



WEEKLY "E" NEWS- from the RACI NSW 11th April 2008

Dear NSW RACI readers

Below are this week's announcements from the RACI NSW Branch, a summary is given and then scroll down for the full text.

Advances in Heterocyclic Chemistry and Medicinal Chemistry: One-Day Halpern Symposium in Honour of Prof. John Bremner University of Wollongong Thursday 10th July 2008

RACI Pharmaceutical Science Group – NSW NIR INDUSTRY UPDATE May 14th 2008

North Ryde RSL - Magdala Rd North Ryde

Position for a Postdoctoral fellow at UWS Position Title: Postdoctoral Fellow in NMR/MRI (Academic Level A) School/Office: Nanoscale Organisation and Dynamics Group, School of Biomedical and Health Sciences College/Division: College of Health and Science

Position for a Technical Manager at UWS University of Western Sydney, Campbelltown Campus School of Biomedical and Health Sciences Level: HEW Level 9 Remuneration Package: \$95,270 to \$101,739 p.a.

UWS Careers & Cooperative Education is now accepting Placement Requests for Winter Vacation Projects. This is a great opportunity to resource a project which has been 'put on the backburner' whilst assisting in the career development of a UWS student or recent graduate.

CSIRO Student Research Scheme and Teacher Research Scheme: Tomorrow's Scientists Need Your Help Today!

Activities for the upcoming school holidays: Whether you like it or not school holidays are fast approaching – short of activities that will excite your children?

UNSW Climate-Talk Free public seminar series: 6.45pm for 7pm start, Wednesday 23rd April, 08 Science

*Deadline for next weeks edition is 5pm **Thurs 17th April**. We welcome all article suggestions and ideas*

Theatre, UNSW

Amended hours for the RACI NSW Office

Nominations are now open for Fresh Science 2008: Fresh Science 2008 would be grateful if you could help identify the best under-publicised research produced in the past year or so by early-career scientists.

THE EUREKA PRIZES 2008 ARE OPEN – There are prizes for scientists, school kids, journalists, science teachers, young film makers, researchers, science leaders, innovators, educators, communicators, environmentalists and photographers.

THE PRIME MINISTER'S PRIZES FOR SCIENCE NOMINATIONS The call for nominations for the 2008 Prime Minister's Prizes for Science close on **Friday 9 May 2008** 5.00pm AEST. Eligibility criteria and selection information is available on <http://www.dest.gov.au/scienceprize>

Nominations for awards administered through The RACI National Office are now open. Full details are found at <http://www.raci.org.au/national/awards/index.html>. Each week this E-News will feature one of these prizes. This week a profile of **The Green Chemistry Challenge Awards** is provided.

Important Dates in Chemistry's History April 11-17 New Section of the Newsletter

Crystal Competition 2008. Attention all teachers, parents, and students Do you want to have fun with Science? Would you like to do some simple chemistry experiments with your students? Then enter the NSW Crystal Growing Competition 2008 and learn all about growing beautiful crystals. For more info see our website: http://www.chem.unsw.edu.au/RACI/crystal_grow/crystal2008.html

Website of the Week: This week we look at the **Chromatogram Database**

See: <http://www.discoverysciences.com/chromdb/default.aspx>

Do you have story idea or suggestion for the Weekly E News? Please let us know! If any of our RACI members receive awards, we would love to hear about it. Stories about our RACI events are always welcome. If you have found a chemistry book or text particularly helpful -why not submit a review?

Please scroll down for further details.....

*Deadline for next weeks edition is 5pm **Thurs 17th April**. We welcome all article suggestions and ideas*

ADVANCES IN HETEROCYCLIC CHEMISTRY AND MEDICINAL CHEMISTRY



**ONE-DAY HALPERN SYMPOSIUM IN HONOUR OF PROF. JOHN BREMNER
UNIVERSITY OF WOLLONGONG
THURSDAY 10TH JULY 2008
MCKINNON BUILDING, 67.104
8.30 A.M. REGISTRATION – 9.00 A.M. START**

Prof. John Bremner has recently retired from his academic position at the University of Wollongong. To celebrate his outstanding career as a researcher and teacher the School of Chemistry is organizing a one-day symposium on Thursday, 10th July 2008. The theme of the symposium will be on heterocyclic and medicinal chemistry, the two topics of John's major research interests.

The following eminent researchers have accepted invitations to speak.

Dr Jonathan Baell (The Walter and Eliza Hall Institute of Medical Research)

Prof. Martin Banwell (Australian National University)

Prof. David Black (University of NSW)

Prof. Bill Denny (University of Auckland)

Prof. Tim Gallagher (University of Bristol)

Dr Kevin Winzenberg (CSIRO Molecular and Health Technologies)

Prof. Brian Yates (University of Tasmania)

After the conclusion of the one-day symposium activities John Bremner will be presenting the Halpern Lecture at 6.00 pm followed by dinner at a local restaurant. The members of the organizing committee would like to invite you and your colleagues and research students to participate in this exciting day of science, to celebrate with John his long and distinguished research career and his contributions to Chemistry, nationally and internationally.

Please e-mail or fax your registration details (see below) to Louisa Willdin at louisa@uow.edu.au [fax (02) 4221 4287] before 10th May 2008.

If you need to book your accommodation, you may find this website useful.

www.tourismwollongong.com.au

Name:

Affiliation:

e-mail:

I will attend:

1. One -Day Symposium in Honour of Prof. John Bremner

Staff, \$55

Student, free

2. The Halpern Lecture (free lecture)

3. Dinner at a local restaurant (cost not included in registration fees)

Payment: Cheque Bankcard MasterCard Visa

Cardholder name:

Card Number:

Expiry Date:

Signature of cardholder:

Cheques should be made payable to The School of Chemistry, University of Wollongong. Please e-mail or fax your registration details to Louisa Willdin at louisa@uow.edu.au [fax (02) 4221 4287] before 10th May 2008.

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RACI Pharmaceutical Science Group - NSW

NIR INDUSTRY UPDATE

Wednesday May 14, 2008
North Ryde RSL - Magdala Rd North Ryde

NIR is currently used in a range of industries providing enormous time and cost saving benefits for each company. The Pharmaceutical industry in Australia is slowly implementing NIR as process analytical technology (PAT) and achieving similar benefits.

But why are there only a hand full of companies, at this stage, progressing and enjoying the benefits?

Is it the complexity and the unknown of Near Infrared Spectroscopy?

Is it a lack of knowledge, resources or funding?

The benefits of implementing and utilising NIR to its full capacity will be discussed in this seminar and would be of interest to Manufacturing, R&D, Regulatory, Validation and Quality Assurance

PROGRAM

- | | |
|--------------|--|
| 12.30 - 1.15 | Registration |
| 1.15 – 1.30 | Introduction |
| 1.30 – 2.15 | NIR Spectroscopy Applied to the Pharmaceutical Industry
NIR Instrumentation Overview
Phil Clancy -NIR Technology Systems |
| 2.15 – 2.45 | Regulatory Acceptance of NIR Applications in the Pharmaceutical Industry
Richard Streamer Industrial Applications Manager- FOSS Pacific |
| 2.45 – 3.15 | TGA's Approach to NIR as a Test Method for Raw Materials and Finished Products.
Dr Larry Kelly - Director TGA Laboratories |
| 3.15 – 3.45 | Afternoon Tea |
| 3.45 – 4:15 | An Overview of PAT from a Regulator's Perspective
TGA-speaker to be advised |
| 4.15 – 4.45 | NIR Case Study
Thilini Anandagoda-Pfizer Australia |
| 4.45 – 5.15 | NIR Applications in the Food and Agricultural Industries
Dr Ian Wesley and Professor Brian Osborne - BRI Research PL |
| 5.30 | Questions / Discussion |
| 5:45 | Drinks and dinner |

Registration: see next page

RACI Pharmaceutical Science Group – NSW

NIR INDUSTRY UPDATE May 14th 2008

North Ryde RSL - Magdala Rd North Ryde

**Enquiries for Payment/Registrations Edwina Hine: 02 9663 4960 Fax: 02 9385 6141. Or
racinsw@chem.unsw.edu.au**

For further information regarding the seminar, please contact Colleen Wood at c.wood@inovapharma.com

GST Inclusive **\$110.00** RACI Members
GST Inclusive **\$145.00** Non RACI Members
Cost includes both Seminar and Dinner

Payment Options – Cheques are preferred, Registrations close 7 May 2008

TAX Invoice/Receipt ABN: 69 030 287 244

Title	Print First Name	Print Surname	RACI Member No.	Print Organisation ----- Print E-mail Address & Phone Number

Cheque Bankcard MasterCard Visa AMX

Cardholder Name: _____

Card Number: _____

Expiry Date: ____/____/____ Signature of cardholder: _____

Or

Please forward your cheque in Australian Dollars payable to **RACI**, along with this completed form to RACI (NSW), School of Chemistry UNSW Sydney 2052.

*Deadline for next weeks edition is 5pm **Thurs 17th April**. We welcome all article suggestions and ideas*

Position for a Postdoctoral fellow at UWS



POSITION DETAILS:

Position Title: Postdoctoral Fellow in NMR/MRI (Academic Level A)

School/Office: Nanoscale Organisation and Dynamics Group, School of Biomedical and Health Sciences

College/Division: College of Health and Science

CONTEXT:

The Nanoscale Organisation and Dynamics Research Group (<http://www.uws.edu.au/research/nano>) was founded in 2004 within the College of Health and Science. It is a multidisciplinary research group with the ultimate aim of establishing UWS as an internationally recognised research centre for molecular association, organisation and dynamics with an emphasis on nanobiotechnical applications (e.g., protein association, drug binding, nanofluidics).

The group, which is led by Professor William S. Price, comprises ten members with a diverse array of talents ranging from Nuclear Magnetic Resonance (NMR) to Drug Design and Quantum Mechanics. The research objectives of the group are to develop novel experimental (especially NMR-based) techniques and theoretical models for studying molecular association, organisation and dynamics, and to obtain a comprehensive understanding of the effects of the environment (e.g., crowding effects, ionic strength, counter ions, electrostatic interactions, pH, hydration and chaperones) on association phenomena in solution so that the behaviour can ultimately be predicted and controlled. Some examples of research projects to be undertaken by the group include: (i) The development of 'cutting edge' techniques for characterizing protein self-association and drug binding. (ii) The development of a molecular-level understanding of ionic conductance in polymer and gel electrolytes - the gateway to high performance batteries and, (iii) the development of sophisticated NMR and modelling techniques for probing porous systems.

In addition to standard laboratory facilities, the Group has access to the Biomedical Magnetic Resonance Facility, which is one of UWS's premier research facilities, for conducting very high resolution MRI (aka NMR microscopy) and NMR diffusion measurements. The available research infrastructure is of world class and includes:

- Bruker AV500 wide bore NMR spectrometer with almost every conceivable option for high resolution MRI and diffusion.
- Bruker AV400 NMR spectrometer
- Terranova Earth's Field NMR spectrometer
- Atomic Force Microscope (AFM)
- Scanning Probe Microscope (SPM)
- SGI high performance computing workstation

PURPOSE/MAJOR RESPONSIBILITIES:

The successful applicant for this position will report to Professor William S. Price and will work within the Nanoscale Organisation and Dynamics Group investigating biomolecular association using NMR/MRI-based approaches. The position is funded by a NSW State Government BioFirst Award ('Molecular level mediation: learning nature's tricks for conducting nanobiotechnology') awarded to Professor Price.

KEY FUNCTIONS/RESPONSIBILITIES/DUTIES:

The responsibilities of the Postdoctoral Fellow include:

- Design and carry out experiments in collaboration with Professor William S. Price, and collaborate with other members of the Group where appropriate.
- Attendance at meetings associated with research or the work of the organisational unit to which the research is connected.

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- Prepare and present conference papers at national and international conferences highlighting this research.
- Contribute to the Group by actively collaborating with industry and sectoral partners on contract research and related intellectual property development, including commercialization activity as appropriate.
- Participate in postgraduate research supervision where required.
- Contribute to the school's teaching programs as required.
- Develop new NMR/MRI methods, especially those involving diffusion, for studying molecular association data.
- Develop cogent mathematical models for analysing NMR molecular association data.
- Analyse data using appropriate software packages and mathematical models.
- Prepare and publish manuscripts in high impact refereed journals detailing the theoretical and experimental developments.
- Participate in preparing applications for research funding, particularly for major external research grants such as those funded by the Australian Research Council and other Australian Competitive Grants as well as industry and other public sector funding.
- Promote compliance with Social Justice and Occupational Health and Safety Policies and legislative requirements in all aspects of work.
- Participate in the cyclical performance management planning and review process and meet agreed operational objectives set for the performance period.

SELECTION CRITERIA:

- PhD in Biophysics, Chemistry, Nanotechnology or related discipline.
- Demonstrated capacity to work independently within a clearly defined program of research.
- Demonstrated organisational skills and the ability to be self-directed.
- Excellent oral and written communication skills, including interpersonal skills and the ability to work effectively in a team
- Knowledge and experience in the general operation of NMR spectrometers.
- Experience in writing and testing NMR/MRI pulse programs.
- Experience in NMR diffusion measurements and/or MRI techniques.
- Capacity and enthusiasm to use analytical/mathematical skills to solve complex problems and model experimental data.
- Skills in using software packages to analyse and interpret data.
- Demonstrated ability to write and publish scientific papers in international refereed journals.
- Experience in applying for research funding.
- Demonstrated capacity to contribute to the supervision of research students.
- Understanding of commercialisation issues, as they relate to collaborative research with industry sectoral partner.
- A demonstrated understanding of the principles of equal opportunity, equity and occupational health and safety and the willingness and capacity to implement equal opportunity, equity and occupational health and safety plans and programs.

To apply or for further information see:

http://pubapps.uws.edu.au/vacancies/index.php?pro=position_details&pos_ID=4882

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Position for a Technical Manager at UWS

University of Western Sydney, Campbelltown Campus School of Biomedical and Health Sciences

Level: HEW Level 9

Remuneration Package: \$95,270 to \$101,739 p.a.

Position Summary:

Remuneration Package: HEW 9 \$95,270 to \$101,739 p.a.

(comprising Salary \$80,504 to \$85,971 p.a., 17% Superannuation and Leave Loading)

The School of Biomedical and Health Sciences is seeking to appoint a Technical Manager. The appointee will be dynamic, innovative, and enthusiastic, and willing to share in the future of the University of Western Sydney. The Technical Manager will be responsible for the overall management, coordination, and delivery of technical support service and resources across laboratory-based science disciplines and clinical health science disciplines. The appointee will have relevant tertiary qualifications and managerial experience, and extensive leadership experience and knowledge of technical support service delivery in a higher education or similarly complex environment.

Closing Date: 9 May 2008.

Please visit the UWS Website: <http://www.uws.edu.au/vacancies/> for full details on this position and how to apply.

Enquiries: Professor Gregory Kolt (02) 4620 3747 - email: g.kolt@uws.edu.au



Dear Employer

Do you need an extra resource over winter?

UWS Careers & Cooperative Education is now accepting Placement Requests for Winter Vacation Projects. This is a great opportunity to resource a project which has been 'put on the backburner' whilst assisting in the career development of a UWS student or recent graduate.

Placement Programs

UWS' flagship placement programs have been linking organisations in Greater Western Sydney and beyond with high achieving students for over 10 years.

Range of programs:

Program	Description	Cost
Graduate Internship	Recent Graduates work for 12 weeks and may be retained for full time employment at the end of their internship.	\$9,000 + GST*
Industry Internship	Students who have completed at least 2 years of their course study part time or defer university for one semester to work full time for 24 weeks.	\$18,000 + GST*
Research Internship	Final year, postgraduate or Honours students work for 12 weeks during semester, under academic supervision.	\$8,000 + GST*
Summer Vacation Projects	Students work for 5 weeks during the university Summer vacation.	\$3,000 + GST*
Winter Vacation Projects	Students work for 4 weeks during the university Winter vacation.	\$2,400 + GST*
Engineering Summer Placement	Engineering students work for 12 weeks during the university Summer vacation.	\$7,200 + GST*

* Your organisation may be eligible for a research and development tax concession – please seek advice from your Accountant. Prices are current as at 1 January 2008, and are subject to change without notice.

Benefits to employers:

- Projects start at \$2,400 (plus GST)
- Possible research and development tax concession
- We handle the advertising and recruitment
- No payroll hassles – students are employed casually through UWS and employers are invoiced directly
- Insurance is provided
- Time saving and cost effective
- Fresh and innovative approach
- Opportunity to trial students or graduates for casual, part time and full time roles
- Students receive training in Project Management & Business Communication, and Report Writing
- Students work individually or as part of a project team
- Programs are flexible and can be tailored to suit your needs
- Careers & Cooperative Education staff monitor all placements

Contact us

If you would like to host a Winter Vacation Project or other placement, please complete the Placement Request Form and email it to careers@uws.edu.au. For more information on our other programs and services for employers, please contact (freecall) 1800 897 297, email careers@uws.edu.au or visit www.uws.edu.au/careers

Please note: the Placement Request Form has been posted on the RACI website [http://www.chem.unsw.edu.au/RACI/files/PlacementRequestForm\[1\].doc](http://www.chem.unsw.edu.au/RACI/files/PlacementRequestForm[1].doc)

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Tomorrow's Scientists Need Your Help Today!

Student Research Scheme (SRS)



Senior secondary students are offered the rare opportunity to experience real-world scientific research. Under the guidance of a research scientist they learn about the day-to-day life of a scientist and their field of research. Students also undertake laboratory or field activities related to the research being done by their supervising scientist. Students spend a minimum of 20 hours over the course of a fortnight (during the July and October school holidays) working with scientists, postgraduate students and research assistants. Across Australia, the Student Research Scheme annually selects 500 students for this invaluable experience. If you are interested in hosting a student please contact CSIRO Education (details below).

“75% of Nobel Prize winners in the sciences report that their passion for science was first sparked in non-school environments”

Friedman and Quinn, Education Week February 2006

Teacher Research Scheme (TRS)

Complementing the Student Research Scheme, this program gives secondary science teachers first-hand engagement with contemporary scientific research. Teachers gain a greater understanding of the scientific process and its practical applications as they undertake laboratory activities related to the research being done by their mentor scientist. Each year over 20 teachers return to their classrooms to share this motivating and inspiring experience.

Proudly supported by:

“It definitely led me to seriously consider a scientific pathway, as now I know it’s a satisfying and stimulating career choice.” **SRS student**

“Absolutely fabulous experience! Thank you so much for giving me the opportunity.” **SRS student**

“A once-in-a-lifetime opportunity to gain first-hand knowledge of a subject I love and love to teach.” **TRS Teacher**

“SRS was a satisfying experience .greatly appreciated by my student and the other students who were given a glimpse into the world of ‘a real lab’.” **SRS Researcher**

Fast Facts

- Allows students and teachers to experience scientific research
- Involves 500 SRS students, 20 TRS teachers and 100 organisations annually
- Contact Rachel Rothwell, Project Coordinator, CSIRO Student Research Scheme, NSW

E: srs.nsw@csiro.au

T: 02 9490 8428

F: 02 9490 8648

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Activities for the Upcoming School Holidays

Whether you like it or not school holidays are fast approaching – short of activities that will excite your children? Over the next few weeks the newsletter will provide some ideas.

Why not take a visit the Powerhouse Museum?



Located :500 Harris Street Ultimo, Sydney NSW

The Powerhouse Museum, Australia's largest and most popular museum, is located in Darling Harbour, Sydney. Its unique and diverse collection of 385,000 objects spans history, science, technology, design, industry, decorative arts, music, transport and space exploration.

April School Holiday Program 1-28 April: A month of colour

For more information see <http://www.powerhousemuseum.com/>

Alternatively we can suggest the Royal Botanical Gardens



Located: Mrs Macquaries Road, Sydney, NSW

The Royal Botanic Gardens is a place of natural beauty, where people come for peace, relaxation, education, and to learn more about plants and horticulture. The surrounding parkland of the Domain is a place for sport, entertainment and recreation. The National Herbarium of NSW — Centre for Plant Conservation & Research — is located within the Royal Botanic Gardens.

There School holiday program: Spudz4Kidz

Is a kids holiday activity program all about the humble potato — plant, harvest, sculpt mashed potato and join in potato games to celebrate the United Nations Year of the Potato.

When: Mon 14 – Thurs 24 April, 10.30 am–12 pm & 1 pm–2.30 pm daily (Mon – Fri only)

Where: Education Centre

Cost: \$11 per child

Bookings: 9231 8134

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UNSW Climate-Talk
Free public seminar series

6.45pm for 7pm start,
Wednesday 23rd April, 08
Science Theatre, UNSW

Arrive early to avoid disappointment

Speaker: *Michael Molitor*
Senior Advisor on Carbon Management,
Climate Change Services,
PricewaterhouseCoopers (Australia)
Adjunct Professor, Climate Change Research Centre, UNSW

For further information visit www.ccrc.unsw.edu.au Email: ccrc@unsw.edu.au

Ph: 02 9385 9766

Amended hours for the RACI NSW Office

Now the coordinator has settled well into her position – we have had a chance to see when best the office remains open. It appears many people try to contact the office on Tuesdays – (currently the office opens every day except Tuesdays). Therefore please note the amended operation hours.

Mon-Wed: 9.30am-6pm

Thursdays the office is closed

Fridays: 1.30pm-6pm

*Deadline for next weeks edition is 5pm **Thurs 17th April**. We welcome all article suggestions and ideas*



Nominations are now open for Fresh Science 2008.

Fresh Science 2008 would be grateful if you could help identify the best under-publicised research produced in the past year or so by early-career scientists.

This year Fresh Science will be held in June in Melbourne. The event serves as a communications boot camp for early career researchers – getting their stories out to local, national and international media, and giving them essential communication skills.

We will select 16 early-career researchers and bring them to Melbourne where they will receive media training and then present their work to the media, schools and the public.

Now in its 11th year, the Federal and Victorian governments, New Scientist and Museum Victoria, support Fresh Science.

In essence we're looking for

- Early career researchers with an upper limit of five years post-doc and no lower limit
- - With a peer-reviewed result which has had no media coverage
- - With some ability to present their ideas in plain English.

Nominations close on 1 May 2008.

Please circulate this information on to anyone who you think would fit our criteria.

For more Information: <http://www.scienceinpublic.com/sciencenow/>

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THE EUREKA PRIZES 2008 ARE OPEN – AND THERE'S SOMETHING FOR EVERYONE

There are prizes for scientists, school kids, journalists, science teachers, young filmmakers, researchers, science leaders, innovators, educators, communicators, environmentalists and photographers.

2008 is another big year for the Australian Museum Eureka Prizes, with 20 prizes on offer worth over \$200,000.

IT WOULD BE GREAT TO HAVE NSW RACI MEMBERS COMPETE FOR SOME OF THESE PRIZES.

FOR MORE INFO: <http://www.amonline.net.au/eureka/go/enter>

THE PRIME MINISTER'S PRIZES FOR SCIENCE NOMINATIONS

The call for nominations for the 2008 Prime Minister's Prizes for Science close on **Friday 9 May 2008** 5.00pm AEST. Eligibility criteria and selection information is available on <http://www.dest.gov.au/scienceprize>

The major Prize, the Prime Minister's Prize for Science, is one of the nation's most highly-regarded awards and the premier national award for scientific achievement. It is awarded for an outstanding specific achievement or series of related achievements in any area of science advancing human welfare or benefiting society, and has been awarded previously to such luminaries of Australian science as Frank Fenner, Donald Metcalf, Jacques Miller and Graeme Clark.

The Prime Minister's Prizes for Excellence in Science Teaching in Primary and Secondary Schools were introduced in 2002, to honour our inspirational science teachers. Many of today's most prominent Australian scientists have credited their teachers with generating the interest and enthusiasm for science that they have carried with them throughout their subsequent careers.

Events coming up this week

- **Peter Rutledge will be doing the "wet run" of the Nyholm youth lecture at University of Sydney, School of Chemistry, Chemistry LT4 for next Monday April 14, 5:30 - 7:00 pm.**

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Nominations for awards administered through The RACI National Office are now open.

Full details are found at <http://www.raci.org.au/national/awards/index.html>

Each week this E-News will feature a profile of one of these prizes.

This week's a profile... **The Green Chemistry Challenge Awards**

The Green Chemistry Challenge Awards are to recognise and promote fundamental and innovative chemical methods that accomplish pollution prevention through source reduction and that have broad applicability in industry, and to recognise contributions to education in Green Chemistry. Green chemistry is relevant to all Divisions of the Institute and the Awards are non-Divisional based.

Green Chemistry involves a reduction in or elimination of the use or generation of hazardous materials, including feedstock, reagents, solvents, products, and by-products, from a chemical process. Green chemistry encompasses all aspects and types of chemical processes, including synthesis, catalysis, analysis, monitoring, separations and reaction conditions, that reduce impacts on human health and the environment relative to the current state of the art.

The evaluation of the new technology's impact will include considerations of the health and environmental effects throughout the technology's lifecycle with recognition of the necessity for incremental improvements.

The Green Chemistry Challenge Awards are open to all individuals, groups and organisations, both non-profit and for profit, including academia, government, and industry. The nominated green chemistry technology must have reached a significant milestone within the past 5 years in Australia (e.g. been researched, demonstrated, implemented, applied, patented, etc.).

Scope Focus Areas

Nominated Green Chemistry technologies should be an example of one or more of the following three focus areas:

1. The use of alternative synthetic pathways for Green Chemistry, such as:
 - *Catalysis/biocatalysis.
 - *Natural processes, such as photochemical and biomimetic processes.
 - * Alternative feedstocks that are more innocuous and renewable (e.g. biomass).
2. The use of alternative reaction conditions for Green Chemistry, such as:
 - * Use of solvents that have a reduced impact on human health and the environment.
 - * Increased selectivity and reduced wastes and emissions.
3. The design of alternative chemicals that are, for example,
 - *Less toxic than current alternatives.
 - *Inherently safer with regard to accident potential.

Selection Criteria

Judgement of Green Chemistry technologies nominated for an award will be based on whether they meet the following criteria (where applicable):

1. The nominated chemistry technology must fall within the scope of the program and at least one of the focus areas.

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2. The nominated chemistry technology should offer human health and/or environmental benefits.

The technology might, for example:

- *Reduce toxicity (acute or chronic), illness or injury, flammability, explosion potential, emissions or other releases, transport of hazardous substances, or use of hazardous substances in reaction processes.

- *Improve usage of natural resources, such as renewable feedstocks.

- *Enhance biodiversity.

3. The nominated chemistry technology should be generally applicable to a large and broad-based segment of chemical manufacturers, users, or society at large. The nominated technology should offer at least the following:

- *A realistic approach to green chemistry.

- *A remedy to a real environmental management problem. Features that can be transferred readily to other facilities, locations, and industry sectors.

- *The nominated chemistry technology should be innovative and of scientific merit. The technology should be, for example:

- Original (i.e. never employed before).

- Scientifically valid. That is, can the nominated technology or strategy stand up to scientific scrutiny through peer review? Has the mechanism of action been thoroughly elucidated through sound scientific research?

The judging panel will look for as much detail (non-proprietary) as possible about the nominated technology. Specifics of the chemistry, including comparisons to an existing technology, toxicity data, quantities of hazardous substances being reduced or eliminated, degree of implementation in commerce, and other technical, human health, environmental, and economic benefits, will both assist the judging panel in evaluating a nomination and enhance the prospects of a nomination.

An award on the basis of contribution to Green Chemistry education will be evaluated on the basis of innovation, impact, community involvement, etc.

Award Categories

Several awards will be made. Awards may be made in the following:

- *Projects from any of the small business sector in any of the scope focus areas.*

- *An academic or government institution for a project in any of the scope focus areas.

- *Green Chemistry education.

Nominations

Self-nominations are allowed and expected. Nominations (4 copies) must be submitted on a typed, single-spaced report that is no longer than eight pages. Submissions longer than eight pages in total will not be accepted.

Judging Entries

A panel of technical experts selected by the Royal Australian Chemical Institute will judge the entries. These experts might include members of the scientific, industrial, governmental, educational and environmental communities.

To assure fairness, judges will compare entries only with others in the same award category. Judges may request verification of any chemistry described or claims made in entries that are selected as finalists. The judges will select the chemistry projects/contributions that best meet the selection criteria as award recipients.

Notification of Winners

Winners will be notified prior to the official public announcement, which will be made after the July Board Meeting. An award will be presented to the primary sponsor of the winning Green Chemistry project in each of the three award categories. Certificates will be presented to individuals (as identified by the primary sponsor) who contributed to the research, development, or implementation of the chemistry, or activities in education.

- *A small business is defined here as one with annual sales of less than \$10 million including all domestic and foreign sales by the company, its subsidiaries, and its parent company.

Please see the Website regarding this award as much more information about your nomination can be found there: <http://www.raci.org.au/national/awards/greenchemistry.html>

Important Dates in Chemistry's History April 11-17

11

b. 1804 Otto Erdmann, professor of chemical technology, U. Leipzig; redetermined atomic weights of elements with R. F. Marchand.

b. 1899 Percy L. Julian cosynthesized physostigmine, 1935; founded Julian Laboratories, 1953; prepared intermediates for commercial production of steroid hormones; first black chemist member of National Academy of Sciences.

b. 1938 Reatha Clark King, professor of chemistry and administrator.

➤ Humphry Davy discovered nitrous oxide, laughing gas, 1799.

➤ Robert B. Woodward & W. von Eggers Doering synthesized quinine, 1944.

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b. 1773 Thomas Thompson, invented the instrument known as **Allan's saccharometer**; identified a zeolite mineral named **thomsonite**; promoted Dalton's atomic theory & Prout's hypothesis in his journal *Annals of Philosophy* and his book *System of Chemistry*.

b. 1872 Georges Urbain codiscovered lutetium (Lu, 71), 1907, with K. Auer von Welsbach; discovered the law of optimum phosphorescence of binary systems; researcher in isomorphism; chemical-composer.

b. 1884 Otto F. Meyerhof, researcher on muscle metabolism; shared Nobel Prize in Medicine (1922) for his discovery of the fixed relationship between the consumption of oxygen and the metabolism of lactic acid in the muscle with Archibald Vivian Hill for his discovery relating to the production of heat in the muscle.

13

b. 1760 Thomas Beddoes, studied medical treatment of disease by the therapeutic inhalation of different "factitious airs" or gases and vapors; established Pneumatic Institution for Inhalation Gas Therapy, 1798.

➤ Tobern Bergman confirmed Müller von Reichenstein's results that the substance isolated from a bismuth ore was a new element tellurium (Te, 52), 1784.

➤ The paper on the discovery of crown ethers and their complexes, "Cyclic polyethers and their complexes with metal salts" by C. P. Pedersen was received on this day, 1967; Published in *J. Am. Chem. Soc.*, **1967**, 89, 7017.

14

b. 1927 Alan MacDiarmid, researcher on the synthesis of conductive polymers; **Nobel Prize** in Chemistry (2000) with Alan J. Heeger and Hideki Shirakawa for the discovery and development of conductive polymers.

➤ NASA's Nimbus III weather satellite made first civilian use of nuclear batteries, 1969.

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b. 1710 William Cullen, first to notice that heat is produced during compression of a gas.

b. 1896 Nikolai N. Semenov, researcher in chemical kinetics; **Nobel Prize** in Chemistry (1956) with Cyril N. Hinshelwood for their researches into the mechanism of chemical reactions.

➤ Ernest Solvay received his first patent entitled "Industrial Production of Sodium Carbonate by Means of Marine Salt, Ammonia, & Carbon Dioxide", 1861.

➤ Albert Ghiorso announced the discovery of rutherfordium (Rf, 104) by Ghiorso, et al., at University of California, Berkeley, 1969.

16

b. 1728 Joseph Black developed concept of latent heat & laid foundation for modern quantitative analysis.

b. 1838 Ernest Solvay, developed Solvay process for making commercial soda cheaply.

b. 1850 Sidney G. Thomas solved the problem of separating phosphorus from iron in the Bessemer Converter.

b. 1921 Marie M. Daly, first black woman to earn a PhD in chemistry, 1948 (Columbia University).

➤ Albert Hofmann accidentally discovered the hallucinogenic effects of lysergic acid diethylamide (LSD), 1943.

➤ Humphry Davy performed first physiological experiment on nitrous oxide by inhaling it, 1799.

17

b. 1869 Robert Robertson, researcher in explosives including amato and tetryl (trinitrophenylmethylnitramine).

b. Georges J.F. Kohler, codiscovered techniques for producing monoclonal antibodies; Nobel Prize in Medicine (1984) with **Niels K. Jerne** and **Cesar Milstein** for theories concerning the specificity in development and control of the immune system and the discovery of the principle for production of monoclonal antibodies.

Ref: Monthly Historical Events In Chemistry by Leopold May, The Catholic University of America

<http://faculty.cua.edu/may/Chemistrycalendar.htm>

Deadline for next weeks edition is 5pm **Thurs 17th April**. We welcome all article suggestions and ideas

Crystal Competition 2008



Attention all teachers, parents, and students

Do you want to have fun with Science? Would you like to do some simple chemistry experiments with your students? Then enter the NSW Crystal Growing Competition 2008 and learn all about growing beautiful crystals.

The competition is aimed at Primary and Junior Secondary school students with 3 'closed' divisions: K-Year 3, Years 4-6 and Years 7-8. Also there is an Open Division for students from K-10 in which entrants may grow any crystal of their choice.

Is your school involved??

Home Schooled Children in NSW are welcome – if you know of any families that do home school, why not recommend this exciting and educational event?

For more info see our website:

http://www.chem.unsw.edu.au/RACI/crystal_grow/crystal2008.html

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Website of the Week

This is a new section of the newsletter where we will review a useful or interesting website that one of our members will have recommended. *(Opinions expressed in this article are not those of the RACI as a whole, rather the author of the article)*

This week we look at

Chromatogram Database

See: <http://www.discoverysciences.com/chromdb/default.aspx>

The Grace Division Discovery Sciences website has a useful chromatogram database. It can be utilised to help solve your separation challenges.

Dr Joseph Bevitt (*NSW Chair of Young Chemists*)

Do you have any story ideas and breaking news?

Please let us know! If any of our RACI members receive awards, we would love to hear about it. Stories about our RACI events are always welcome. If you have found a chemistry book or text particularly helpful - why not submit a review? Why not recommend a website?

You can also support RACI (NSW Branch) by placing an advertisement. (Please note these do incur a small fee). Our E news reaches over a thousand members.

The deadline for the next issue appears at the bottom of each page. Contact racinsw@chem.unsw.edu.au for further details.



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