CLASSROOM ACTIVITY

Have your students seen 'The Day After Tomorrow', and are they asking you when the school will be flooded or the teachers snap frozen? Why not conduct your own climate change discussions in class? The National Geophysical Data Center in the USA has a fantastic website, **'Exploring Weather and Climate Change'**, developed as an information resource covering the fundamentals of climate change. The interactive site allows users to examine climatic information at varying timescales, from daily cycles to 100,000-year cycles and beyond. As users navigate their way over each time period, popup menus appear, offering links to (1) a Summary of that timescale, (2) Climate Science, investigating climate cycles and systems, (3) Climate History, exploring the climate events and human development of each scale, and (4) Resources, including other online sources and ideas for further enquiry. Check out the NGDC website at **www.ngdc.noaa.gov/paleo/ctl/**.

Closer to home, the **Antarctic Climate and Ecosystems Cooperative Research Centre** at the University's Hobart campus has a climate change and variability program, with international staff and students conducting ground-breaking research on the Southern Ocean's effect on climate variability in Australia and the world. To find out more about the ACE CRC, contact the Communications Manager (ace_enquiries @acecrc.org.au) or phone 6226 2265.

A small field party, deployed by Twin Otter aircraft, hand-drill a 10-metre core 400 km east of Casey Station in January 2004.
(Photo: Stuart Browning)

2005 PRIZE FOR SCIENCE/MATHS TEACHING IN SECONDARY SCHOOLS

NOMINATIONS NOW OPEN

The Australian Academy of Technological Sciences and Engineering Prize for Science/Maths Teaching in Secondary Schools recognises a Tasmanian teacher who has continually inspired students to pursue their studies.

Prize

The prize is $1000 plus a plaque that will be presented at the Science, Engineering & Technology Awards evening in late March, and sponsored by the University's Faculty of SET. In addition, the winning teacher and his/her class (or 20 students of the teacher's choice) will be invited to visit the research facilities at the University of Tasmania with all expenses met (including travel and lunch).

Eligibility

Eligibility for the prize is limited to Year 9-12 teachers in Tasmanian government and non-government schools and colleges who are teaching in the areas of mathematics or environmental, physical and/or life sciences. Entrants need to be resident in Tasmania and currently employed as science or maths teachers.

Judging and Criteria

A panel of judges, representing the areas of scientific research and education, will use the following criteria in selecting a winning entrant:

1. Demonstrated interest in science/maths outside the classroom.
2. Implements new and innovative ways to inspire students and extend their understanding of science/maths.
3. Demonstrated consistency of best practice in science/maths education.
4. Stimulates students to pursue careers in maths, science, engineering and technology.

Conditions of Entry

Contact the Faculty Office for an entry form. A single A4 page addressing the above criteria will need to be attached to the entry form. Teachers can either enter themselves or be nominated by colleagues.

A completed entry must be lodged at the Faculty Office by COB on Thursday, 16 December 2004. Entries may be sent by mail (Faculty of Science, Engineering & Technology, UTAS, Private Bag 50, Hobart, 7001), email (jeanniemarie.leroi@utas.edu.au) or fax (6226 7809). For additional enquiries, please contact Jeannie-Marie on 6226 7477.

THINK OUTSIDE THE SQUARE

Summer holidays are great…but we all know that the weather in Tasmania can play havoc and kids can run out of ideas about what to do. Here are a few suggestions and activities to keep them going (and thinking) until next year!

TAMAR RIVER CONSERVATION AREA

The Tamar Island Wetlands is a unique urban wetlands reserve just ten minutes drive from Launceston. The Interpretation Centre offers visitors the opportunity to learn about the great value of the wetlands. There are approximately 3.2 km of tracks at the wetlands, along with a bird hide and an Interpretation Centre (open 9.00 am to 5.00 pm from Oct-Mar).

www.parks.tas.gov.au/reserves/tamar/
West Tamar Hwy
Riverside
Ph: (03) 6327 3964

ROYAL TASMANIAN BOTANICAL GARDENS

The Botanical Gardens offers guided tours, education programs, community garden classes, conservation classes and is home to the Discovery Centre, which features exhibits and displays on botanical, horticultural, environmental and cultural themes. Venture into the Plant World in the most beautiful garden in Tasmania at the Botanical Discovery Centre…encouraging exploration…captivating thought…inspiring action! Each school holidays the Botanical Gardens hosts an activity program for kids.

www.rtbg.tas.gov.au/
Queens Domain
Hobart
Ph: (03) 6236 3050

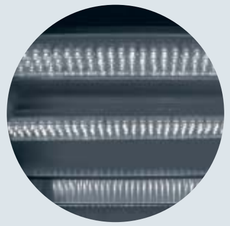
WHY EARTH SCIENCE?

Why earth science? Why on earth not? Tasmania is a natural geological laboratory and, subsequently, the School of Earth Sciences has attracted some of the world's best geologists to its teaching and research staff. The school has also produced an interactive CD 'Why Earth Science?' for teachers and students. The CD is an introduction to Earth Sciences at UTAS and includes course and scholarship information, employment opportunities, student profiles, and programs and links to earth science websites. If your students enjoy the outdoors, the thrill of discovery and are seeking a dynamic and challenging career that can take them to the far-flung reaches of the world, why not introduce them to earth science? For more information contact Lyn.Starr@utas.edu.au or phone 6226 2476.

VISIT UTAS

Do your students have an interest in botany? Have your classes undertaken their own plant growth experiments? Do you need expert resources for upcoming projects? Then visit the School of Plant Science's Controlled Environment Facility. This state-of-the-art facility is housed at the University's Hobart campus and has recently undergone a $1 million upgrade. It consists of glasshouses, growth cabinets and specialised environments where researchers study how plants respond to light, temperature, CO_2 and humidity for genetic, ecological, comparative and climate change studies. If you would like to arrange for your class to visit the Controlled Environment Facility and/or to use the facility for student projects, contact Ian.Cummings@utas.edu.au, phone 6226 2648.

The University's Controlled Environment Facility is available for schools to conduct their own plant growth experiments.



CALENDAR OF EVENTS

Cradle Coast Teachers Professional Development 29-30 Nov. A chance for teachers in the Cradle Coast area to tour local science-based industries, hear about current scientific research and talk to working scientists and discuss what they're observing with one another. Contact timothy.wilson@utas.edu.au or phone 6430 4927.

Siemens Science Experience 11-13 Jan (Hobart), 18-20 Jan (Launceston). Three fun days of hands-on science activities in university laboratories and lecture theatres for Year 9 students. In each program, students will:

- Be introduced to a range of wonders of science and technology
- Hear leaders in science, technology and engineering
- Meet new friends
- Learn about exciting careers in science, technology and engineering

Visit the Science Experience website at www.scienceexperience.com.au for an online application and further details.

Australian Timber Design Workshop 31 Jan-5 Feb, Launceston. Intensive workshop includes hands-on experimentation in designing, making and testing timber components. An ideal opportunity for professionals and the general public to learn with experts in timber design and timber engineering, exploring materials, techniques and design, and issues in sustainability. Online registration available at http://oak.arch.utas.edu.au/atdw/ or for further information email atd.workshop@arch.utas.edu.au.

Faculty of Science, Engineering & Technology
University of Tasmania
Private Bag 50
Hobart TAS 7001

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Email: scieng@utas.edu.au

Every experiment proves something. If it doesn't prove what you wanted it to prove, it proves something else.

Prof. Anon

UTAS FACULTY OF SCIENCE, ENGINEERING & TECHNOLOGY

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getSET

FACULTY OF SCIENCE, ENGINEERING & TECHNOLOGY NEWSLETTER
NUMBER THREE • NOVEMBER 2004

UTAS

GET SET FOR CHRISTMAS!

It's hard to believe that the end of the year is approaching again. And what a year it's been. The Faculty of SET has done everything from launching the first edition of *Get SET* and five new science degrees, to awarding the inaugural Science Teaching Prize and touring schools with the Science Roadshow.

In August, the faculty coordinated National Science Week activities across the State. This year's Science Week was an enormous success and thanks must go not only to the coordinators but also to the students, teachers and parents who took part in the range of activities on offer. The faculty didn't long have time to recover from the Science Week celebrations before 2005 UTAS enrolments opened. We were inundated with calls from new students about course requirements, degree structures and the application process.

This year the faculty has played host to a number of distinguished national and international visitors, including Australian of the Year Steve Waugh, world-renowned oceanographer, explorer and author Dr Sylvia Earle, founder of the infamous Ig Nobel Prizes Marc Abrahams, the Great Big Science Gig's Chris Krishna-Pillay and Darren Vogrig, and the Sleek Geeks themselves, Adam Spencer and Dr Karl Kruszelnicki. Their public lectures and shows were a huge success and proved that science has something to offer everyone.

We hope you and your students have also had an exciting year and have been able to take part in at least some of the activities mentioned above. Have a safe and enjoyable summer and we look forward to celebrating science with you in 2005.

Prof. Jim Reid

Dean
Faculty of Science,
Engineering & Technology

INSIDE

STEVE WAUGH @ UTAS

What do science, cricket and the 2004 Australian of the Year all have in common? Steve Waugh! The Faculty of SET played host to Steve when he visited UTAS in July. Five hundred eager primary and high school fans (students and staff alike) from southern Tasmania attended a forum with Steve at the University's Hobart campus. Steve happily talked with students for an hour, answering questions ranging from what it means to be Australian of the Year to what champion cricketers eat for breakfast.

Paul Archer and Elizabeth Morton from The Friends' School met with Steve Waugh when he visited UTAS in July.

NATIONAL SCIENCE WEEK REPORT

This year's **National Science Week** was our biggest and best yet. The photos on page 3 help to prove it. And Science Week is becoming very well recognised – a Newspoll survey conducted Australia-wide showed that 54% of Tasmanians surveyed were aware of Science Week. That's not bad considering we had the Olympic Games to compete with!

The SET Faculty Office was kept busy with calls from teachers with enquiries and bookings for everything from the UTAS mini-degree programs and Questacon Science Circus to 'Who Speared Britney?'. Many schools invited our Young Tassie Scientists to visit or took part in the science-art competition. The Great Big Science Gig (Burnie), Sleek Geeks (Launceston) and International Science Spectacular (Hobart) all attracted full houses.

The **Plastic Bag Famine** was a huge success across the nation, with 32,371 people taking part; 77% of those were kids. Current estimates indicate that we saved 74,447 plastic bags from entering the environment in one weekend. Congratulations to all our readers who took part in this important program.

Watch out for exciting events and activities again next year, when National Science Week takes place from 13-21 August. The schools' theme for 2005 will be *Energy: Future Challenges.* See you next year!

RESET THE RADIO DIAL

Tune in to **TAKE 2 SCIENCE** for the latest local and international science news, weekly guides, music and the occasional Sci-File. The radio program is produced by four young local scientists and broadcast every Monday from 2pm to 3pm on the UTAS radio station, Edge Radio. You can listen to Edge Radio on 99.3FM or online at www.edgeradio.org.au/. Listen out for **Young Tassie Scientist** Mike Grose, who visited schools during National Science Week. Mike is one of the show's announcers and producers.

To join the Take 2 Science mailing list for updates and alerts, or to send your comments, email scienceonedge@hotmail.com.

Gustaaf Hallegraeff (right) – Eureka Prize for Environmental Research.

2 SCIENTISTS + 1 SCIENCE TEACHER = BIG WINNERS!

Congratulations, Ms **Ann Burke**! Earlier this year Ann, a teacher at Marist Regional College in Burnie, won the faculty's Science Teaching in Secondary Schools prize. Ann's dedication and commitment to inspiring students has since led to bigger and better things; she has been awarded the Australian Museum's Eureka Prize for Science Teaching. Eureka Prizes are Australia's premier national science awards that acknowledge and reward outstanding achievements in Australian science and science communication.

Assoc. Prof. **Gustaaf Hallegraeff** (School of Plant Science, UTAS) and his team also won a Eureka Prize for Environmental Research. Fifteen years ago, Gustaaf showed that toxic algae discharged from ships' ballast water was the cause of Tasmanian shellfish farms being closed due to the presence of toxins in the shellfish that could cause human paralysis. Gustaaf worked alongside BHP shipping engineers to explore options to counter the problem, which included deep open water exchange by ships and redirecting waste heat from the ships' engines to kill toxic algae as well as other ballast water hitchhikers. As a result of the team's work, the Australian Government first introduced shipping guidelines in 1990, and this ultimately led in 2003 to the signing of an international maritime organisation convention to protect the world's oceans.

Congratulations also to Mr **Christopher Watson** for winning the inaugural Young Scientist of the Year award. Chris is a postgraduate student and recently-appointed lecturer at the University's Centre for Spatial Information Science. He was chosen from more than 90 entrants to win this prestigious national award, which is run by the British Council of Australia in conjunction with *The Australian* newspaper. Chris's communication of his research on satellite altimeter calibration in Bass Strait won him the award. The research involved, among other things, the ingenious use of satellite surveying instruments sealed within flowerpots and trawled behind a fishing boat to measure sea-level height. As part of the prize, Chris spent two weeks at *The Australian* newsroom in Sydney, gaining an insight into the communication of scientific research to the broader community. He then travelled to the UK to attend and report from the British Association's annual Festival of Science, also experiencing *The Times* and *New Scientist* offices in London.

Chris Watson – Young Scientist of the Year.

YOUNG SCIENTISTS INSPIRE

UTAS science students have been heading into the community as part of a pilot University initiative to foster interest in science and technology in young people. The **TasSTAR Peer Tutor Program**, which began this year in Launceston's Newstead College, Hobart College and Hellyer College in Burnie, matches trained, volunteer university science students with a range of science classes.

The peer tutors, from the Schools of Agriculture, Aquaculture and Computing, have been weekly guests in college science classes, helping students individually or in small groups, and joining class excursions. As well as helping in class each week, the tutors also recently organised class visits to UTAS, to give students an inside view of the three university campuses, and of their particular science at work.

Students and teachers alike have benefited from the links made between college and university and from the regular extra hand in the classroom. The tutors' first-hand experience in further studies can be an important factor in raising students' aspirations and helping them reach their goals. For the peer tutors, this program improves their self-confidence and communication skills and in some cases has promoted future teaching aspirations.

Building on the success of this pilot initiative the University is seeking funding to expand TasSTAR during 2005. For further information please contact project coordinator Anna Renkin at the Cradle Coast campus on 6430 4908 or email: Anna.Renkin@utas.edu.au
You can also visit our website: www.utas.edu.au/nwc/tasstar/

Cradle Coast tutor Lydia Turner (left) with her Hellyer biology teacher Perviz Marker.

THE IG NOBELS

Believe it or not, but there are scientists out there who study the optimal way to dunk a biscuit, the forces required to drag sheep over various surfaces and why politicians have simple personalities. You can find the answers to these questions, and much more, in the science humour magazine, **Annals of Improbable Science** (www.improbable.com). The magazine's co-founder and editor, Marc Abrahams, visited Tasmania during National Science Week and his public lecture brought the house down.

Marc is also the father and master of ceremonies of the infamous **Ig Nobel Prize**. Ig Nobels are awarded annually to honour imaginative science that first makes you laugh and then makes you think. The gala award ceremony at Harvard University in the USA is attended by genuine Nobel Prize winners and proves that scientists really do have a sense of humour. Australia's own Dr Karl Kruszelnicki has been the recipient of an honoured Ig Nobel Prize for his 2002 comprehensive survey of human bellybutton lint.

WIN the Ig Nobel Prize Book and Cinema Tickets

At this year's Ig Nobel Prize ceremony, five of the world's great thinkers were invited to give a **Nano-Lecture** – a clear summary of a given topic in exactly seven words. No more. No less. Can your students do the same?

Ask your students to write a Nano-Lecture about one of the 12 distinctive schools in the Faculty of Science, Engineering & Technology:

Agricultural Science
Aquaculture
Architecture
Chemistry
Computing
Earth Sciences
Engineering
Geography & Environmental Studies
Maths & Physics
Plant Science
Psychology
Zoology

Examples include:
Zoology – No plants or protists please. We're animals.
Earth Sciences – Animal, mineral or vegetable? The rocks rule!
Psychology – I know what you think you think.

Send entries to **scieng@utas.edu.au** with 'Nano-Lecture' in the subject line and the topic, nano-lecture and teacher/student/school contact details in the body text. The two students who submit the clearest and funniest entries will each win the Ig Nobel Prize book for their school library and two cinema tickets to take him/herself and a friend to the movies over summer.

Competition closes Friday 3 December. The winners' teachers will be notified by Friday 10 December.

Ig Nobel Master of Ceremonies Marc Abrahams (right) accompanied by his wife Robin and science journalist Robyn Williams at the UTAS Open Day in August.

Newstead College chemistry students on location with teacher John McQuestin (in middle, back row) at Launceston's Aquaculture Centre, with tutors Shafiya Naeem (3rd from right) and Cameron I'Anson (3rd from left) and lecturer Dr John Purser (2nd from left).