really mean by it?

Holistic crisis management aims at the interdisciplinary development and design of information systems that enable better crisis response, planning and preparedness, mitigation and training by following integrated approaches that combine organisational, behavioural, technical, economic and environmental aspects:

- modelling and assessing the consequences of disasters by taking into account the complex interrelations between the victims, actors, organisations and critical infrastructure systems

- enhancing the resilience of societies, organisations and critical infrastructures

- developing early warning systems and facilitating the communication of risk

- designing and developing information systems that facilitate coordination and communication between and within organisations

- designing and developing decision support systems that are tailored to the specific needs and requirements of the end users

Researchers and practitioners are invited to present innovative ideas and application experiences that address the practical and technical challenges in development and implementation of Emergency Management Information Systems (EMIS) in general, and holistic ones in particular.

Among the many topics of interest for crisis management, ISCRAM 2013 focuses inter alia on the modelling and simulation of critical infrastructure disruptions and their consequences for crisis management and recovery. Further key topics that should be addressed from a holistic perspective include the use of information and communication technologies, sensor techniques and sensor data fusion for early warning, crowdsourcing and crowd tasking, social media, healthcare, humanitarian challenges, intelligent systems and many more important issues that will be announced in the first call for papers.

More concretely, the following areas will be covered:

- Command and Control studies
- Community Engagement in Crisis Management
- Consequence Modelling and Decision Support
- Crowdsourcing and Crowdtasking
- Decision Support Methods and Tools
- Early Warning and Expert Systems for Disaster Management
- Education and Training
- Event-Driven Techniques and Methods for Crisis Management
- Geographic Information Science and Technology (GIS&T) for Crisis Response and Management
- Human Experiences in the Design of Crisis Response and Management Services and Systems
- Human-computer Interaction and Visual Analytics

- Humanitarian Healthcare
- Intelligent Systems
- Inter-Organizational Exercises and Operations
- Modelling and Simulation
- Planning, Preparedness and Foresight
- Research Methods
- Resilience and Vulnerability of Critical Infrastructures (CI)
- Sensor Techniques and Sensor Data Fusion for Early Warning
- Serious Games for Crisis Management
- Social Media and Collaborative Systems
- Social, Legal and Ethical Aspects of Emergency Management Information Systems
- Use of Information and Communication Technologies Including Wireless Connectivity Management and Sensor Networks for Emergency Response

The papers will be clustered into tracks. A limited number of papers will be considered for an open track.

Key Dates:

Deadline for track & session proposals
– September 1st, 2012

Deadline for full paper submissions
– December 1st, 2012

Deadline for work-in-progress papers,
practitioner papers, posters
– January 15th, 2013

Deadline for doctoral student colloquium papers
– February 15th, 20

Diary of Upcoming Events and Calls

When	Event/Call	Contact
1 Nov 2012	International Journal of E-Politics (IJEP) Special Issue on Information Technology and Homeland Security	http://www.igi-global.com/calls-for-papers-special/international-journal-politics-ijep/1147
22-23 Jan 2013	The 7th Global Security Workshop (WISG2013)	www.agence-nationale-recherche.fr/Colloques/WISG2013/en/
21-23 Apr 2013	Joint Urban Remote Sensing Event (JURSE 2013)	http://www.inpe.br/jurse2013/
12-15 May 2013	The 10th International Conference on Information Systems for Crisis Response Management (ISCRAM 2013)	http://www.iscram2013.org/
24-28 Aug 2014	5th International Disaster and Risk Conference IDRC Davos 2014	http://www.idrc.info/