

8:45-9:00

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/KnfQAE

Sci-Art SPECTRUM exhibition summary and awards

#W1

Auditorium

The visual fast forward sessions are designed to give you a snapshot of works in the SPECTRUM Science-Art Exhibition. Selected entrants will be given the stage and the audience for one minute with only one slide to creatively share their work and to entice the audience to visit them at their exhibit to learn more. The winner will be announced in this session!

PRODUCERS AND SPEAKERS:

Kate Patterson



Signe Cane



9:00-9:30

SESSION DETAILS

bit.ly/1dBjmCR

Plenary

#W2

Auditorium

Tik and Bubbles: The evolution of an underwater superhero

Can a real-life underwater superhero make science, technology and innovation more accessible to the public? Lloyd Godson takes us through his journey from BioSUB Man to Tik and Bubbles. In his latest crowd-funded adventure, Lloyd and his team of young Australian innovators are creating the ultimate underwater superhero headquarters. Blending exploration and art, Lloyd will put their science to the test by living in the crazy creation when it's finished. This superhero might not be able to fly but he pushes the limits of science, technology and human endurance to inspire young people to pursue STEM studies and careers.

PRODUCER:

Claire Harris



SPEAKER:

Lloyd Godson



WEDNESDAY

Use the bitly links to go direct to the online information for each session

Theme

- Is Insight
- Im Impact
- In Innovation
- Vi Visualisation
- An Anniversary
- Re Research

Career audience

- B Beginner
- I Intermediate
- A Advanced

Type

- Pr Produced session
- St Series of talks
- Pd Professional development

9:30-10:15

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1dXkZHG

Making science accessible: Learning science outside of school

#W3

Auditorium

Is We know that students spent more time outside of school than inside of it, and that most people have left school behind them. Where, outside of school, can people learn about science?

Pr One source is science outreach; the science opportunities and activities that institutions or other groups interested in communicating science offer to the public, including families and their school-aged children. Outreach involves many things: travelling exhibits, with or without explainers, science theatre, science festivals, events related to science week, and so on. In this presentation, some outreach activities are described together with the kinds of evaluation activities that have endeavoured to determine what, if anything, participants have learned about science, and if not, what, if anything, we can do about it!

PRODUCER:
Nancy Longnecker



SPEAKER:
Léonie Rennie



The Idiot, the Disengaged, The Counterpublic: Rethinking Audiences for Science Communication

#W4

Room B1

Re Despite the move to 'third wave' science communication focusing on engagement, there is still substantial anxiety in policy discourses guiding funding for science communication and among science communication practitioners. This anxiety centres around those who are seen to be 'opting out' of science communication or engagement activities. This panel is a focused collection of some of the latest theory and research across disciplines (sociology, media and cultural studies, economics, social studies of science) that addresses this anxiety and offers new ways of thinking about audiences for science communication.

PRODUCER:
Joan Leach



SPEAKER:
Gay Hawkins



Fabien Medvecky



Maureen Burns



WEDNESDAY

Use the bitly links to go direct to the online information for each session

Theme

Is Insight **Im** Impact **In** Innovation **Vi** Visualisation **An** Anniversary **Re** Research

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B Beginner **I** Intermediate **A** Advanced

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Pr Produced session **St** Series of talks **Pd** Professional development

9:30-10:15

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1dXkZHG

How we can learn from the science-based public debates of the past (and present) and use that knowledge to shape those of the future?

#W5

Room B2

Is Have you ever wondered how past science debates might have played out 'if only...' the right messages had hit home, the right people were engaged, and the right responses had been given at the right time? What could have been achieved if the first GM crops had consumer benefit, people knew what 'nanotechnology' meant, that report hadn't been leaked, or people other than activists had been engaged?

Pr Join our panelists – futurist Kristin Alford, communicator Craig Cormick, and researcher Will Grant – as they try to design the scientific debates of the future, using insight from the past and present. Help our 'judges' (TBC: it could be you!) to push the panellists' scenarios to the limit. Make your vote count for the Science Policy with the ASC2014 'X-factor'.

PRODUCER:
Bronwyn Terrill



SPEAKER:
Craig Cormick



Will Grant



Do You Speak Commerce?

#W6

Room B3

Is After years of focus on your technical disciplines, however, the commercial world can seem like another planet – remote, avoidable and best left to others who are interested in dealing with it.
Pd But, like any foreign country, the commercial world has much to offer a traveller, whether you and your internal stakeholders are looking to run their own company, their own laboratory or their own research agenda.

Your Commercial Foundations provides innovators with an immersion course in the language and culture of the commercial world. YCF take a new approach to uptake skills that isn't solely driven by sales, but encompasses the broader outcomes of industry productivity and public good. Moreover, we've founded our modules on the unique and particular needs of our specialty audience – innovators and creators – in contrast to existing programs whose starting point is the content they can provide.

This workshop will provide attendees with an introduction to the basic concepts of Conversational Commerce - the language school equivalent to being able to find the right train station to the airport, with a cup of decent coffee to savour on the way. At its end, you'll have a new way of looking at your audiences, their motivations and your mutual interests - a new appreciation for what you do and how you do it.

You don't need to emigrate to get the benefits of a new horizon. Take the first step from tourist to traveller – dip your toes into Conversational Commerce.

PRODUCER AND SPEAKER:
Fiona McNee



WEDNESDAY

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10:45-11:45

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1i5sjYH

Hot air or hot action: How communication is part of responding to controversial debates such as climate change

#W7

Auditorium

In

Pr

The challenges of communicating climate change have been talked about for years, including at past ASC national conferences. For the last decade at least, sectors of the economy have been getting on and responding to climate change, energy demands, a carbon price and wider economic changes. How have organisations and individuals tracked the scientific and societal developments to implement climate mitigation and adaptation policy and practices?

This session will draw on perspectives from a diverse group of speakers with expertise ranging from psychology to media to government policy. This session will provide attendees with upbeat views of how to move forward with communicating in controversial arenas, using climate action as the catalyst for discussion. Participants will hear examples of moving from climate science to action, moving from traditional media to social and digital media, and moving from the deficit model of communication and conduit metaphor to more interactive dialogue. With this dynamic panel and in the lead up to the release of the IPCC's Working Group 2 (Impacts and Adaptation) report at the end of March 2014, we are expecting plenty of audience discussion.

PRODUCERS:
Claire Harris



Simon Torok



SPEAKERS:
Jaelle Bajada



Alvin Stone



Lyndal Byford



Corey Watts



John Gardner



Delivering integrated reports from interdisciplinary projects

#W8

Room B1

In

B

I

Pr

How can over 100 authors produce a suite of integrated and consistent interdisciplinary reports that clearly communicate the outcomes of scientific research, adequately visualise these outcomes and address stakeholder needs? CSIRO has been delivering reports in such environments for years and has developed innovative and adaptive workflows to achieve this end. These workflows involve the skills of editors, mapmakers and data visualisation experts.

These reporting experts need to work together to ensure the consistency and quality of the final product and do so using tools (such as reporting standards), collaborative software (such as Microsoft SharePoint) and diligent file versioning protocols.

The team will present a panel discussion, including a role-playing session and an open question and answer session. The role playing session will illustrate how a common reporting issue is raised and resolved including the flow-on implications that it has on every aspect of reporting. The panel will also cover issues regarding the needs of the report's authors, reviewers and audience and how they shape each specific report to ensure maximum clarity of communication.

PRODUCER:
Maryam Ahmad



SPEAKERS:
Becky Schmidt



Heinz Buettikofer



WEDNESDAY

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WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1i5sjYH

St Case studies and papers: Citizen Science

#W9

Room B2

In Developing principles for Citizen Science

One of the outcomes of the Big Science Communication Summit held in early 2013 was to develop a draft guide for citizen science. Towards this the CSIRO has undertaken a stock-take of its citizen science projects and developed a set of principles to guide citizen science and to feed into a guide for citizen science.

The purpose of this session will be to share CSIRO's citizen science principles with a wider audience, through a structured conversation, seeking both input to the principles, and discussing how other people or organisations might use or adapt them.

SPEAKER:

Craig Cormick



Not just a load of rubbish: Young peoples' participation in marine debris citizen science program

Aims of a marine debris citizen science program were to inspire students with participatory fieldwork, increase understanding of the scientific process and increase awareness and knowledge of the impacts of marine debris. The program meets relevant key learning areas of the Australian Curriculum.

Schools participating in this citizen science program had two options: 1) a talk with scientists visiting the classroom or 2) the talk plus a beach excursion in which students do a beach walk to collect and classify debris and provide data to an online database.

The talk and beach walk was more effective than the talk alone in increasing students' knowledge and increasing their practice of pro-environmental behaviours. One favourite aspect of the program was participating in an authentic science experience.

My favourite part of the ... day was that I felt like a real scientist and that it felt like I participated in a global problem.

Student comments demonstrated that doing something positive doesn't have to be sexy to appeal. One favourite aspect of participation was collecting and sorting rubbish.

I liked doing the beach survey because it was making the environment healthy and I found it amazing seeing how much rubbish was in 50m only!

SPEAKER:

Jean Fletcher



AUTHORS AND CONTRIBUTORS:

Jean Fletcher
Zarin Salter
Nancy Longnecker

Re Why do citizens donate to citizen science projects? Motivations of the SkyNet volunteers

We investigated the motivations of volunteer citizen scientists from the astronomy based distributed computing project 'theSkyNet.'

Since its launch in 2011, theSkyNet has grown to approximately 19,000 members, who together donate between 20 and 35 TFlops of computing power to astronomy research (equivalent to a mid level supercomputer dedicated to astronomy data processing).

Understanding the motivations of citizen scientists can inform future projects and help recruit further volunteers, as well as retaining current donors. In this presentation we'll discuss the results of a survey conducted on theSkyNet's volunteers, asking why they joined theSkyNet and questions about their frequency and method of donation, as well as providing a brief history of theSkyNet.

SPEAKER:

Kirsten
Gottschalk



AUTHORS AND CONTRIBUTORS:

Kirsten Gottschalk
Will Grant
Kevin Vinsen
Alex Beckley

WEDNESDAY

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WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1i5sjYH

St Case studies and papers: Citizen Science

#W9

Room B2

The impacts of an ecological citizen science program on volunteer participants

Summary: Citizen science, a burgeoning field of research, involves the participation of the public in scientific projects. These projects require a bilateral exchange of information between scientists and the wider community. Scientists commence the exchange by providing educational information about the project and the taxa or phenomenon of interest. Data are then collected or analysed by the community and submitted to scientists. Once these data have been analysed or compiled by scientists, the results must be presented back to the community. Globally, there are hundreds of thousands of volunteer participants involved in citizen science projects. We describe the impacts on participants of an ecological citizen science program operating over six years in South Australia. Individual projects were focussed on local wildlife taxa, including bluetongue lizards, possums, Australian magpies, spiders and koalas. We have found that many participants have learnt about these species, including how to identify them. Many participants have also developed an increased interest in these wildlife and some have changed their behaviour as a result of being involved in our program. We discuss the importance of the bilateral exchange of information in generating the impact on participants. We also propose ways to increase the impact of projects, with a focus on innovative styles of data collection and methods of presenting results back to the community.

SPEAKER:
Philip Roetman



Community Storytelling Series 2 (part 1): Art and practice of story capturing

#W10

Room B3

Pd Sharing stories is possibly one of the most important ways we have of communicating with each other. It is how we share our hopes and fears, dreams, and passions and what we believe and value as well as what we do not. We discover and make sense of our lives by telling the stories we live and we find out about other lives by listening to the stories they tell.

This workshop will cover all the essential elements to capturing a great story as well as a practical section to help you put storytelling into practice for your not-for-profit.

Join this workshop to discover:

Finding the story

- What makes a good story and why
- The most important thing of all when catching stories

Bringing the story out

- Interviewing technique
- The 6 steps to an awesome interview
- The best questions

Storyboard creation

- What is a storyboard
- How to make a storyboard

Video interviewing

- The 4 elements to a great video interview

Story capturing put into practice

- Practical section
- Practice makes perfect

PRODUCER:
Kali Madden



SPEAKER:
Susan
Rooney-
Harding



WEDNESDAY

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12:00-12:45

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/LpjjiB

St Case studies and papers: Evaluation, research, narrative, children's education #W11 Auditorium

Re You say 'evaluation', I say 'research': Lessons from interviews with evaluation experts

Efforts aimed at determining "what activities work when" in science communication typically focus on evidence that is provided in evaluation reports to funders. However, this evidence is heavily influenced by the contexts in which these reports are written.

To examine these contexts, I conducted a series of interviews with science communication "evaluation experts" from Australia and the UK. These interviews represent a range of perspectives in science communication evaluation including policymakers, academics, consultants and funders (including government). Based on these interviews, I will discuss several assumptions about evaluation that influence how science communication evaluation is performed and interpreted. In particular, disagreement about what it means to "evaluate" and how or whether "evaluation" is different from "research", may have important implications for establishing an evidence base for science communication.

I will also introduce some of the differing perspectives offered in my interviews, and discuss some possible ways of overcoming these differences. These possible solutions centre around clarification and acknowledgment of multiple and potentially conflicting evaluative perspectives, improvement of evaluation through research on (as opposed to practice in) evaluation, and a change in evaluation models for science communication.

Communicating science through narrative

Narrative is not widely used in formal science education. This may be because narrative communication is considered to lack objectivity due to use of elements such as character and storyline. Nevertheless, study of advantages of narrative in communicating scientific information is important and a theoretical background is being established.

We report quantitative measures of effectiveness of narrative by comparing student recall of scientific information delivered via a narrative or a list of facts. Students in a large first year university class (n=443) were provided the same information as either a story or as a list of facts. They answered an online quiz three times to test their recall of information over the short term (immediately and one week later) and medium term (after eight weeks).

Short term, students who received the information via the story had similar quiz scores to those who received the facts via the more traditional, didactic list. This indicates that reading the story did not 'distract' from the purpose of learning. After eight weeks, students who received information via the story had better quiz scores, supporting the claim that narrative can be a valid manner of communicating scientific information, even in a formal education setting.

Is Lying to children: Defining the limits of science and education

Popular science writers Ian Cohen and Jack Stewart wrote, "A lie-to-children is a statement that is false, but which nevertheless leads the child's mind towards a more accurate explanation, one that the child will only be able to appreciate if it has been primed with the lie." Science education is full of examples of such 'lies-to-children', from Bohr's model of the atom to how genes lead to phenotypes.

By better understanding the history and philosophy of science, science educators can discuss their views on how to contribute to the community's efforts to educate people in science. This talk will present the changing focus between CSIRO Publishing's print magazines – Scientriffic (for children) and The Helix (for teens) – as a case study in how a philosophical structure informs decisions in how to communicate complex topics to a scientifically naive audience

SPEAKER:
Melanie
McKenzie



SPEAKER:
Kohei Ishigami



AUTHORS AND CONTRIBUTORS:
Kohei Ishigami
Nancy Longnecker
Mzamose Gondwe
Tess Williams

SPEAKER:
Jasmine
Leong



WEDNESDAY

Use the bitly links to go direct to the online information for each session

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Career audience

B Beginner **I** Intermediate **A** Advanced

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Pr Produced session **St** Series of talks **Pd** Professional development

12:00-12:45

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/LpjjiB

St Case studies and papers: Agricultural audiences, apps, messaging and visualisation

#W12

Room B1

Im Appy days: A case study of SoilMapp

There are now 40 billions 'apps' downloaded to portable devices worldwide. Almost half (8.7 million) of adult Australians own a smart device, such as a tablet or mobile phone and during June 2012, 4.45 million adult smartphone users downloaded a mobile app.

The opportunities apps provide for greater, easier access and interaction with information and other people is undeniable. Many research and government agencies realise this and are supporting the development of apps for internal and external audiences. There are many factors that government agencies, like CSIRO, need to explore to develop and distribute apps.

This case study outlines the experience of the CSIRO team involved in the final development, release and promotion of SoilMapp, CSIRO's first official app. SoilMapp for iPad provides access to the best nationally consistent soil databases available in Australia.

This paper will provide an overview of: 1) the processes and inputs required for releasing SoilMapp (including from information technology, legal, business development and communication specialists), 2) the communication objectives, activities, and resources required, 3) challenges and learnings and what could or should have been done differently, 4) the impacts – both expected and unexpected – from the app, including for communication, research and project collaboration.

SPEAKER:
Claire Harris



AUTHORS AND CONTRIBUTORS:
Claire Harris
Peter Wilson

In Smarten down the message

If you ever find yourself in the situation where you are catering for a group, and you are wondering how much food to prepare, the best thing to do is to prepare a little extra, just in case. The last thing you want to do is run out. Believe it or not, you've just read two sentences that describe exactly how some herbicide resistant crop weeds counterattack the commonly used herbicide, glyphosate. The focus of the Australian Herbicide Resistance Initiative (AHRI) is profitable farming, and to help growers achieve this we convert the high level science our researchers perform into simple, easy to understand messages. As we will demonstrate, we layer levels of information and "smarten down the message" using the SUCCESS principle (Simple Unexpected Concrete Credentialed Emotional Story). Layer one appeals to growers by fitting science into their world. Layer two adds more detail to the story, appealing to agronomists. The third layer targets the scientific community, or those who are after the full scientific detail in the form of a paper. In workshops and media, we follow the principle of growers talking to growers through our "key influencer" farmers. Essentially, we provide the story, not just the science.

SPEAKER:
Brogran Micallef



AUTHORS AND CONTRIBUTORS:
Brogran Micallef
Peter Newman
Lisa May

Vi Visualising insects: An exploration through science and art

Visualising the world of insects is at its most exciting and innovative stage of science exploration with resources and technology to envisage intricate and complex detail, explicitly from the miniscule extremes of internal and external microscopic examination. Over the last twelve months, a unique collaboration has occurred between CSIRO Scientist, and artist, in unifying their scientific and creative research interests of visualising insects from the Australian National Insect Collection. This intersection of science and art, within the fields of computational Informatics, material science and entomology is truly a creative catalyst for imagination, ideas and innovation, particularly through the technical and aesthetic processes in which scientist and artist collaborate. We discuss the results of this Science and Art partnership, including the challenges and benefits we have experienced both for a large interdisciplinary research organisation, (The Commonwealth Scientific and Industrial Research Organisation – CSIRO) and for National exhibited artworks.

SPEAKER:
Eleanor Gates-Stuart



AUTHORS AND CONTRIBUTORS:
Eleanor Gates-Stuart, Chuong Nguyen

WEDNESDAY

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WEDNESDAY 5th february

SESSION DETAILS

bit.ly/LpjjiB

St Case studies and papers: Climate change, adaptation and trust

#W13

Room B2

Is Climate change 'experts' on the internet soapbox: Democratising science and the media through blogs

SPEAKER:

Jenni Metcalfe



The rise of the blogosphere in the last decade has led to a proliferation of digital voices on politicised scientific issues such as climate change. However, this does not mean that the 'ordinary' person, as compared to mainstream media representatives or scientific experts, has more engagement or influence in such issues than before the emergence of Web 2.0 technologies. The followers of issues-based and increasingly politicised blogs have tended to follow the elites – educated, mostly male bloggers with a background in journalism or writing. My research is finding that the dominant voices in the blogosphere conversations appear to be deniers of anthropogenic climate change with strong links to vested media and commercial interests. These links to vested interests make it harder for ordinary people to participate with expert scientists in the digital debate about climate change science. Despite this, there are opportunities for climate scientists to participate more actively in the blogosphere by being prepared to provide quick clear information about the latest climate science. Ordinary people can also participate more effectively in the blogosphere to increase their impact and voice by developing interest groups of concern and by networking and linking with influential groups, including mainstream media.

Is Research communication for immediate impact: Climate adaptation in Australia

SPEAKER:

Liese Coulter



More than 140 research final reports were published by the National Climate Change Adaptation Research Facility (NCCARF) in 2012-2013 across 9 thematic areas. With this federally funded research investment to support decision making in government, business and the community, a high value is placed on the amount and quality of stakeholder involvement in the research and how quickly findings are referenced in sector-specific communication and policy. To explicitly address research communication and application in the Adaptation Research Grants Program (ARGP), NCCARF required primary investigators to prepare an End-user Engagement and Communication Plan for each project. The authors use three ARGP research final reports to demonstrate stakeholder-specific patterns of access in different sectors, based primarily on analytics from a purpose-designed, freely-accessed web site and public media attention and reporting. Stakeholder involvement is traced through: the original engagement and communication plans; researcher and stakeholder activities to promote the research in business, government and the community, and feedback on early consideration of the research by decision makers. The cases demonstrate the divergent nature of use and access to research information to support climate adaptation in human health, emergency management and settlements and infrastructure.

AUTHORS AND CONTRIBUTORS:

Liese Coulter
David Rissik
John Zhong

WEDNESDAY

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WEDNESDAY 5th february

SESSION DETAILS

bit.ly/LpjjiB

St Case studies and papers: Climate change, adaptation and trust

#W13

Room B2

Is Using trust during peer to peer communication about a contentious issue: Climate change and farmers

SPEAKER:
Sarah Cole



The issue of climate change can be contentious for Australian farmers. Adapting will likely require incremental and transformative change using knowledge from new research or innovative practices. Diffusing innovations, Rogers asserts (2003), is a complex communication process. Trusted face-to-face information sources who share similar attitudes and values can be a critical and accelerating factor when people are learning about something new. A strong body of evidence regarding technology transfer in forestry workers also supports this concept. An example of a program that relies on strong peer-to-peer learning is the Climate Champion program. The program aims to help farmers manage increasing climate risk in Australia through better on-farm decisions, and the 37 participants demonstrate real-life examples of these strategies. Chosen (in part) as good communicators in their regions and industries, they particularly communicate with other producers about these issues. This Masters research case study explores how trust in Climate Champion participants' communication contributes to the program's objectives, how Climate Champion participants create trust, and how trust can contribute to learning in those farmer networks. With added insights into how people convey climate risk knowledge, we may be able to identify people who will likely be trusted communicators in their networks.

Community Storytelling Series 2 (part 2): Are and practice of story capturing

#W10

Room B3

Pd Sharing stories is possibly one of the most important ways we have of communicating with each other. It is how we share our hopes and fears, dreams, and passions and what we believe and value as well as what we do not. We discover and make sense of our lives by telling the stories we live and we find out about other lives by listening to the stories they tell.

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- Practice makes perfect

PRODUCER:
Kali Madden



SPEAKER:
Susan
Rooney-
Harding



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WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1cAOfEK

St Case studies and papers: Engaging different audiences: Maths communication, events and entertainment #W14 Auditorium

Is Maths and science: the original frenemies

The Inspiring Australia strategy includes mathematics in its definition of science as 'a field of study in its own right, as well as an essential tool of the sciences'. However, science and mathematics are still often referred to as two distinct fields, such as in the Australian Curriculum.

CSIRO Publishing produces Science by Email and Maths and Stats by Email, which have similar target audiences: children aged 9 to 13, and their teachers, parents and the general public. Through these publications, CSIRO Publishing is in a unique position to investigate the public's perception of mathematics, science, and the relationship between the two.

Surveys of both newsletter audiences allow analysis of the differences between these science and mathematics groups, comparing how readers engage with the newsletters and the impact the newsletters have on them. Data from the mailing list software includes open rates and click rates as measures of reader engagement. The combined data gives insight into how these audiences overlap, and shows any key differences in how the readers interact with the newsletters. This helps us better understand the intersection of science and maths communication, and how to deliver greater impact for our publications.

SPEAKER:

David Shaw



AUTHORS AND CONTRIBUTORS:

David Shaw
Patrick Mahony

Is Building the 'Y' of science communication: insights into a collaborative strategic narrative

Building a future we all want to live in is a key challenge for humanity and is framed by the constraints of sustainability. One of the enablers of sustainable societies is that they have adaptive capacity – the ability to identify challenges, consequences and opportunities, and be able to respond positively with an appetite for innovation and new ways of being.

The Hunter Valley Electric Vehicle Festival is a collaborative community engagement platform contributing to a strategic narrative of building dynamic and innovative sustainable societies. The Festival has a series of three events – the EV Policy Workshop, the EV Prize race day and the community EV Show, that target specific audiences around the narrative of sustainable transport and cleantech industry development in a resource intensive region. The targeted audiences are industry and government policy makers, current and future innovators as well as the broader community.

The approach of the Festival has been to immerse the target audiences in the challenges and co-creation of solutions. The success of the program has been as an interactive demonstrator for the 'process' of science where creativity and the development of new possibilities meets the reality of performance in the real world.

SPEAKERS:

Gary Ellem



Danielle Lloyd-Prichard



Is On the plus side: What people love hearing about maths

Dine with us on a light but informative smorgasbord of recent successes in communicating maths and what we as science communicators can learn from them. Take-aways encouraged!

This presentation offers an entertaining romp through maths communication, education and social media. Using 'how to count fish' (or 'fishery stock estimation') as a case study, we'll explore engaging ways to communicate mathematical concepts to a range of audiences.

We'll look at maths communication from the educational to the entertaining in a range of media including video, online newsletters, blogs, performance. We'll discuss why maths is important, why mathematicians do maths in the first place, why we think everyone should know a bit more about maths and what it does.

As we move around the buffet table, we'll touch on maths and The Simpsons, and explore why people go crazy on social media about dates like 5/8/13, 31/8/13 and 5/12/13. That just about sums it up really.

SPEAKERS:

Carrie Bengston



David Shaw



WEDNESDAY

Use the bitly links to go direct to the online information for each session

Theme

Is Insight **Im** Impact **In** Innovation **Vi** Visualisation **An** Anniversary **Re** Research

Career audience

B Beginner **I** Intermediate **A** Advanced

Type

Pr Produced session **St** Series of talks **Pd** Professional development

13:45-14:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1cA0fEK

Evaluation workshop: Collecting evidence to determine if you have had an impact #W15 Room B1

Im In this workshop, you will consider evaluation tools developed by the presenters in a project supported by Inspiring Australia. This work contributes to the IA objective of developing the evidence base for science engagement.

Pd

The presenters will provide examples of different evaluation tools, show illustrations of results from their use and lead a discussion about choosing evaluation tools. Attendees will consider evaluation for the sometimes competing requirements of reporting and learning what is needed to improve activities as well as compatibility of different tools with available resources and audience constraints.

Opportunities will be explored to establish or build on collaborations that facilitate evaluation of different programs.

PRODUCERS AND PRESENTERS:

Jo Elliott



Nancy Longnecker



Mzamose Gondwe



Case studies and papers: Communicating risk and tackling misinformation #W16 Room B2

Im **Combating a two decade misinformation against the scientific consensus on climate change**

The Skeptical Science website refutes climate misinformation with peer-reviewed science. We achieve this by embracing a diversity of message formats, delivered through social media and smartphone apps, delivered to hundreds of thousands of people each month. To cater to a diverse audience, myth rebuttals are available at advanced, intermediate and beginner levels, from detailed, technical treatments to tweetable one-liners. While social media has been an effective medium, we experimented with an alternative model in 2013, employing the strategic combination of open-access peer-review, mainstream media outreach and social media marketing. This strategy was adopted with the release of a paper quantifying the level of agreement on human-caused global warming in published climate papers, designed to reduce the influence of a two decade misinformation campaign manufacturing doubt about the scientific consensus. The campaign resulted in global mainstream media attention as well as acknowledgement from key public figures such as President Obama, Al Gore and the UK Minister for Energy Edward Davey. Another measure of impact was a strong backlash from opponents of climate action, with over 150 online articles attacking our research in the 100 days since publication. Our approach was informed by psychological research into both the importance of scientific consensus and how to reduce the influence of misconceptions. While multiple methods of delivery are important, equally important is the construction of the messages themselves. I will examine the science of crafting compelling messages and how combination with diverse message delivery can lead to impactful communication outcomes.

SPEAKER:
John Cook



WEDNESDAY

Use the bitly links to go direct to the online information for each session

Theme

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Pr Produced session **St** Series of talks **Pd** Professional development

13:45-14:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1cA0fEK

St Case studies and papers: Communicating risk and tackling misinformation

#W16

Room B2

Im Immunisation: Informing the nation

In 2011 the number of 'conscientious objectors' to immunisation was on the rise. The Australian Academy of Science identified a need for unbiased, easily understood and scientifically sound information on immunisation. Over 12 months a working group of the nation's top experts in the field put together the Science of Immunisation: Questions and Answers booklet, designed to assist Australian people to make an informed decision about immunisation. A carefully designed and executed launch and communication strategy yielded excellent results: widespread coverage across news, entertainment, features, and social media; endorsement and uptake by key leadership groups; booklet readership in the millions; consumer-driven immunisation information initiatives; and a national conversation which has led to legislative change.

In this presenting this science communication success story, I'll outline the communication strategy, implementation and results, including the longer-term impact on both quantity and quality of media coverage of the issue, and promising signs of behavioural change in Australian society.

SPEAKER:
Kylie Walker



Community Storytelling Series 2 (part 3): Art and practice of story capturing

#W10

Room B3

Pd Sharing stories is possibly one of the most important ways we have of communicating with each other. It is how we share our hopes and fears, dreams, and passions and what we believe and value as well as what we do not. We discover and make sense of our lives by telling the stories we live and we find out about other lives by listening to the stories they tell.

This workshop will cover all the essential elements to capturing a great story as well as a practical section to help you put storytelling into practice for your not-for-profit.

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- The most important thing of all when catching stories

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- What is a storyboard
- How to make a storyboard

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- The 4 elements to a great video interview

Story capturing put into practice

- Practical section
- Practice makes perfect

PRODUCER:
Kali Madden



SPEAKER:
Susan
Rooney-
Harding



WEDNESDAY

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14:45-15:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/Lf8VKD

St Case studies and papers: Influencing enrolments and career choices, young people and students in high school and university #W17 Auditorium

Im **STEM Futures: An innovative approach to guiding career choices for high school students**

The recent position paper from the Office of the Chief Scientist has called for a strategic approach to science, technology, engineering and mathematics (STEM) in the national interest (Office of the Chief Scientist, 2013). To reverse the declining trends in STEM participation at all levels of education, the paper recommends students be guided in their study decisions by highlighting the need for an increasingly diverse and well qualified STEM workforce. Much has been written about the importance of using STEM professionals as role models to steer school students towards STEM careers (e.g. NFER 2013, Ware & Stein 2013). There is also a focus on presenting career options to senior secondary school students to guide their tertiary study choices. However, the declining numbers of students studying sciences and mathematics as senior subjects means that there is already a lower pool of students to make the progression to tertiary studies in STEM areas. The STEM Futures model has been developed by the Science and Engineering Faculty as part of the QUT Widening Participation program to build aspirations for tertiary STEM studies for students from disadvantaged backgrounds. The program works in conjunction with science and mathematics departments in target high schools to showcase STEM-based careers to students in year 10. By demystifying the tertiary study required for these professions through presentations by currently enrolled student ambassadors, the program endeavours to increase the number of students undertaking science and mathematics in senior school in preparation for their progression to university STEM studies. The premise of the program is based on a continuum of career decision making, particularly for those 'first in family' students, with the decision to undertake senior science and mathematics a requisite to successful transition to the tertiary studies associated with their desired STEM-based career. Results to date have been very positive, with targeted schools reporting an increased interest and level of enrolment in senior sciences and mathematics subjects. This program also has broader application, with requests to host STEM Future events from schools outside the Widening Participation network.

SPEAKER:
Maria Barrett



Re **Pop culture influences on tertiary physics enrolments**

Popular culture offers a variety of opportunities and avenues for potential tertiary students to become engaged in physics. These include programs such as "The Big Bang Theory", or "The Wonders of the Universe with Brian Cox", personalities such as "Karl", video games such as "Portal" and web comics such as "xkcd". These pop culture products are generally not aimed at boosting tertiary enrolment but at entertainment, while still conveying some strong physics concepts and processes. There is anecdotal evidence to suggest that some individuals have enrolled in tertiary science degrees because of pop culture influences, and some historical increases in science enrolments have been linked to popular culture (notably the boom in university forensic science courses in the early 2000s, precipitated by popular crime television programs). But the reach and strength of pop culture's influence on science enrolments has not been systematically studied, particularly with respect to physics.

SPEAKER:
Tom Gordon



AUTHORS AND CONTRIBUTORS:
Tom Gordon
Chris Stewart
Lindy Orthia
Merryn McKinnon

The aim of this project was to examine the influence of popular culture on secondary students' ambitions to enrol in tertiary physics. We surveyed secondary school students in NSW about what influences their subject choices. The survey considered pop culture influences such as television programs, video games, web comics, and more. In this presentation we will share some preliminary results, and discuss the potential for capitalising on popular culture to encourage further enrolments in tertiary science.

WEDNESDAY

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- Is** Insight
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- I** Intermediate
- A** Advanced

Type

- Pr** Produced session
- St** Series of talks
- Pd** Professional development

14:45-15:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/Lf8VKD

St Case studies and papers: Influencing enrolments and career choices, young people and students in high school and university #W17 Auditorium

Im **The SEEC (Science, Engineering, Education, Communication) cooperative**

SPEAKER:
Terry Burns



In general Australian science communication and outreach events tend to have a very short-term focus and an ad hoc approach. This is not to say that we don't do anything good; quite the opposite. We generally provide excellent freestanding programs and events but with several common pitfalls. For example, events/programs frequently:

- focus on "Isn't science fun" rather than "You could do this"
- are inadequately resourced
- are not ongoing
- work in competition with each other
- are often not focused on a specific (and therefore measurable) outcome
- provide very little scaffolding for participants. i.e. they often fail to show where participants fit in or how the event is relevant to them

The University of Newcastle has developed a platform known as the SEEC (Science, Engineering, Education, Communication) cooperative. SEEC provides an innovative and structured sequence of interactions with young people a numerous occasions through their schooling, as well as a context for them to continue to engage with STEM as they grow. SEEC relies on an active partnership between family, community, business and government.

The SEEC cooperative is proposed as a very practical way to increase STEM* engagement, science communication, and young people's interest in science and engineering careers.

In the session the existing SEEC programs at the University will be briefly introduces and to opportunities for further growth and cooperation explored.

*STEM is an acronym for Science, Technology, Engineering and Mathematics

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14:45-15:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/Lf8VKD

St Case studies and papers: International agricultural research, collaboration and interaction and engaging with audiences online

#W18

Room B1

Is Communication between agricultural scientists in international teams for rural development

SPEAKER:

Wesley Ward



AUTHOR AND CONTRIBUTOR:

Lisa Given

This paper reports research findings on how agricultural scientists working on research and development projects in South East Asia communicate with each other. Successful communication between scientists was shown to be vital for building effective relationships and outcomes from scientific projects implemented in developed countries, particularly as it enhanced trust and respect between team members. However, this contention has not been tested for international research teams from developed and developing countries working on collaborative projects in developing countries.

Qualitative interviews were conducted with 30 agricultural project managers, research scientists and communication specialists from various disciplines in agriculture, livestock production, fisheries and forestry in Australia and in Lao People's Democratic Republic (PDR) in 2011 and 2012. Interviewees cited informal face-to-face communication via meetings, field trips and, to a lesser extent, email as the most important forms of communication. Stronger relationships developed between team members when communication modes used non-verbal cues and verbal message content, which led to more nuanced and 'richer' communication that improved professional relationships.

Formal communication through the production of co-authored referred journal and conference papers played a very minor role in communication between these scientists as the donor organisation and Lao institutions placed little importance on them. Therefore, the continued strategic use of face-to-face communication would enable and enhance effective management and outcomes from international collaborations for agricultural and rural development, while further research is required into the effectiveness and future uses of digitally mediated communication between scientists collaborating over geographic and temporal boundaries.

In Building a community of practice in food security research

SPEAKERS:

Joanna Hicks



AUTHORS AND CONTRIBUTORS:

Joanna Hicks
Claire Harris
Wolf Wanjura

In 2013, a project between four Australian government agencies began. The Food Systems Innovation project aims to more effectively apply evidence-based approaches to agricultural development and food security policy and programs. Interestingly the project has a strong focus on learning, knowledge exchange, capacity building and communication.

The project team is working across agencies and many different disciplinary backgrounds: from biophysical and socio-economic science, to knowledge management and adult learning. This has presented a confronting yet fruitful environment for exploring what is, in the eyes of project supporters, critical to ensuring future impact of research for development.

This presentation will summarise some of the activities underway in the project centred around knowledge brokering and communication to improve the creating, sharing, and use of knowledge. Some of these activities include:

- understanding how people, with diverse backgrounds, for example scientists working in CSIRO and program staff working in AusAID, learn and apply knowledge
- developing a knowledge management system, building on the experiences of other projects around the world, as the basis of the online engagement within the Community of Practice
- establishing cross-organisation communication and engagement approaches and priorities.

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14:45-15:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/Lf8VKD

St **Case studies and papers: International agricultural research, collaboration and interaction and engaging with audiences online** #W18 Room B1

MOOC (Massive Open Online Course)

Summary: MOOCs (Massive Open Online Courses) offer a brilliant opportunity for educators, science communicators and scientists to collaborate and interact with a large international audience of web users.

The Global Change Institute, University of Queensland is about to release 'Tropical Coastal Ecosystems', an online course that is expected to be one of the largest free courses ever run in Australia. Included in this course is a virtual fieldwork component: diving on the Great Barrier Reef via Google Maps.

What are the advantages of using MOOCs to access large international audiences? Can we use MOOCs for other science communication outcomes?

A review of our experiences with engaging, educating and collaborating using new media.

SPEAKERS:
Pahia Cooper



St **Case studies and papers: Communicating risk and tackling misinformation in human and animal disease and biosecurity** #W19 Room B2

Im **Communicating biosecurity risks in New Zealand**

The Ministry for Primary Industries (MPI) is the lead government agency that manages biosecurity responses in New Zealand. MPI operates in an environment where biosecurity risks and political pressures must be managed. Effective communication is crucial for all post-border responses. Scientific information guides decision making and helps determine risks associated with non-indigenous species. This presentation will describe a case study and provide insights into how science communication can affect the success of a response. In March 2013, MPI was notified of imported flyscreens with undeclared sand and soil as a ballast. The flyscreens were distributed across Australasia and although the laboratory confirmed they were low risk, MPI carried out a public recall. This case study illustrates that effective science communication can mitigate political and reputational pressures, and ensure appropriate outcomes.

SPEAKER:
Oriana Brine



Is **Ban the book or manage the risk? How to handle asbestos products in the home: a case study in risk communication**

Because of the large number of homes in Australia that include some asbestos building materials, there is an ongoing issue for homeowners, hobby renovators and members of the public about how to safely handle asbestos products. In 2009, Biotext was appointed by the Australian Government Department of Health and Ageing on behalf of the Environmental Health Subcommittee (a committee made up of representatives of all states and territories) to write and design a booklet for homeowners about the risks of asbestos for householders and the general public.

Our brief for the booklet were twofold:

- To communicate the health risks associated with low levels of asbestos exposure, such as occur in a home environment.
- To provide guidance on how to safely handle asbestos products in the home.

SPEAKER:
Janet Salisbury



WEDNESDAY

Use the bitly links to go direct to the online information for each session

Theme

Is Insight **Im** Impact **In** Innovation **Vi** Visualisation **An** Anniversary **Re** Research

Career audience

B Beginner **I** Intermediate **A** Advanced

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Pr Produced session **St** Series of talks **Pd** Professional development

14:45-15:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/Lf8VKD

The first aim of the booklet—risk communication—was a major challenge. As with many other environmental agents, there is no level of exposure that can be identified as 'no risk' and risk communication for this issue involved the difficult task of providing clear information to promote the necessary precaution without over- or understating the danger. To convey these difficult concepts, we developed simple text and infographics to illustrate different risk factors and levels of risk, and designed an overall theme for the booklet based on a visual concept of dandelion fluff.

The second aim of the booklet—guidance on safe handling—was also challenging because of the wide variety of asbestos products that have been used in buildings and the number of different situations when exposure can occur. To achieve this aim, we used simple text, infographics, photographs, hypothetical case studies and action-focused information.

After many drafts, committee haggling and approvals, focus group testing, and sign-off by state, territory and federal chief medical officers, the booklet was published in 2012. Its publication caused an immediate outcry from asbestos disease sufferers support groups leading to 'ban the book' demonstrations in Victoria in late 2012. This was followed by revision of the booklet and publication of a new edition in 2013.

This talk will explore what happened, including our role as science communicators in this highly contentious policy area.

Re **Straight from the horse's mouth: The uptake of risk management strategies for Hendra virus by horse owners**

Hendra Virus is a fatal disease transmitted from bats to horses and then to humans. This zoonotic virus has a mortality rate of 54% in humans and over 80% in horses (McFarlane et al., 2011). With treatment options still experimental, risk minimization strategies aimed at infection prevention are the mainstay for disease management. A vaccine for horses released late in 2012 has become pivotal in controlling infection.

Because current risk management strategies rely on horse owners and trainers understanding and acting on preventative recommendations, it is vital to understand how these recommendations are received and acted upon by these stakeholders. Initial research suggests that there is a spectrum of horse owners' responses concerning strategies they could adopt to protect their horses and themselves against Hendra infections (Kung et al., 2013). These responses include taking action, knowing risk mitigation strategies and not adopting them, and finding the risk mitigation strategies impractical and irrelevant.

What factors drive those at risk of Hendra Virus infection to act on risk management strategies? What impediments are there to stakeholders taking action to protect themselves and their animals? This project is exploring factors involved in stakeholder decisions about risk management strategies: whether to act or not.

SPEAKER:

Jennifer Manyweathers



AUTHORS AND CONTRIBUTORS:

Jennifer Manyweathers
Melanie Taylor
Nancy Longnecker

WEDNESDAY

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WEDNESDAY 5th february

SESSION DETAILS

bit.ly/Lf8VKD

Community Storytelling Series 2 (part 4): Art and practice of story capturing

#W10

Room B3

Pd

Sharing stories is possibly one of the most important ways we have of communicating with each other. It is how we share our hopes and fears, dreams, and passions and what we believe and value as well as what we do not. We discover and make sense of our lives by telling the stories we live and we find out about other lives by listening to the stories they tell.

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PRODUCER:

Kali Madden



SPEAKER:

Susan
Rooney-
Harding



WEDNESDAY

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16:00-16:30

WEDNESDAY 5th february

SESSION DETAILS

bit.ly/1mg3YQb

Formal conference wrap up

#W20

Auditorium

What has transpired at ASC2014? This session will highlight reflections from the diverse community attending ASC2014.

PRODUCER:
Conference organising committee

16:30-17:00

SESSION DETAILS

bit.ly/1avhWWo

Conference networking

#W21

Foyer

Here's your chance to catch up with those people you've been wanting to.

Will you tell them how much you loved their talk? Will you swap phone numbers or tell them that one thing you're going to do in the next week or month to keep the ASC2014 momentum happening?

PRODUCER:
Conference organising committee

WEDNESDAY

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