

► *From the President – Peter Burke*



Once again we had another highly successful SCANZ conference. The feedback indicated that people liked the mix of speakers and the quality of the information that they provided.

For SCANZ to succeed it needs to be an organisation that shows leadership in all sorts of ways and this year's conference was an example of this. The conference theme of looking at where science might be heading and what technologies might be around in 20 years time was designed to get science communicators to lift themselves out of their current environment and focus on the future. There is a saying that goes along the lines "we must be consumed with the everlasting present". That certainly doesn't apply to science and science communication. In my view we must be consumed about the future.

As many of you will know by now I have decided not to seek re-election as President of SCANZ. My reasons are simple and logical. For organisations to succeed in the long term, they need an injection of fresh ideas and new leadership. The Guild of Agriculture Journalists and Communicators places a limit of two years on a person holding office as the president. That organisation has been running strongly for nearly 50 years.

I was privileged to help establish SCANZ and having done that, I think it is time for someone else to take the organisation to a new level and perhaps in different directions. The organisation is in a healthy financial state, has a great web site, runs some excellent events and has a large number of enthusiastic dedicated members. That's a pretty good achievement in three years. I would like to pay a special tribute to Nancy de Bueger who has worked quietly and tirelessly over the past three years to administer the organisation and to

maintain the web site. Without her dedication I doubt whether SCANZ would be in the strong position that it is today.

There are many other people whose enthusiasm and willingness to produce the newsletter, run events and conferences and provide sponsorship has helped establish SCANZ. To all of them go my special thanks. I will still retain my membership of SCANZ and will there in the background to help in whatever way the new executive may want. I wish them every success and they have my full support.

Peter Burke

► **News**

Tentative date set for SCANZ AGM

It is tentatively proposed to hold the AGM on Tuesday October 2 at the Ministry of Transport, Novell House, 89 The Terrace, Wellington at 5pm. The reason for this date is that we need time to have the accounts prepared and other administrative matters resolved. A separate email relating to the AGM will be sent out early in September.

Report on annual SCANZ conference

The fourth SCANZ Conference was held this year at Rutherford House, on the Victoria University of Wellington campus. Guests and speakers this year ranged from politicians to media figures to advertising gurus, but all had valid, and surprisingly similar, messages: young people of today communicate in a completely different way to oldies; tapping into the new media market is the way of the future; until the public clamours for something, it won't change. And lastly, how do we get the message across to the "unconverted" – the people who don't know they're interested in science and technology yet?

The full conference proceedings were posted on the SCANZ website about a week after the conference. However, if you haven't had a chance to read through them yet, we've reproduced them here.

Read on, and if you have any comments, why not start a thread on the SCANZ website forum? It's available for members at:

<http://www.scanz.co.nz/forum.asp>

Steve Maharey, Minister for Research, Science and Technology – Opening Address

For the first time, the SCANZ conference was opened by the Minister for Science, Research and Technology. The minister, Steve Maharey, briefly spoke on attitudes of New Zealanders to science, government investment in science and technology, and what he considers to be the main role of science communications within research, science and technology. His main question is

how we (science communicators) can get science across to “the masses” in a relevant and interesting way, that fits seamlessly into their interests.

Effective science communication in New Zealand should have four outcomes. They include:

- Youth Interest – getting the message that science can be creative and individual across to today’s youth, who don’t necessarily see it that way.
- International Respect – maintaining and enhancing New Zealand’s image as a small, feisty, knowledge-rich country
- Business Investment – connecting business and science such that academia, CRIs, and commercial enterprises communicate effectively and regularly.
- A Science Culture – “New Zealanders like science, but we don’t yet live in a science culture in New Zealand.”

New Zealanders do like science, as evidenced by research carried out by the Ministry for Science, Research and Technology (MoRST) in 2005. The extent of that interest is determined by personal connection to the issue – so, New Zealanders are most interested in medical and health science, saving endangered species, new forms of energy for transport, and agriculture and horticulture. And, only about a quarter of New Zealanders are actively “switched on” to science.

Finland and Sweden, on the other hand, are two countries with a similar population to New Zealand, but where science plays a much larger role in daily society. There is a consistency in the message getting across to the general public that the future of the nation rests on developments in science and technology, and the public accepts and actively buys into that message.

Mr. Maharey then gave some examples of successful science communication in New Zealand, citing AgResearch and their introduction of stab-proof vests, Paul Callaghan’s weekly radio chats with Kim Hill, Scion Open Days in Rotorua, and the travelling future farming roadshow seen by more than 20,000 people nationwide.

The question for science communication now is how we can continue to build on current successes, and how we build future science communication messages around the interests of our audience.

Professor Paul Callaghan – Science: Where will it be in 20 years?

Horizon scanning has always been problematic, began Paul Callaghan. The National Academy of Sciences tried to predict the future of science in 1937 and missed things like space travel and nuclear energy. As the Chinese philosopher Lao Tzu said, “Those who have knowledge, don’t predict; those who predict, don’t have knowledge.”

Given that, the quick hit-list of “hot science issues” in the next twenty years includes: a new space telescope, quantum computing, atomic scale technologies that will influence medical science as well as IT and communications technology, individualised medicine through biochemistry and genomics, brain research, and other new medical techniques. These advances will also give rise to new ethical considerations and choices we as humans have not had to face before.

Callaghan then moved on to what he called “the ugly matter of money”. This more or less boiled down to two points. Firstly, we (New Zealand) need another \$20 billion in export earnings per annum to bring us level with Australia and increase the overall amount of money going into science and technology. As this represents doubling either dairy or tourism, perhaps the third option is to look at exporting science and technology. If that’s the case, we’ll need about 200 successful new science and technology companies in New Zealand rather than the half dozen or so now operating.

Secondly, Callaghan pointed out that there is no political passion, within any party, to spend more on science within government. Only when the public is excited and clamouring for more science research will that happen. If Al Gore could do it in the USA in the space of twelve months, who can do it in New Zealand?

The challenge for all of us is to change public perception of science. To do that, “we have to be quite smart in the way we connect with the public.” It may be more important to “make things human” rather than getting things right. An example of that is the weekly radio show with Kim Hill – it’s seen more as a cosy chat and conversation, which happens to focus on science, than a science lesson. People like it because it’s good radio, reassuring and human. In fact, scientists can do more for science and science communications by being human and fallible than by being clever and expert/insightful.

Callaghan and the MacDiarmid Institute have found ways to get science across meaningfully, including collaboration with non-traditional partners and making science culturally relevant. Examples given included working with poets for the Royal Society of New Zealand (RSNZ) *Are Angels OK?* project and Maori language teachers and local communities in the *Te Reo* physics project. At the same time, it is important to recognise that science communication can’t “lose” the science behind the poetry – these projects must, for example, be able to explain the maths that underlies the physics.

The MacDiarmid vision is for a culture where New Zealand scientists can flourish in New Zealand, where they can connect with scientists that are part of the diaspora, and where science can be a focal point for society. They aim to train scientists who are good scientists, but who are also entrepreneurial, communicative, socially aware, and interested in making a lifetime contribution to New Zealand. This combination makes what they do relevant to the outside world.

Finally, Callaghan touched on some potential problems for science in the next twenty years. To think scientifically requires a healthy scepticism, understanding of numbers, and an ability to think broadly. Scientists need to both understand future issues and how to manage the future issues effectively. Science, he said, is a means of understanding and discovering things that defy common sense.

But he worries that the next twenty years may also bring a threat to reason, with an increasing number of people turning to fundamental religion, mysticism or other type of "certainty seeking". And, there could be a conflict between science and religion in the very near future. Some scientists, most notably Richard Dawkins, are now actively attacking religion.

Science, though, does not tell us how we should live our lives. Science does not have totality of knowledge, so humility in science is paramount, and not consistent with attacks on religion. We should above all respect and appreciate our friends, Callaghan reminded us, and science should retain a sense of humour. We may find we have some strange friends (ie, poets), but they can actually work together beautifully, he said.

Mark Billingham – What technologies will we be using in 20 years?

Mark Billingham, from Human Interface Technology NZ (HITLab) at the University of Canterbury, gave a summary of technology that his lab is currently working on which will influence science and its communication in the next twenty years.

Alan Kay, the inventor of the laptop, said that "the best way to predict the future is to invent it", and invention and innovation is the way that HITLab is working. While the processing capacity of computers and technology has grown exponentially in the past couple of decades, ease of use has not grown at the same rate. This means that there is a surplus of processing power which can be applied towards "useability", and change how we interact with computers. Technology and computers can now start to focus on the value of the experience to the user, rather than the functional parts that make up the technology.

Technology used to provide a great quality user-experience is a trend in the technology of the future, according to Billingham. An example of this "good experience" design is the Reactrix, an innovation which involves a top-down camera projection on the floor of a shopping mall. When people step on it they can "move" various items around the floor and change the appearance of things. The technology required to develop the Reactrix is relatively straightforward, yet it received a US\$27 million investment, for what is essentially a fun experience for the user.

Another trend will be in "collaboration technology" – developing technology that's all about sharing, communicating, and you the user deciding the content. Current examples include YouTube, MySpace, Wikipedia, Second Life,

blogging, Flickr, and the concept of Web 2.0. Social websites are examples of technology that succeeds by fitting into the social life and practices of the user.

Billinghamurst went on to give some other examples of good experience and collaboration technology being developed here in New Zealand and by HITLab:

- The KAREN network (see later talk by Julie Watson for details)
- AccessGRID
- Augmented Reality
- Large Screen Interaction
- Next Generation Visualisation
- Motion capture experience

It takes about 20 years for new technologies to go from the lab to the living room, so that effective commercialisation of research is more about prospecting (spotting the trends) than alchemy. Predicting the future is really about discovering already-existing innovations, and future technology will focus on experience and collaboration.

For more information: www.hitlabnz.org, mark.billinghurst@hitlabnz.org

Stacey Wrenn – A Young Person’s Perspective

Stacey Wrenn is a first-year Law and History & Politics student at Victoria University of Wellington. Last year, she won the RSNZ ‘Realise the Dream’ prize. She gave a short talk at SCANZ on what science means to her and her generation.

Well, on Thursday nights science, for Wrenn, means *Grey’s Anatomy*. Wrenn mentioned that as well as the miraculous medicine, it also means she can copy the show, watch it whenever she wants, and think about all the technology that goes into making the show – it takes a lot of science & technology to make *Grey’s*!

Watching the film “Titanic” also inspired her to put together some of her thoughts on science. While watching, she was blown away by the technology on the ship itself – the workmanship, engineering, navigation equipment, artwork and decorations in first class areas. Travel time had become only a week across Atlantic. Now, of course, it takes five hours and everyone has their own TV screens the whole way across – this shows the huge advancement in technology in the space of less than 100 years.

Science is what provides society with that means to advance. Both big “breakthroughs” and smaller “chipping away at the edges” discoveries advance society in some way. Science also affects all New Zealand and New Zealanders – exporting technologies, climate change, and the ozone layer just a few of the examples that were given. Wrenn’s challenge to young New Zealanders was to take on the responsibility of science – to keep both science discovery and young New Zealand scientists here.

Phil Battley – Tracking the Godwits to China: The Roles of Technology and the Media

Bar-Tailed Godwits, or kuaka, are widespread migrant waders with a long cultural history in New Zealand and an even longer annual migration. They summer in New Zealand, leave in March to go north to the Yellow Sea and Korea, and then on to Alaska to breed in the Northern Hemisphere summer before coming back to New Zealand. Phil Battley and his colleagues are interested in the pattern of that migration, and whether they fly non-stop to Asia or stop enroute. An 11,000km non-stop flight across the Pacific would be both a world record and well above the researchers' estimates of 5,500 – 9,000km non-stop.

The project involved tagging and tracking the path of bar-tailed godwits from their New Zealand summer grounds through to Asia and then Alaska, and was called the Pacific Shorebird Migration Project. It represents collaboration between the US Geological Survey (USGS), PRBO Conservation Science, and various other institutions including Massey University. Sixteen birds were tagged at Golden Bay and Miranda in Feb 2007, and then a website was set up through USGS to track the flights as they happened with maps and daily updates.

Four birds left New Zealand in March, and one went straight from Miranda to Yalu-Jiang, China, a distance of 10,200km in one go. This is the first time a non-stop flight of this duration has been tracked and recorded by researchers, and showed that the godwits are capable of this monumental task – a week of non-stop flight. Of course, other birds did stop, go off-course, or signals were lost.

Researchers wanted to report the results to the media, but had no real media plan, just the daily website. The level of publicity and attention the story did receive surprised everyone, as it spread from local and national radio to international radio, online and print feature articles in a matter of days.

Battley thought the story may have gotten the immediate attention it did for a number of different reasons, including the iconic subject, the record-setting story, and the 'instantaneous' nature of the results. His personal experience with the media was very positive. Most of the attention came before a publication, which in research science is a bonus. He does see a few issues with 'instantaneous publication' via the daily updates on the website. For example, once something 'gets out there', including inaccurate data, it is hard to get back. Inaccurate data written on a website by someone else can not be controlled by the researchers. Open access to results in real-time could also lead to IP issues or even comprising the final publication. Finally, some mainstream media reported neither the institutions nor the individuals, just that "researchers have found that...", a practice which tends to upset the institutions in particular. And, what if it all goes horribly wrong and everyone can see it?

More than 500,000 New Zealanders would have seen the story in print, and the story featured in workplace intranet as a lead story, such as at the Department of Conservation. Exposure in the mainstream media was therefore a good vehicle to raise public awareness of the birds, wildlife, and New Zealand science research. It also provided an educational aspect, by explaining and clarifying positions on the spread of avian flu and the destruction of godwit habitat via land reclamation in Asia.

For more information: philbattley@quicksilver.net.nz
www.werc.usgs.gov/sattrack/shorebirds/overall.html

Lloyd Davis – The Science Communication Challenges Ahead

Lloyd Davis presented an idea of challenges facing science communicators in the next few years. Following on with the theme of “The Future”, he echoed thoughts of other presenters regarding both the uncertainty of prediction and popularisation of “collaborative technology”. He also talked about using that collaborative technology as a tool for effective communication to a younger generation.

Only 18,000 websites existed globally in 1995, seven million in 2000, and more than 118 million in 2007. At the same time, theatre & film audiences, magazine subscriptions, and newspaper circulations are decreasing. These examples illustrate radical change in how the public, especially the younger public, access information.

All the while, the volume of science being produced is increasing, with more than 1.3 million academic papers published annually. However, 90% of academic papers are never cited, and an estimated 50% are never read by anyone except the authors, reviewers, and journal editors. The challenge then becomes how to make your science relevant, and your voice heard, amongst all the competition for both science and communication.

The University of Otago is addressing this challenge by starting a Masters of Science Communication course from 2008. The course will include two endorsed versions: natural history filmmaking and creative non-fiction writing in science, and an unendorsed MSciComm focussing on exhibitions and the online arena. The third is the area Lloyd predicts the “most pains with,” it is such a rapidly evolving area that it will be guesswork in terms of the most effective way of communicating within that realm. Blogs may be one method, with more than 120,000 created daily and 1.4 million posts worldwide per day.

Whatever the solution, the formula for successful online communication will be the same as for other media – it must be engaging, tell stories and be relevant. Lloyd predicts that the future will be online – it’s where the “eyes” of the world now are.

Given that, how does one engage audiences online and have their voice heard?

- Good design and easy user interface and navigation for your website

- Target niche audiences and develop content for them
- Make your site searchable and easily searched by other engines, by using clever search terms
- Engage online communities by linking YouTube videos or photos back to your website
- Incorporate interactive elements within your website
- Post to Forums and link them back to your website, and have forums on your site
- Viral communications – getting your mates to forward things on to their mates is one of the most effective forms of marketing amongst the younger generation.

Science Slam (Chair Bette Flagler)

Science Slam is an informal session where people can talk for two or three minutes about an event they are planning, a science communication issue they would like to address, or share a comment on something they have heard that day. The following people offered their own short Science Slams:

Fiona Proffitt from NIWA talked about a voyage to Antarctica as part of the International Polar Year. It will involve about 20 scientists from CRIs, universities and MAF joining vessels from 10 other countries to do a full census of Antarctic marine life. The voyage is planned for Jan-Mar 2008.

Deirdre Viviers from the Open Polytechnic mentioned the “Writing for Science Course”, a six month course including an online writing component, how to create links, write for the web.

Michele Hollis, also from NIWA, spoke about a forthcoming DVD on life in Auckland’s estuaries and harbours, to which speaker Phil Battley is one of the contributors.

Peter Buchanan is from Landcare. He spoke about the ongoing CarboNZero project involving hundreds of New Zealand businesses documenting their carbon output. Going Carbon Neutral will more effectively market New Zealand companies globally in a changing business atmosphere.

He also spoke later about BioBlitz. There have been six so far, and a future one in Auckland will hopefully have a marine component to it as well. The EO Wilson Foundation is compiling an inventory of global BioBlitzes, and Peter is aiming for national sponsorship and resource kits for the New Zealand version.

Stephanie Grey from Victoria University of Wellington talked about the communications plan for a new feature film called “The Tipping Point” about climate change in the Antarctic region. Part of the plan will involve making a documentary on the challenges of working in the Antarctic region.

Donald Reid, freelancer, had a comment about whether marketing of science gets in the way of the science and its communication.

Emma Timewell, from the University of Auckland, asked for show of hands on how many attending the conference were practicing scientists, how many were trained scientists but now worked as communicators, and how many were communicators who had landed in science. About a third for each category!

Sue Wilkins, from the Department of Conservation, announced they had moved six months ago to five-star recycled green building. DoC are cutting electricity by 40%, recycling grey water, getting rid of rubbish bins, recycling food scraps, and more – SCANZ participants were invited to come and have a look, and contact Sue if interested.

Iona Boase from Crop and Food announced the arrival of new CEO Mark Ward. She also mentioned some new products coming from the vegetable research programme later this year improving the health and nutrition offered by vegetables, such as 'booster broccoli' and vitamin boosted salads.

Hamish Campbell & Karyne Rodgers, of GNS and Te Papa, explained the current Te Papa show "The Poisoners". "Whales" will open later in the year, and GNS is developing a touring exhibition relating to fossils. "Dead Precious" will tour the country for about two years. Hamish has regular fourth Thursday of each month radio slot from 8.45 to 9pm news, called "God's Diary", a wrap-up of volcanic and geological activity worldwide. Penguin will be publishing his book "In Search of Ancient New Zealand" later this year.

Peter Burke, SCANZ President, announced that both he and Nancy de Bueger will be stepping down from their respective SCANZ committee positions at the AGM in October. This gives current members a chance to think about contributions they might like to make to lead SCANZ forward for the next couple of years.

Kim Hill, Cindy Mitchener and Cameron Harland

The final session of Day One involved a more informal talk and interview. First, Kim Hill gave her impressions of science in the media, and then she interviewed and discussed the "packaging of science" with Cindy Mitchener and Cameron Harland, both advertising executives with a more corporate and 'marketing' view of science communications.

Kim Hill mentioned that first and foremost, she doesn't communicate science. The people she speaks to do. She sees science as "politics-free and taste-free zone", meaning she has more freedom to range across different topics. She has to be prepared to ask stupid questions in order to get the message across, which with science issues sometimes means "questions so stupid I'm embarrassed for myself." If someone says to Hill that they didn't understand some of her science interviews on the radio, she in some ways sees that as the point. What's important is understanding enough to make you realise what you don't know, and then you can go and find out more.

The conversation between Hill, Mitchener and Harland ranged across several aspects of science communication and its role in taking science to the masses, with several comments and questions from the audience. Some main points from the discussion are included below:

1. While technology is seen as 'cool', with several instantly identifiable technology brands (ie, Apple, Microsoft, iPod), there is no immediate equivalent for science. Technology is just part of life for most young people.
2. The keys to delivery of an effective message, whatever it is, are relevance and context. "People want to be the show these days, not just watch it." So, you have to be much better at both working out the message and weaving it in a way that is totally relevant to the intended audience.
3. Part of successful science communication is working out exactly what you are trying to achieve through it – raising awareness? Raising money? Increasing science student numbers? If you can make up your mind what you are trying to achieve and consistently put that message across, it will work better.
4. Once a science issue is relevant to the mainstream consumer, it will become interesting to everyone. Climate change is a potential example of this.
5. "Packaging" of science in a way that will get across to young people is the key – can this be done through appealing to their sense of individual creativity, and pointing out that science can in fact be that?
6. A lucid, attractive, fast-thinking young scientist will be used disproportionately in the media, because they are good on camera. Maybe research teams need to think about that when preparing for science issues in the mainstream media.
7. A 'mainstream' 30-second TV ad will not have the same impact as new media (blogs, second life, forums...), and will be a heck of a lot more expensive to produce.
8. New Zealand's one unique selling point is that when the rest of the world is bugged, New Zealand will still be OK. Science can play a huge part in that – the 'clean green' image, environmental science, etc.

Conference Dinner - Denis Welch, Deputy Editor, New Zealand Listener

Denis Welch has spent 30 years at *The Listener*. In its heyday (1981-82), 400,000 issues sold weekly. The figure is now about 65-70,000. The target audience determines the front cover, which, sometimes annoyingly, currently leans towards lifestyle and property. Welch feels that *The Listener* does relatively well in terms of science coverage, and that it covers more science than it used to.

Science does sell issues – it just depends on what kind of science it is. Green science, health science and brain science are very attractive (especially green science), so science that makes it into a full feature story tends to be one of these. It is important to humanise your science story – make the story about

a person or a family, and then you can throw in all sorts of science underneath it. Telling a straight science story alone won't sell.

Welch thinks there is definitely an interest in science out there, and thinks that *The Listener* is currently serving that interest adequately. There is a challenge to us as science communicators to get the knowledge across in a human way and make science interesting to the mainstream!

Day Two – Professor Julian Cribb, Keynote Speaker

After grabbing everyone's attention with an apocalyptic scenario letter from his descendant ("Cassandra") about a runaway greenhouse effect, Cribb went on to give a wonderful talk about the critical importance of science communication to science in general, challenges he faced in his previous roles and how they were overcome, and his view on what makes science communication meaningful and effective.

The budget normally available for science communications is far outstripped by money for science research – in Australia a difference of 20 times or so. However, there are many science issues that are now a social or political matter rather than a straight science one. A case in point is the greenhouse effect and climate change. The emphasis should be on communication of required action rather than "the science behind the story", but this need has not yet been recognised by any government.

One take-home message from the talk is that more resources need to be set aside for science communication. In Cribb's mind, science communication is part and parcel of doing science, and if you don't communicate it effectively you are only doing half the job.

Science communication is not just the passing on of information, but of meaning – it is a two-way dialogue between scientists and the end-users, or, the general public. Too often the two-aspect of science communication is overlooked, with scientists and communicators telling the public what we think they should hear rather than also listening to what they want to hear and talk about.

A second message coming out of Cribb's talk is the need to encourage scientists to talk to the media and communicate with the general public. Communication was written in as part of all senior scientists' job descriptions during his time at CSIRO and supported from the top of the organisation down.

Another aspect of effective communication is the need to promote the science first, not the organisation. Stories that speak more about the science and research, and less about glorifying the institution, are inherently more interesting and will say more! Knowledge is meant for sharing and a well-communicated science story will do that on its own.

Overall, Cribb sees New Zealand as a good country for science communication, especially our ability to get agricultural science knowledge out to farmers meaningfully. However, he sees a danger that this may be overtaken by “fancy future foods”, where the only people who will benefit are the companies making the foods and real agricultural science will be overlooked.

Hot Tips: Sharing Science Communication Ideas (Chaired by Julian Cribb)

This session worked in a similar way to Science Slams, with audience members able to share their thoughts on science communication. The following are some successful science communication programmes, ideas and tips shared by conference participants: :

Alan Royal: The ‘Monitor Farm’ programme is a good example of scientists working with community groups & has helped improve farm productivity.

Katharine Dickinson: Despite its usefulness as a computer skill, she has banned powerpoint as a result of concern that her students losing the ability to debate and orate.

Hamish Campbell: He finds it a challenge to address a live audience for a radio programme, with a strict 50-minute time requirement. He also commends the RSNZ on the “brilliant job” it has done in promoting science in the last 5-10 years.

Julian Cribb: He encourages young scientists to develop their communication skills by communicating on radio before print or TV. 80% of the population get 100% of their science and technology information from mainstream media.

Sue Keall: She used a grant from the RSNZ Science & Technology Promotional Fund to communicate conservation research on tuatara to schools. Involvement in the Big Science Adventures competition was an “extremely positive experience for us”, and she encourages everyone to take science into the classroom.

Donald Reid: There are ~360 secondary schools in New Zealand, and what teachers want are simple, and cheap (free!) practical activities to do in class that require a minimum of equipment. Teachers only have about \$4–5 discretionary spend per student per year.

Julian Cribb: A successful example of a programme involving both students and the general public has been done by Brad Norman, a marine scientist in the USA. He studies whale sharks, an animal in which every fish has unique spots. Using a NASA pattern recognition system, his website can identify any photo of a whale shark that gets posted. This makes any diver in the world a “field assistant”.

Sarah Rusholme: RSNZ is once again running a 'VIP Class' for journalists. This year the topic is land use. It runs over 6 weeks with one session per week in an informal setting, and involves both experts & mainstream journalists.

Diane Dinnis: BiotechLearning Hub is a website linking scientists and the classroom. It develops classroom activities around current research stories, and she is always interested in new ideas.

Peter Fowler, Managing Editor, Newsroom - Media in the 21st Century

Peter Fowler gave a presentation of his personal view of the future. He thinks that the internet will bring far-reaching changes, especially as consumers move from newsprint to electronic formats and the traditional newspaper revenue stream from classified ads dries up. Some of his predictions include:

- Provincial/regional papers will shut to be replaced by a metropolitan paper with a few pages of regional content.
- Editors will be sacked and production outsourced.
- Free internet sites will become subscription only as people start to protect their content.
- News aggregators & RSS feeds will cease to be free.
- Dominance of AP & Reuters is increasing, not shrinking, with most blogs merely acting as "parasites" on traditional media.

What would he like to see?

- TV1 split from TV2, and merged with RNZ to form a properly resourced public broadcaster. This should be fully integrated with the internet, providing domestic and international (particularly Pacific) content.
- A global press release service along the Newsroom model, where people can access what organisations say without 'the middleman'

New Zealand, friendly with most nations, is in the ideal position to deliver the Newsroom model on a global scale. Additionally, opportunities exist for entrepreneurial people to set up small regional media outlets to deliver the regional news that the big mainstream media outlets are not going to be able to deliver. However, if the site does well, the media company will no doubt try to buy the media outlet (TradeMe, for example). The entrepreneur does well out of it, but once again the availability of regional news is threatened.

Alan Royal (a.k.a. "Silver Surfer") – Taking the Piss! Or, Why Your Audience Can't Read Your Documents or Make Sense of Them

Alan Royal began by offering a plea to all of us with broad band connections and high-speed dial ups to remember our less fortunate brothers and sisters who, even with a 56kB modem, are often getting download speeds as slow as 4kB per second. This is a problem for about 20% of New Zealanders, particularly in rural areas. However, the problem is not restricted to rural areas, as members of the audience attested.

Two considerations when building a website are accessibility and readability – crucial issues in terms of content but often overlooked at the expense of fancy design and pretty pictures. The audience needs to be top of the pile when creating a website, not last after designers, webmasters and web writers.

Some of Royal's suggestions for improving both accessibility and readability include:

For Word Documents

- Always start with a fresh template. Files get bloated with a lot of corrupt info when you cut & paste previous versions.
- Turn off the autosave feature.
- Use styles for bullet points.
- Save word files as RTF
- Limit images.
- Insert images – don't cut & paste
- Compress images when you get them into the document, not beforehand.

For PDF Files

- Don't embed fonts [in Adobe Acrobat: file – print – click “unembed fonts”]
- Make files web ready, not print ready
- Reduce image resolution to 72dpi

For Websites

- Stay in charge of the design briefs
- Place less emphasis on 'peer review' (the views of colleagues and management) and pay more attention to the needs of your audience
- Use HTML format (and structure the document) so that people can download bite-sized portions, then they can access only the information which is relevant to them

Additional Tips/Websites

- Make ready use of free on-line readability tests, including those for colour-blindness.
- Google has 'on-line PDF conversion' for free sites which produce small files.
- To strip out track changes, make sure you save after you've turned off track changes or save as RTF then save back as Word.
- In Adobe, using “document properties”, you can open page with bookmarks and save in this format, so whenever anyone opens your document, they will automatically have the assistance of these bookmarks too.
- A free alternative PDF reader: foxitsoftware.com
- Canadian accessibility book (5Mb download!): crossingboundaries.com

Julie Watson, Communities Manager, KAREN (Kiwi Advanced Research and Education Network) – KAREN: Essential Infrastructure for an Innovative New Zealand

Julie Watson spoke about KAREN, the new high-speed network linking universities, CRIs and other research and education institutions in New Zealand

to support science and technology research. In 2004, the New Zealand government provided \$43 million to establish the network, and it officially went live in December 2006.

The main objectives for KAREN are to improve connectivity and collaboration amongst New Zealand scientists and innovators, enable leading edge e-research, and facilitate participation by telecommunications sector partners.

There are currently 16 Points of Presence (PoPs) in New Zealand, the physical locations where people can connect to KAREN. They are in all the universities and CRIs, and currently form the New Zealand network. More partners are anticipated in the future, including schools, museums, libraries, and other organisations devoted to research, education and innovation. The network has a 10Gb capacity, roughly 10,000 times faster than a standard broadband connection.

Some applications of KAREN include:

- High-definition videoconferencing and desktop video
- increased collaboration through AccessGRID,
- linking up computers for computational analysis,
- remote access to large measurement instruments (ie, the Synchrotron),
- access to databanks (e.g. genome projects) and sending of big datasets
- Virtual research environments – ‘collabratories’

Watson also mentioned the KAREN International Workshop 2-5 July: *Building KAREN Communities for Collaboration*, and the 2008 APAN (Asia-Pacific Network) Conference in Queenstown, 4-8 August.

Watson encouraged anyone interested to contact her for more information or a “grand tour” of KAREN - julie.watson@reannz.co.nz, 04 913 1095.

Thomas Pryor – SweeneyVesty

As a member of “Generation Next” and an award-winning PR executive, Thomas Pryor was perfectly positioned to tell us who Generation Next are and what they think about media, science, and the world in general.

Generation Next are today’s 18-25 year olds. They’ve grown up with computers, cellphones and the internet. They’re a multitasking, consumer generation primarily influenced by their friends. They are cynical about advertising and mainstream media, but conversely trust user-generated content.

Generation Next communicate primarily through new media in all spheres of life – for news, education, social networking and work. This includes community, user-driven social sites such as YouTube, MySpace and chat rooms, as well as blogs, podcasts, Skype...

Pryor pointed out that while mainstream media is declining in terms of readers and listeners, the "blogosphere" doubles every six months. "Somewhere, someone is talking about you", yet most large organisations don't yet have policy for dealing with blogging and bloggers. He challenged the audience about whether they knew what was being said about their own organisations via blogs.

He also challenged us, as science communicators, to use new media to our advantage, for example by making websites truly "interactive" rather than just paying lip service to the term. With low entry barriers and cheap production costs, new media can be more effective than an expensive mainstream media campaign. The *New Scientist* "Short Sharp Science" blog was given as an example of effective new media science communication.

For more information: thomas.pryor@sweeneyvesty.com

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► **News**

Floating in the Arctic

In April 2008, journalists from all over the world will spend a week aboard the Canadian research icebreaker Amundsen.

And the World Federation of Science Journalists is offering science journalists the chance to win one of three week-long trips aboard the Amundsen. The winner will fly all the way to Inuvik (Canada), and hop aboard a Twin Otter aircraft to the famous icebreaker, where the winner will get first hand experience of global warming where it is unfolding the fastest.

To enter, send your CV, contact details, key pages of your passport, and a one-page essay on why you should win this competition to:

World Federation of Science Journalists
28, rue Caron, suite 200, Gatineau (Québec) Canada
J8Y 1Y7

Email: <mailto:info@wfsj.org>info@wfsj.org

Tel.: +819 770-0776

Fax: +819 595 2458

<http://www.wfsj.org>

Clearly indicate "Amundsen Competition" on your documents (whether by mail, email, or fax). Applications must be received before November 5, 2007.

For more background on the competition and project visit

<http://www.wfsj.org/resources/page.php?id=62>

Christchurch turns up for Kim Hill

Christchurch people turned out in droves in July for the Lincoln Hot Science with Kim Hill science series in the James Hay Theatre. There was standing room only for the first seminar traversing the science (and other stuff) behind

the water issues for Canterbury. Hill was joined by five experts and debated the issues for two hours. The second seminar (30 July) centred around climate change - and its potential impact on Canterbury, the third (6 August) asked the question 'Our land of milk and honey - are we food producers or polluters?' The Press has the seminars as podcasts - at the following link: http://www.bigpod.co.nz/Default.aspx?tms_id=116&tabid=56&mode=20

More standing room only science

It was the turn of Dunedin-ites to show their interest in climate change when Tim Flannery, author of *The Weathermakers* and Australian of the Year, gave a public lecture and a Café Scientific on August 7th and 8th. The lecture was the 2007 Patricia Coleman Lecture, an annual event organised by the University of Otago. Flannery spoke to a packed lecture theatre and two further videolinked lecture theatres for 45 minutes, giving his views on climate change, the impact of humans, and the very limited time which we have remaining to act before irreversible climate change becomes a real possibility – months and years, not decades.

Science communication takes to the roads of the Manawatu

Responding to a need to raise ratepayer awareness of pressing environmental concerns and a desire to engage more effectively with their widespread rural community, Horizons Regional Council has taken to the road - literally, in a 17.5m truck and semi-trailer! Called the Green RIG (Regional Info 2 Go!), the '14 wheels of environmental thunder' were officially launched in Palmerston North in May 2007 by the Hon. Steve Maharey.

The RIG's custom-built exhibition semi-trailer is packed full of hands-on environmental exhibits, multimedia, communication tools, resources and two 'mobile' eco-teachers. It delivers environmental education and curriculum-linked programmes free of charge to schools, community groups and rural landowners all over the Horizons Region. The high-tech RIG is fully self-contained and energy efficient – it is well insulated, uses passive cooling, low energy LED lighting and energy efficient appliances. It also generates part of its power from on-board roof-mounted solar panels.

Despite having lots of high-tech gadgetry on-board to aid communications, including videoconferencing, mobile satellite broadband, public internet kiosks, access to council data portals and touchscreen interactives, the key intent in setting up the RIG was to ensure good old-fashioned person-to-person communication prevailed. That's why two highly personable educators and facilitators have been employed.

Also important was the creation of an environment conducive to relaxed communication (not something ratepayers necessarily associate with their local council!). Rural audiences are a key target, so information is provided in an engaging and hands-on manner, there is a large on-board BBQ, and hospitality facilities are provided to allow Horizons to host informal 'get-togethers' around the RIG, under the shade/shelter of the Genesis Energy Dome (a 10m inflatable venue that attaches to the side of the RIG). This novel and relaxed

approach for a council to engage with its community is proving extremely successful and a real asset to the region.

Find out more at <http://www.greenrig.co.nz/>, or contact the project manager, Bettina Anderson, on bettina@pukekoblue.co.nz.

US communicator to speak in Auckland, Wellington SCANZ has arranged talks in Wellington and Auckland in late August by visiting US science communicator Robert Logan.

Logan is a former science journalist who headed up science journalism training at the School of Journalism, University of Missouri - Columbia, for many years. Widely published, Robert is a former Qantas Media Awards judge and delivered well received training workshops in Auckland, Wellington and Christchurch in conjunction with the New Zealand Journalists Training Organisation (NZJTO) several years ago.

He has worked with both NASA and the New York Times on science communication issues. He is currently with the US National Institutes of Health (NIH) where he specialises in improving public understanding of science. Logan is being brought to New Zealand by the Auckland Medical School and has offered to speak at events hosted by SCANZ in Auckland on 29th August and in Wellington on 30th August.

He will discuss issues relating to the communication of complexity and give insights on successful science communication, US and global trends, and an opportunity for discussion. Details about each event are below in the events section.

SCANZ has extended this invitation to other organisations interested in this topic. Nibbles and drinks will be provided. To help with planning, please email Phil Johnstone on phil@imagine-that.co.nz for the Auckland event and Marilyn Head on marilyn@actrix.co.nz for the Wellington event if you'd like to attend. Interest is high in these events so please RSVP and arrive at the venue early to ensure a seat.

And a master of science journalism writes...

In the 1980s Fleur Templeton was working at the DSIR as a publicity officer at the Geophysics Division. She wanted to write about science to make it interesting and accessible to all, so she applied and was accepted into the [Science and Environmental Program \(SERP\) at New York University](#) for an M.A. in journalism. She was in SERP 9 and graduated in 1992.

This year, to celebrate its [25th anniversary](#) and recognise its founder and director Bill Burrows, SERP is holding a reunion/symposium of all graduates. As part of the celebrations, a scholarship is being established to help students attend the programme. The keynote speaker will be genomics scientist [Craig Venter](#).

Says Templeton, there are benefits to studying locally but studying at a large overseas institution has many advantages and can give a different perspective on science and the world. US journalism schools also emphasise press ethics and focus on freedom of speech and the First Amendment - we had a whole semester of it and many heated discussions in those classes.

Although it was exciting to live and study in New York, it was hard too, she writes. For a start, American language and spelling is so different, causing much confusion. New York City was our "laboratory" – a big change from an office in Kelburn or Gracefield. The students were sent off on the subway to cover the news of the day – sometimes to interview homeless people, scientists or workers on strike. This was tough at first, but having a Kiwi accent was often an advantage. "Once, some homeless people we were interviewing in Tompkins Square Park were so intrigued they asked me to stay for dinner!"

Graduates come from all around the world, and are known as SERPies, although the course has recently changed to SHERP to include health writing. Templeton thinks she may be the only Kiwi attending the reunion (maybe the only Australasian?) but hope that more New Zealanders might be able to do this course.

When she went to NYC, the opportunities for science journalism study were, as now, limited here. She received NZ funding from the DSIR, and the Ministry of Research Science and Technology, and US funding from an NYU tuition scholarship and a Nate Haseltine Science Fellowship.

Templeton sees this year's symposium/reunion as an opportunity to re-unite with classmates and meet other science journalists (the internet and e-mail have arrived since we did the course). She also hopes to be able to talk about NZ science and convince some science journalists to visit New Zealand.

For further information, contact Fleur Templeton at skink@xtra.co.nz

More offerings on sustainability

The British Council and Mandarin Communications have run a series of sustainability communications workshops in Wellington, Christchurch and Auckland. The workshops will be followed by a networking gathering in October/November where Ed Gillespie from Futerra will be on hand to give a bird's eye view of the changing culture of sustainability in the UK. The workshops filled up quickly so for more information on the networking event, please follow this link for further details, and to register: <http://www.britishcouncil.org/nz-events-spring.htm>

Another chance to speak your mind

After a hiatus, the PCST (Public Communication of Science & Technology) discussion list has been re-started. It is an international list for the discussion of science communication issues, events and ideas.

If you would like to subscribe, go to:

<http://mailmanlist.net/cgi-bin/mailman/listinfo/pcst>

The above address has information about joining the list, and also on posting a new message about an event or a publication. It will operate like the ASC (Australian Science Communicators) list, without moderation, but on an international basis.

New Science Communication Course

From 2008, the University of Otago will be opening a new Centre for Science Communication, the first of its kind in New Zealand. Part of this will be three new courses for students interested in learning how to be an effective science communicator. They are all Masters of Science Communication (MSciComm), with three options: Science & Natural History Filmmaking, Creative Non-Fiction Writing, and a third unendorsed option specialising in new media and exhibitions. For more information, email sciencecommunication@otago.ac.nz.

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► Forthcoming events

What: SCANZ event in Auckland - talk by Robert Logan, visiting US communicator

When: 29 August 2007, 5pm-6.30pm

Where: Merck Sharp & Dohme Ltd, Carlton Gore Road, Newmarket, Auckland

Themes: Communicating complexity & trends in science communication

Website: <http://www.scanz.co.nz>

Contact: Phil Johnstone, phil@imagine-that.co.nz

What: SCANZ event in Wellington - talk by Robert Logan, visiting US communicator

When: 30 August 2007, 5.30pm-7pm

Where: Open Polytechnic's conference room at Lifeworks, 89 Courtenay Place (opposite Reading Cinema complex)

Themes: Communicating complexity & trends in science communication

Website: <http://www.scanz.co.nz>

Contact: Marilyn Head, marilyn@actrix.co.nz

What: Interpretation Network New Zealand AGM and workshop

When: 27-28 October

Where: Taupo

Themes: Evaluation of interpretation

Website: <http://www.innz.net.nz>

Contact: lynda@interpretation.co.nz

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► Reading corner

Science and New Media

Former Harvard researcher Moshe Pritsker has learned the hard way that the trickiest part of any science experiment isn't the hypothesis, it's the method. His idea to make learning method easier was simple - methodology porn. He co-founded a website, *the Journal of Visualized Experiments*, which launched last October. It features videos of experimental procedures and techniques from stem-cell culture prep to hippocampal dye injection, and gets an estimated 300 hits a day. The journal's still a work in progress (nothing's gone viral yet), but just wait. "No one has published results in video before," Pritsker says. "Scientists don't know how to do it." Visit the online journal at <http://www.jove.com/>, or check out some of the media coverage about it: http://www.wired.com/science/discoveries/magazine/15-07/st_youtube.

The Ethics of Journalism don't work for Science

Journalistic ethics require balance. We know that in reporting a political story, for example, the views of both sides must be given equal weight so that the final story appears unbiased and a-political. However, we know that the same doesn't hold true for a scientific argument. Climate change is the most recent example of an issue where the mass of scientific knowledge has been given equal weight against a think-tank, or lone nay-sayer. Philosophy Professor Jonathan Wolff argues in his monthly column that the ethics of mainstream journalism don't and shouldn't hold where scientific "debates" are concerned. To read the complete story, visit

<http://education.guardian.co.uk/egweekly/story/0,,2116571,00.html>.

Embargoes – do they work?

Another dilemma facing science journalists – the embargo. Most journalists report a story when they get it, but not science journalists. Quite often, they are faced with an embargo timed for when an academic journal publishes. This means that even if they have a story, they have to sit on it for a few days. The debate about value and necessity (or otherwise) of embargoes when it comes to science journalism has been opened again recently in the UK, with an article in the Independent online and Fiona Fox's blog. (As an aside, Fiona is the director of the UK Science Media Centre, so her blogs are well worth reading.) You can find the stories at the following two links:

<http://news.independent.co.uk/media/article2791093.ece>

<http://fionafox.blogspot.com/2007/07/embargoes-helping-or-hindering-good.html>

Want to join SCANZ?

If you have an interest in communicating science and subscribe to the objectives of the organisation, you are welcome to join. Current members include working journalists, public relations professionals, academics, science festival staff, museum directors, policy advisers, students, scientists and researchers, and science leaders.

The membership fee for 12 months is \$80 (\$32 for full-time students).

Membership forms and instructions are available through the SCANZ website, at <http://www.scanz.co.nz/joinus.asp>

Updates for the Web

If you have something that you'd like publicised before the next newsletter (November 2007), please send it to either Karen Hartshorn (karen.hartshorn@otago.ac.nz) or Marilyn Head (marilyn@actrix.co.nz) and we will add it to the SCANZ website.

Want to get in touch?

Peter Burke, President peter.burke@levin.pl.net
Nancy de Bueger, Secretary/Treasurer nancy.debueger@frst.govt.nz
Karen Hartshorn, Newsletter Editor karen.hartshorn@otago.ac.nz

NB: These positions are only valid until the AGM in October 2007, at which time a new President, Secretary and Treasurer will be elected and their contact details publicised.

Next Newsletter

The next SCANZ newsletter is due in November 2007. If you have anything you'd like to contribute, please email Karen Hartshorn on karen.hartshorn@otago.ac.nz with your contributions – events, news and general science communication stories all welcome.

Here's wishing you the best until next time, from the Deep Freeze that is currently the lower South Island!