Welcome from the Executive Director

Welcome to the final edition of ASDI’s newsletter for 2011.

This issue brings with it the announcement that I have accepted the role of Director of Research and Development at Curtin University and commenced in this role on the 21st November. The search for a replacement Executive Director for ASDI is currently underway.

Highlights from my time as Executive Director of ASDI during the last 3 years include:

- The recruitment of Professor Chun-Zhu Li and the establishment of the Fuels and Energy Technology Institute.
- The establishment of the Curtin Institute for Biodiversity and Climate.
- The growth of the Curtin University Sustainability Policy Institute.
- The establishment of the International Institute for Agri-Food Security and the appointment of Professor Janet Bornman as the Institute’s Director.
- The launch of the Seafood Science and Health Centre of Excellence.
- The establishment of the Centre for Grain Foods Innovation.
- Involvement in the WA Geothermal Centre of Excellence.
- Curtin’s involvement in the National Centre of Excellence in Desalination.
- Launch of the Centre for Research for Sustainable Transport.
- ASDI has either held or been affiliated with around 45 events since 2009 and has had the privilege of hosting exciting national and international speakers for these events, most of which were offered free of charge and open to the public.

ASDI has also been actively involved in policy submissions and data reviews to Government in areas such as green cars, gas supply, food, agriculture and aquaculture.

I look forward to seeing ASDI grow in the coming years and I thank you all for your support. My best wishes for the festive season.

Charlie Thorn, Executive Director
A Curtin University study has revealed remanufactured refrigeration and air conditioning compressors produce up to 93 per cent less greenhouse gas emissions than new original equipment manufactured (OEM) compressors.

Conducted by Curtin’s Director of the Sustainable Engineering Group, Associate Professor Michele Rosano and Senior Lecturer, Dr Wahidul Biswas, the research has provided a case for the market development of remanufactured compressors as more sustainable alternatives to traditional OEMs.

Associate Professor Rosano said the study included a life cycle assessment of each stage of the remanufacturing process, including disassembly, cleaning and washing, machining, reassembling, and testing, to determine the environmental benefits associated with the potential substitution of a new OEM compressor with a remanufactured compressor.

“The replacement of a new OEM compressor with a remanufactured compressor can mitigate about 1,470 kg of CO2 emissions, which is similar to the greenhouse gas emissions from 1.56 MWh of electricity generation in WA, and 1.71 MWh in Queensland and NSW,” she said.

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Associate Professor Rosano said results from the study also highlighted the importance of remanufacturing in reducing not only the resource intensity and carbon footprint, but also the cost associated with the purchase of a compressor.

“If the carbon price was set at $50 per tonne of CO2 emissions, a new OEM compressor would cost of $79.50 and a remanufactured compressor only $5.85,” she said.

“Coles Supermarkets, the second-largest supermarket chain in Australia, uses around 7500 compressors in their stores, with an average size of 27 kW. If these compressors were completely replaced with remanufactured compressors, 19,500 tonnes of CO2 emissions could be avoided.”

Associate Professor Rosano said the replacement of OEMs pre-used parts with new parts helped to avoid the disposal of entire units and achieved a significantly higher greenhouse gas management benefit for major industries.

“Including the final disposal of compressor units into a life-cycle assessment may become an increasing reality in the industrial market as further costs and limitations are placed on the landfill disposal of industrial wastes,” she said.

“In addition, as mining resources start to deplete, remanufacturing and recycling will increasingly become the norm for industrial machinery and componentry, both on an economic basis and with the need to increase greenhouse gas management of production activities in carbon-constrained economies.”

Associate Professor Rosano said achieving eco-efficient production required the recovery of resources from the waste stream at the end-of-life of a product.

“By using recovered end-of-life parts, remanufacturing should be able to reduce the environmental costs associated with both the manufacturing and disposal of heavy and material intensive industrial machinery,” she said.

“Also, by providing customers with remanufactured products, companies can provide the same level of service using fewer resources.

“In this way, remanufacturing can importantly reduce the resource intensity and increase the eco-efficiency of product systems.”

National remanufacturing company, Recom Engineering, provided financial support for the study, Engineering reduced greenhouse gas production: A Remanufacturing solution.

Associate Professor Rosano said the research could assist Recom Engineering to manage the carbon footprint of its remanufacturing business and assist in the market development of remanufactured compressors as more sustainable alternatives to the traditional purchase of new OEM compressors.

seg.curtin.edu.au

Source: Andrea Barnard, Public Relations, Curtin University
Siberia visit highlights potential for research collaboration

An international summer school program has given Curtin University students, staff and world-renowned climate change experts from around the globe the opportunity to visit Russia.

Ten students and three staff from Curtin’s Faculty of Science and Engineering were invited to participate in the inaugural program with Tomsk State University, Russia. The program took leading international participants, including Nobel Peace Prize winner, Professor Terry Callaghan, on a 1200km journey from Tomsk to the Altai Mountains.

Curtin Director of the Rio Tinto Centre for Materials and Sensing in Mining, Professor Vladimir Golovanevskiy, who played a major role in the establishment of the program, said the experience was life-changing.

“The overarching theme of the program was the exploration of the natural environment of Arctic and Alpine areas, looking into relief, soils, permafrost, glaciers and the ecology as indicators of climatic changes,” Professor Golovanevskiy said.

“This program brought together more than 50 participants from eight countries to go on a 1200km journey through the Altai Mountains region, where they attended guided tours of environmental biodiversity hotspots, plenary sessions and lectures, field trips and undergraduate and postgraduate student presentations.”

Curtin Director of the Sustainable Engineering Group, Associate Professor Michele Rosano, said the trip highlighted the potential for research collaboration between Tomsk State University and Curtin.

“Both Siberia and Western Australia share a fairly geographically remote location and arid environment. We are both also substantially resource rich, particularly in mineral wealth, which could give us a fair bit to consider in the management of our resources and agricultural sectors,” Associate Professor Rosano said.

“By comparing Curtin’s engineering technologies, methodologies, and the ways we teach engineering and science with Tomsk State University, a research collaboration scheme could provide great benefits to researchers and students at both universities.”

Professor Golovanevskiy said the program would help to further strengthen Curtin’s relationships with Tomsk universities and other top Russian educational and research institutions.

“The experience was enriched by the open and friendly nature of the Russian people and wealth of knowledge from Tomsk State University academics and other distinguished speakers from around the world,” Professor Golovanevskiy said.

Professor Golovanevskiy has played a key role in the establishment and strengthening of ties with Tomsk, including the signing of a memorandum of understanding between the six Tomsk universities and Curtin in March 2010, a three-week stay of Tomsk sculptor, Leonty Usov, as an artist-in-residence at Curtin in April 2010, a research seminar between Curtin and Tomsk Polytechnic and Tomsk State universities in October 2010, and several reciprocal senior research staff visits.

During the Siberian summer school program, Professor Golovanevskiy and Associate Professor Rosano presented a joint lecture on the socio-economic effects from the aftermath of natural disasters.

Curtin University intends to host the next International Summer School program with participating universities in 2012.

seg.curtin.edu.au

Source: Andrea Barnard, Public Relations, Curtin University
Natural balance needed in childhood nature deficit

A Curtin University academic presented a talk on Nature Deficit, Forests and Education at the inaugural Margaret River Flourish Symposium, held from 7-9 October.

Curtin School of Education lecturer, Sonja Kuzich, said the Symposium provided a unique opportunity to discuss the lack of connection with nature evident in the lifestyles of today's children.

"Loving, living and learning through nature are an essential part of childhood and it is surprising to learn how many of today's children have little opportunity or inclination to be outdoors," Ms Kuzich said.

"A recent Australian longitudinal study, Growing up in Australia, showed that between 2004 and 2008, six to nine year olds spent just under two hours a day outdoors on the weekend, with the rest of their time spent on sedentary indoor activities.

"Even more surprising is that in just over one generation of Australians, outdoor play has reduced from 73 per cent to 13 per cent."

Ms Kuzich said the impact of children's disconnection with nature was manifold and evidenced through the decline in wellbeing and cognitive and physical health reported in a number of research findings.

"A great deal of evidence shows that early exposure of children to free, unstructured play in nature before the age of 12 develops a lifelong fascination, care and respect for the environment," she said.

"Immersion in natural landscapes, such as forested areas, also promotes a sense of awe, wonder and an appreciation of the 'magic' of nature in children.

"With the proliferation of artfully landscaped and manicured suburban housing developments, 'litigation proof' council playgrounds and school grounds, coupled with the parental fear factor, there is little space left for children to enjoy access to the natural environment," she said.


"Louv coined the term 'nature-deficit disorder' to describe the loss of this innate emotional affiliation we as humans have with nature, which has been built into us over millions of years of evolution to assist our survival."

"At a time when concerns about the state of the globe, environmental destruction, climate change and precarious political, social and economic conditions are paramount, there is an irony that children are being increasingly divorced from the very elements that may be the key to our future survival."

Ms Kuzich said there was a strong need for environmental education in Australia to address the lack of awareness and care concerning forests.

"Education challenges conformity and contributes to appreciation and respect. Regaining a sense of awe and respect for forests through education can assist society to gain that much needed 'natural balance'."

Sonja Kuzich is a lecturer in curriculum and pedagogy, with experience from early childhood through to primary and tertiary teaching. As well as teaching and curriculum development work, she has been involved in in-service teacher education in the areas of literacy, numeracy, science and learning difficulties. Ms Kuzich developed the Western Australian Professional Standards for Teaching, which provides the code of ethics and professional learning guidelines for teachers in Western Australia.

CIBC researchers attended the Flourish Symposium in Margaret River, on 7 October 2011, as well as a number of associated Flourish activities over the weekend of 8 and 9 October, to outline research activity in the safeguarding and management of safe havens for biodiversity in South-West Australia.

Flourish hosted a symposium, exhibitors, entertainers, displays, educational activities, workshops, topical speaker sessions, interactive demonstrations, children's activities, an exclusive Under the Stars dinner and much more.

cibc.curtin.edu.au

Source: Andrea Barnard, Public Relations, Curtin University
Disinfection by-products (DBPs) were detected in drinking water over 35 years ago. Since then identification of DBP species has closely paralleled advances in analytical chemistry. Today over 600 individual DBP species, representing several chemical classes, have been identified. Potential DBP health concerns reported by some toxicology and epidemiology studies include elevated risks of developing certain cancers or adverse reproductive outcomes.

New drinking water regulations must be evidence-based, requiring next-generation DBP studies that better link advances in analytical methods with a focus on DBPs that have the biological plausibility to cause adverse outcomes.

The one-day workshop highlighted recent advances in DBP research including:

- What evidence is available regarding adverse health effects of DBPs?
- What DBPs are emerging as key compounds from a regulatory perspective?
- What do we know about the occurrence of unregulated DBPs—particularly in the context of Western Australia?
- How are advances in drinking water treatment influencing the next generation of DBP research?
- And most importantly, what is a practical way forward?

A major output of this workshop as well as a related symposium held in Adelaide as part of OzWater '11 is a book titled, *Disinfection By-Products – Relevance to Human Health*, co-edited by E/Prof Steve E. Hrudey (University of Alberta) and A/Prof Jeffrey W.A. Charrois (Curtin University).

The book will be published by International Water Association (IWA) Publishing and is also sponsored by Australian Water Association (AWA). This timely output is targeted towards drinking water professionals (engineers, chemists and public health professionals) working on the front lines of drinking water issues where they must encounter actual day-to-day issues of risk management concerning DBPs in relation to all the other regulatory and water quality issues they must manage.

The book will be published in 2012, so stay tuned to this space for additional details in the new year.

Finally, the event was a major success, thanks to strong support from our event sponsors including: Curtin University, ASDI, the Water Corporation of Western Australia, the WA Branch of the Australian Water Association, Water Quality Research Australia (WQRA) and GHD.

cwqrc.curtin.edu.au
The 19th Congress of the Modelling and Simulation Society of Australia and New Zealand MODSIM2011 will be held in Perth from 12 to 16 December 2011.

One of the sessions of this prestigious international event (which attracted more than 900 submissions) will be a session portraying the sustainability research on China carried out at the Curtin University Sustainability Policy (CUSP) Institute under the leadership of Professor Dora Marinova.

The session is entitled Sustaining China’s Future: Understanding Economic, Social and Environmental Challenges. The CUSP’s Chinese research group will present their research findings relating to economic growth models and human-induced environmental problems with a particular focus on China’s road to pursuing sustainable development and preserving the natural environment.

In their research, CUSP’s academics have been collaborating with the Management School of the University of Science and Technology of China since 2007. This co-operation has brought together researchers and PhD students from both universities. The 19th Congress of the Modelling and Simulation Society of Australia and New Zealand MODSIM2011 will be held in Perth from 12 to 16 December 2011.

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The MODSIM2011 papers cover a wide range of topics, including water management, CDM (Clean Development Mechanism) trends, urban household carbon footprint, population ageing and environmental education, technique efficiencies and ecologically friendly society.

CUSP CRC Success

CUSP is one of the participants in the successful CRC for Low Carbon Living ($28 million), which will bring together leading researchers and key end-users to develop new tools to reduce carbon emissions and transform the built environment to a low carbon future.

CUSP will play a particular role in the Engaged Communities Program of this CRC, overcoming barriers to low carbon living through deliberative processes that connect residents, businesses and local government in cities such as Fremantle, Canning and Geraldton. Scenario modelling of lower carbon urban design developed in another of the CRC’s Programs, Low Carbon Precincts, will be applied, as will energy and building technologies developed in the CRC’s third Program, Integrated Building Systems.

The aim is to enable communities and decision-makers to adopt low carbon solutions in highly liveable cities of the future. The CRC, which runs for 7 years, will result in some long term research positions at Curtin.

If you wish to find out more about this short course, please contact Professor Jeffrey Kenworthy.

J.Kenworthy@curtin.edu.au

CUSP Short Course

Sustainable Cities—Intensive, 1st Semester, 20 – 24th February 2012

This unit examines cities around the world from within a sustainability framework. Its core focus is the issue of automobile dependence in cities and the associated land use, environmental, social, economic and urban design issues surrounding it. The unit covers a transport history of cities, the transport energy issue, private, public and non-motorised transport, issues of suburban sprawl and transit-oriented development, central cities, environmental technologies and the greening of cities and other issues. The unit is taught within a very broad international comparative research framework, with many examples of the best and worst in cities. Students are required to complete a project developing a vision of sustainability for a particular city or part of a city.
Curtin researchers have secured a CRC CARE project on removing persistent organic pollutants (POPs) from contaminated sites using cutting-edge technologies.

The research team at the Department of Chemical Engineering at Curtin University has secured funding from CRC for Contamination Assessment and Remediation of the Environment (CRC-CARE). This project team includes A/Prof Shaobin Wang, Dr Hongqi Sun and Professors Moses Tade and Ming Ang. The overall aim of this project is to establish a combined strategy applying nanotechnologies and sulphate radicals to decompose persistent organic pollutants (POPs) in water and soil for various contaminated site remediation.

“We have keen research interests to create a clean environment, which had been highly contaminated by conventional technologies. POPs have received particular concern owing to their long life-time, toxicity, and resistance to natural attenuation. There is an urgent need to remove those pollutants from nature,” A/Professor Shaobin, the project leader said.

“The research strengths of our team focus on environmental remediation and nanotechnology. I think that dealing with POPs will need a more complicated design integrating emerging technologies. Now it is the time,” he said.

“Magnetism is created onto nanocatalysts, which facilitates advanced oxidation processes (AOPs) to completely destruct POPs to CO₂, H₂O and inorganic ions. I think we have found out the best way to deal with soil contamination by magnetically recovering the nanocatalysts,” he said.

Professor Moses Tade, Dean of Engineering and Deputy Program Leader of CRC CARE, said the funding of the project is direct evidence that our research at Curtin is at the leading edge in environmental remediation.

“Research frontiers always exists at the multidisciplinary interface,” he said. “With outstanding cooperation, experiences in catalysis, chemical process, nanotechnology, and modelling have been brought together to establish our research reputation.”

The team believed that the proposed approach is theoretically and practically feasible for the remediation of the contaminated water and sites. The developed nanocatalysts and AOPs and the applied instruments will be integrated together to form a patent as well as commercialisation. The innovations of this project lie in the development of new functionalised nanomaterials with ferromagnetic property for both advanced oxidation of organic compounds and magnetic separation.
Innovation in Architectural Design – New Facilities at Surfer’s Point Margaret River.

The Centre for Sport and Recreation Research (CSRR) has been developing a relationship with the Department of Architecture with the aim of establishing a nexus between the theory and innovation in architectural design introduced to students in the teaching and learning programs and the environment of ‘real world’ procurement decision-making related to sport and recreation infrastructure.

The Surfers Point project was directed by Curtin Architecture staff Dr Stephen Neille and Dr Beth George - CSRR introduced them to the Department of Sport and Recreation (DSR) and, through those connections, Surfing WA and the Shire of Augusta Margaret River.

The project emphasised the need for innovative solutions sensitive and complementing a fragile coastal environment but accommodating to a large event-related influx of visitors. In November Curtin University architecture students unveiled their visions for a major sporting event at Margaret River.

The vision was part of university assessment for the second-year students to create facilities and infrastructure for a world-class surfing event, the Drug Aware Pro Margaret River.

“The students work is timely as the Shire recently received investment to upgrade the facilities and support the Margaret River Pro.”

Plans for the upgrading and redevelopment of Surfers Point have become even more imperative given the devastating fires which we have experienced.

The students presented their work to the Hon Barry House MLC for the South West region on 4 November.

At the ceremony, Mr House spoke about his time growing up in the South-West region and how important new design thinking was in respecting cultural identity and areas of natural beauty.

CSRR initiated the function which brought together decision makers including the Hon Barry House MLC, President Legislative Council, Minister for South West Region; and Gary Evershed CEO, Shire of Augusta - Margaret River, Graham Brimage, Director Strategic Policy Planning DSR with the staff and students. CSRR and the Department of Architecture have subsequently been requested to be involved in the submission of the Shire’s EOI to attract $1-$2 million for round 2 funding from the Regional Development Australia Fund.

Discussions are underway to continue working on other projects with the Department of Architecture in 2012.

Professor Marian Tye, Director for the Centre for Sport and Recreation Research (CSRR) said the aim was to bring the students together to experience the decision making process by the Western Australian government when it comes to commissioning new sporting facilities.

“The students were asked to address ways in which regional towns can develop architectural facilities to create high quality environments that cater for ‘one-off’ world class sporting events and the ongoing needs of the community,” Professor Tye said.

The students had to keep in mind the year-round catering for the Margaret River and Prevelly community including the number of people visiting the region over the weekend.

“The assignment brief asked students to design an ensemble of permanent and temporary facilities for the Prevelly and Margaret River region that met the needs of the ‘Drug Aware Pro Margaret River’ and community,” she said.

Gary Evershed, CEO Shire of Augusta Margaret River, said he was impressed with the stimulating ideas from the students.

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“The new thinking relating to the significance of Prevelly Point and the need to enhance and support the iconic surfing location was a breath of fresh air,” Mr Evershed said.
A virtually allergy-free frozen dessert and instant noodles made from a grain commonly used for chook feed have taken out the honours in the Department of Agriculture and Food’s 2011 Student Food and Beverage Product Development Awards.

This is the third year of the awards, supported by the department’s Food Technology Unit based at Curtin University, which recognises and encourages innovation in food product development using local ingredients.

The awards give food technology students the opportunity to apply their research skills and develop new, innovated food products based on locally grown, fished, farmed or processed ingredients.

An iScream Oats Frozen Dessert Sandwich—developed by Gary Tan, Kahyen Lam, Novia Rahardjo, Yasminnissa Yusuf and Priscilla Pedersen—won the Undergraduate Award.

Vegans and people with allergies to dairy, egg, soy and nut will be able to enjoy the oat-based frozen confectionery dessert, similar to ice-cream, layered between two oat and chocolate biscuits.

Milletilicious Instant Noodles—developed by Aneth Msamwa and Shaoyuan Wang—took out the Postgraduate Award.

The non-fried instant noodle contains a high proportion of millet flour (a cereal grain) but still retains the silky, smooth and elastic texture of homemade Asian noodles made from wheat.

The noodles can be rehydrated in two minutes by adding boiling water or just one minute by boiling in hot water.

Department Director Grains Industries Development Mark Sweetingham presented the awards and said the event represented a successful collaboration between the industry, government and education sectors.

“The awards bring together cross-sector skills and knowledge to create new opportunities for both the students and novel food product development,” Dr Sweetingham said.

“Collaboration and innovation such as this can potentially add value to the local food industry and ensure a thriving and suc-

Other products developed through the awards included a sorghum chiffon cake, cereal and seed muesli bites, a chia and honey breakfast bar, carrot jam, red bean ice-cream dim sims and banana and date fruit leather.

This article first appeared in the publication, “From farm to fork” in The West Australian on Friday, November 25, 2011
The WA-Organic and Isotope Geochemistry Centre (WA-OIGC) is an international recognised Centre contributing to world-class research aiming to:

- Improve the ability to forecast environmental responses to climate change;
- Help to manage current threats to biodiversity;
- Increase the ability to identify crude oil and gas sources, to the benefit of petroleum exploration;
- Improve understanding of controls on water quality and to help protect our precious freshwater resources (e.g., water, sediments and soil) as well as assisting the full realisation of Australia’s natural resources (e.g., petroleum, gas exploration).

Research in current priority areas at Curtin include application areas of biomarker and compound specific isotope research include the study of climatic trends both past and present, issues concerning environmental sustainability research (e.g., water, sediments and soil) as well as assisting the full realisation of Australia’s natural resources (e.g., petroleum, gas exploration).

The WA-OIGC is pleased to welcome the following new staff.

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**Dr Martijn Woltering, Department of Chemistry.** Martijn was recently awarded his PhD from the University of Minnesota (USA) in 2011. His thesis focused on thaumarchaeotal distribution and the use of the TEX86 temperature proxy in large lake systems. Before starting his PhD studies Martijn obtained his Master of Science Degree at the University of Minnesota majoring in Water Resources Science, Limnology and Oceanography track. For Martijn’s master thesis he worked on a sediment core from Lake Malawi to produce a record of temperatures from south east Africa, that spans the last ~75,000 years. Prior to this, Martijn was employed as a Research Assistant in the department of marine organic biogeochemistry at the Royal Netherlands Institute for Sea Research, Texel. In 2003 Martijn obtained his Bachelor of Science degree in Analytical Chemistry from Saxion Hogeschool Uselland (NL).

Martijn is currently employed as Researcher for 1 year on the ARC (QEII) Discovery project of Professor Kliti Grice, Director of the WA-OIGC, measuring metallo prophyrins using an orbitrap LTQ- XL LC-MS and maleimides using GC-MS to investigate photic zone euxinia among different global mass extinction events in the Earth’s history.

In addition to this, Martijn is also working with the WA-OIGC team (and ANSTO) on the analysis of GDGT lipids on the LC-MS in samples from lakes and ocean to produce records of past temperature variability. TEX86 and CBT/MBT-temperatures from a lake on Frazier island and TEX86 and CBT/ MBT-temperatures from the Indo pacific warm pool. Martijn has published in leading international journals including Geochimica et Cosmochimica Acta, Palaeogeography,Palaeoclimatology, Palaeoecology, Limnology and Oceanography, Earth and Planetary Science Letters and the most prestijous scientific journal Nature with a total of 239 career citations. Field of interests are LC-MS, Biogeochemistry, Oceanography, Limnology, Paleoclimatology and Organic Geochemistry.

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**Dr Jeffrey Dick, Department of Chemistry.** Jeff began his studies in the geological sciences and chemistry at Indiana University and completed a PhD at the University of California, Berkeley with a research project on the thermodynamic properties of proteins in hydrothermal systems. That project yielded datasets and group contribution algorithms for predicting the energetics of formation of proteins from organic or inorganic components over a wide range of conditions, and a computer software package for chemical stability calculations of proteins as well as minerals and aqueous species.

Following his PhD studies, Jeff’s research took him to Arizona State University where with support from the National Science Foundation postdoctoral fellowship program he developed thermodynamic models relating metagenomic sequences to geochemical conditions in a hot spring in Yellowstone National Park, aiding understanding of the composition and interactions of the microbial communities there. As a senior research fellow under the new CSIRO Minerals flagship cluster led by Curtin (Grice, Evans, et al).

Jeff will undertake the senior research role developing thermodynamic databases for organics and metal-organic complexes, using a variety of software tools to model the transport of Zn, Pb and other metals, and working in conjunction with experimental investigation of properties such as solubility and differential transport of metals. Jeff will model the effects of organics on metal solubility, transport and deposition. Retrieval of thermodynamic parameters for organic species and metal-organic complexes and database development for software packages. Characterisation of organic and biotic contributions to the oxidation-reduction state of hydrothermal systems. He has published several fundamendally important papers.
ClimateWatch

Summer is a great time to get outdoors, explore your environment and contribute to science.

ClimateWatch was developed by Earthwatch with the Bureau of Meteorology and The University of Melbourne to understand how changes in temperature and rainfall are affecting the behaviour of Australia's plants and animals. The first project of its kind in the Southern Hemisphere, ClimateWatch enables every Australian to be involved in collecting and recording data that will help shape the country’s scientific response to climate change.

“Changes in rainfall and temperature across Australia are already triggering changes in the established flowering times, breeding cycles, migrations and distributions of the country’s flora and fauna, both native and introduced.” said Dr Lynda Chambers, Senior Researcher, Centre for Australian Weather and Climate Research. “Citizen scientists play a very important role as we do not have enough dedicated scientists to monitor different areas.”

“The WA Christmas Tree (Nuytsia floribunda) is a great example of what we are looking for with ClimateWatch,” said Rich Weatherill, Program Manager, ClimateWatch.

“The plant flowers between October to January, it’s iconic, easy to recognise and has a spectacular flowering event. Having floribunda in the scientific name is very appropriate because the Latin origin floribundus means profusely flowering.”

Keep an eye on and start recording what you see online. Once you have decided on a species to watch, it’s a good idea to think about how you can make ClimateWatch part of your regular weekly activities and to keep a pen and paper handy to make a note of your observations on the spot.

Now is a great time to see the WA Christmas Tree flowering. So check out climatewatch.org.au, keep your eyes peeled and record your observations.

climatewatch.org.au

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theconversation.edu.au

Free Range Kids

The aim of Nature Play WA is to help parents help their children make the most of outdoor activities involving the bush, beach, and national and neighbourhood parks.

Nature Play WA is the result of a growing awareness of the importance of nature on the lives of children and parents.

There are lots of reasons why kids should make the move from the TV or computer room to the outdoors. Probably the best reason is that it’s fun, and you and your kids will be happier and healthier doing things together.

But there are other important considerations. Research undertaken around the world indicates there are real benefits for children being involved in nature.

Such research indicates that:

- Children benefit from appropriate risk-taking during outdoor play, by helping them refine their motor skills and gain confidence in being physically active
- Older children who spend more time outside tend to be more physically active and less likely to be overweight, and
- School gardens positively affect children’s learning and behavior, and that students involved in gardening develop a better school attitude, student bonding and teamwork.

natureplaywa.org.au

Cockburn Wetlands Education Centre

The 8th annual WA Wetland Management Conference 2012 will be held on World Wetlands Day, Thursday 2 February 2012, 9am-4pm at the Cockburn Wetlands Education Centre, 184 Hope Road, Bibra Lake. The event brings together representatives from State and Local Government, community organisations, the education and private sector for a day of information sharing and networking. The cost is $60 ($20 concessional) and includes event, food and a copy of the proceedings. For program and registration forms please contact denise@cockburnwetlands.org.au or phone 9417 8460.
Upcoming Events
Supporting material (iLectures, notes, etc) for the majority of the following events can be found at www.asdi.org.au

Recent Events
During November, Dr Alexey Muraviev, Coordinator of International Relations and National Security Programs at Curtin University facilitated two significant national-level policy forums with sponsorship support from ASDI: the 35th Australian Member Committee meeting, Council for Security Cooperation in the Asia-Pacific (Aus-CSCAP) and the 3rd Annual National Security and Strategy Workshop (2011 Strategy Conference). The Hon Stephen Smith, Minister for Defence was a keynote speaker at both forums.

The 35th Aus-CSCAP meeting on Thursday 10 November
This was the first time that Aus-CSCAP have conducted a meeting in Perth. The meeting attracted a considerable audience of over 60 participants, including several local and interstate VIP visitors.

The 3rd Annual National Security and Strategy Workshop on Friday 11 November.

The following day, the 2011 Strategy conference proved to be the largest and so far the most successful event organised as part of the Strategic Flashlight forum on National Security and Strategy. It attracted over 100 delegates and a line of prominent speakers.

Distinguished delegates included senior managers and directors of major Australian and international enterprises, defence, intelligence and law enforcement, government, and academia.

Both events highlighted the University’s established credible, nationally-recognised reputation in the field of international and strategic studies, and the Strategic Flashlight forum’s leading role in facilitating policy level debate on matters of national and international strategic significance in WA.

ASDI External Board
Mr Keith Spence (Chair)
Keith was most recently Executive Vice President Enterprise Capability for Woodside and was responsible for ensuring the business operated with the best people, technology and processes. He was also responsible for building a skilled and technologically advanced workforce through targeted recruiting and enhanced training and played a key role in representing Woodside’s interests to the government and the public. In addition, he was responsible for Woodside’s Western Australian gas supply interests.

Mr Barry Carbon, FTSE, AM
Mr Carbon’s experience includes: Chief Executive of the Ministry for the Environment, New Zealand; Director General-Queensland Department of Environment and Heritage; Director General-Queensland Environment Protection Agency, including Parks and Wildlife; Executive Director, EPA, Commonwealth of Australia; The Supervising Scientist, Alligator Rivers Region; Chairman and Commonwealth Representative, National Environment Protection Council Committee and served on the Environment Protection Authority of Western Australia as Chairman from 1985 – 86 and as Chairman and Chief Executive from 1986-93.

Ms Michelle Andrews
Michelle Andrews has recently commenced as the Deputy Director General, Strategic Policy at the Department of Mines and Petroleum (DMP). Prior to the position she was the Executive Director of State Initiatives at the Department of State Development (DSD).

She has also contributed to the State Government’s approval process reforms, including establishing the new Office of the Environmental Protection Authority (EPA).

She has been involved in environmental approvals for major development projects, including the Gorgon project, Chevron’s Wheatstone project and the Oakajee Port and Rail project.

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