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.

**R&D Topics Conference 2008** Macquarie University successfully hosted the 16th R&D Topics last weekend.

**NSW RACI Members perform well at the recent 30th APS conference in Melbourne:** The NSW branch was pleased to hear our member’s outstanding work in presenting at the recent APS conference. (see pg 4 for full details)

**Website of the Week:** This week we look at Chemistry Christmas carols [http://www.greece.k12.ny.us/oly/chemistry/chemistry%20carols.htm](http://www.greece.k12.ny.us/oly/chemistry/chemistry%20carols.htm)

**UTS SCIENCE PROFESSIONAL DEVELOPMENT** Contaminated Site Assessment, Remediation and Management: A Series of Short Courses for Environmental Professionals (see pg 5/6 for full details)

**The 2009 Honours prize (RACI Western Sydney Section)** will be awarded for the best Honours thesis produced in 2008 by a student who is resident and/or has studied or undertaken research in western Sydney throughout the year. The RACI Western Sydney Section Honours Prize is now open. Full details see page 7 Details have been updated

**Missed an edition of our weekly E-News?** We now have an archive of old editions! Please see [http://www.chem.unsw.edu.au/RACI/News.html](http://www.chem.unsw.edu.au/RACI/News.html)

**Its here!!! The New 2008/2009 Entertainment Book has arrived:** This book has been an important fundraiser for our branch the last few years. Purchase your brand new 2008/2009 Entertainment™ Book now

**Important Dates in Chemistry’s History Dec 12 -18 A celebration of Faradays Laws, Blood Fractionation and Co-ordination Chemistry!**

Please scroll down for further details....
Macquarie University successfully hosted the 16th R&D Topics last weekend. Approximately 90 students from all across Australia descended upon the Macquarie University to hear about each other’s work and celebrate each other’s achievements. The Conference was opened by Maxine McKew (the local federal members of parliament and Secretary to the PM)

The Conference also provided an opportunity for chair of the Analytical Division, Professor Neil Barnett to present the RACI Lloyd Smythe medal for contributions to Analytical Chemistry for 2008 to Professor Roland De Marco who area of research is Surface chemistry and electrochemistry applied to power sources, chemical sensors, biosensors, novel electrochemical materials and corrosion studies.
Students spoke on a vast array of research areas. New RACI member Amanda Van Gramberg (University of Technology, Sydney) spoke on *Optimisation of the separation of amines and amino acids by capillary electrophoresis and lab-on-a-chip technology using artificial neural networks: application on lab-on-a-chip to the “in-field” detection of amphetamine and related compounds* (who incidentally won an award for the presentation with the longest title!!!!). Ellaine Munton (another new member) gave a terrific presentation on *Measurement uncertainty and metrological traceability of carbon isotope ratio measurement results for doping analysis*, whilst fellow UNSW student Danmar Gloria spoke on *Electrochemical techniques for fabricating surface enhanced Raman spectroscopy substances*.

The UOW contingent highlighted some very research being carried out as Daniel Ward spoke on *An evaluation of the life cycles and suitability of three Australian benthic copepods for use in whole-sediment toxicity tests*, whilst Helen Price presented on *Optimisation of the diffusive gradients in thin films device for uptake of arsenic and selenium from marine waters and sediments*. UWS also provided some great presentations including Paul Stevenson who gave an industry geared presentation on *Optimisation of the alkyl chain spacer length on phenyl stationary phrases for the industrial separation of aromatic compounds*, not to mention presentations from two of the student organisers from Macquarie university Shaneel Chandra, and Eileen Peh. Shaneel Chandra and Eileen Peh deserve extra congratulations for their fantastic work in organising this event. Danny Wong and Christopher McRae (academic staff from the university) also worked exhaustively to ensure the success of this year’s conference.
The Conference ended with a relaxing Conference Dinner and presentation of various awards. The University of Technology was announced as next years host of the event – and Macquarie University certainly set a high bar for them to pass next year.

**NSW RACI Members perform well at the recent 30th APS conference in Melbourne**

The NSW branch was pleased to hear our member’s outstanding work in presenting at the recent APS conference. The conference had an exciting and varied program covering all areas of polymer science and engineering, including synthesis, characterisation, processing and modeling. We are particular excited to announce that Dominik Konkolewicz from University of Sydney won the Treloar prize for best oral presentation at the conference. This prize was shared with a Queensland member Geoffrey Johnston-Hall. As the RACI “Conference Season” comes to a close we are thrilled with success of all our members that have presented their work at our numerous events.

**Website of the Week**

[Chemistry Christmas carols](http://www.greece.k12.ny.us/oly/chemistry/chemistry%20carols.htm)

A little corny- I know! But humorous all the same!
CONTAMINATED SITE ASSESSMENT, REMEDIATION AND MANAGEMENT:
A SERIES OF SHORT COURSES FOR ENVIRONMENTAL PROFESSIONALS

ABOUT
The Faculty of Science through its external engagement program is presenting this series of short courses for professionals in the area of contaminated site assessment, remediation and management (CSARM).

The Department of Environmental Sciences is developing this program with the support of NSW Department of Environment and Climate Change (DECC) and industry consultants. The comprehensive program will enable participants to update their specific area of expertise, to extend their knowledge base and to network with colleagues in industry and government in this complex field of environmental management.

COURSE OUTCOMES
> Understanding CSARM legislative framework for professional practice
> Understanding Guidelines, Measures and their applications
> Designing site sampling strategy and report writing
> Understanding the processes and steps in contaminated site assessments
> Understanding the principles of risk factors, human and ecological toxology, soil science and hydrogeology

> Understanding the applications of environmental chemistry in site & risk assessment
> Understanding contemporary approaches to remediation

TARGET AUDIENCE
> Environmental professionals
> Contaminated site consultants
> Environmental engineers
> Environmental officers in government and industry
> Science and engineering graduates interested in entering this field

MODULES
Module A - Essentials for CSARM professionals
> Legislative framework
> Current approaches to CSARM
> Future directions for sustainable re-use and management of contaminated sites

Date: Thursday 5th - Saturday 7th February 2009

Other modules to be presented later on in 2009 [Date to be confirmed]:
> Module B: Planning Effective Site Assessment
Date: 16th - 18th April 2009
> Module C: Identifying Contaminants of Concern
Date: 18th - 20th June 2009
> Module D: Contaminant Hydrogeology - Fate & Transport
Date: 2nd - 4th July 2009
> Module E: Contaminants & Risk Factors
Date: 22nd - 25th July 2009
> Module F: Risk-Based Site Assessment
Date: 24th - 26th September 2009
> Module G: Reporting Site Assessments
Date: 12th - 14th November 2009
> Module H: Remediation Principles and Responsibilities
Date: 3rd - 5th December 2009

PRESENTATION FORMAT
Each module runs for 3 days and includes a mixture of lectures, laboratory sessions, site visits and case study analysis. We want this to be a valuable and flexible learning experience so you can choose the modules you feel will be of most benefit to you. Completion of all modules may count towards a tertiary qualification or industry accreditation. Certificates of attendance will be awarded on completion of each module.

PREREQUISITES
This series is designed for the professional development of scientists, engineers and managers working in the field of contaminated sites, or who have an interest in entering this field.

PRESENTERS
UTS Science and Engineering academics, DECC and CSIRO officers, industry practitioners, experts in environmental law.

VENUE
UTS Faculty of Science
Building 4, Harris Street Ultimo

COST
Each module: $1800 (excl of GST) Discount of 10% for UTS Alumni.

FURTHER INFORMATION
To be put on our mailing list contact
marketing@uts.edu.au
+61 2 9314 1766
Course registration information will be available on www.science.uts.edu.au

www.science.uts.edu.au
UTS SCIENCE PROFESSIONAL DEVELOPMENT

Contaminated Site Assessment, Remediation and Management: A Series of Short Courses for Environmental Professionals

Contaminated site assessment is a complex field of environmental management requiring the expertise and experience in diverse disciplines. There is an increasing demand for environmental professionals in this area, Contaminated Site Assessment, Remediation and Management (CSARM). Department of Environmental Sciences at UTS, with contributions from NSW Department of Environment and Climate Change (DECC) and industry consultants, has developed a short course of eight modules to help environmental professionals update their specific area of expertise, extend their knowledge base and network with colleagues in industry and government.

The series commences in February 2009. Presenters include UTS Science and Engineering academics, DECC and CSIRO officers, industry practitioners, and experts in environmental law. Each stand-alone module will run over three days, comprising a mixture of seminars, field trips and laboratory sessions. The series will provide a comprehensive approach to CSARM through a flexible and interactive learning program addressing:

CSARM legislative framework for professional practice
- Guidelines, measures and their application
- Site sampling strategy and report writing
- Contaminated site assessment processes
- Principles of risk factors, human and ecological toxicology, soil science and hydrogeology
- Application of environmental chemistry in site & risk assessment
- Contemporary approaches to remediation

The courses are specifically designed for
- Environmental professionals
- Contaminated site consultants
- Environmental engineers
- Environmental officers in government and industry
- Science and engineering graduates interested in entering this field

Completion of all modules may count towards a tertiary qualification or industry accreditation.

Details for first two modules:
Module A: Essentials for CSARM Professionals
Thursday 5th February – Saturday 6th February at UTS
Module B: Planning Effective Site Assessment
Thursday 30th April – 2nd May 2009

For program and registration details, or to download a flyer go to www.science.uts.edu.au
For all enquiries or to be put on our mailing list for further updates please contact Marea Martlew on 61 2 9514 1766 or Marea.Martlew@uts.edu.au
YOUR HONOURS STUDENTS have had some sleep since finishing their thesis – NOW is a good time to consider their eligibility for the 2009 Honours prize (Western Sydney Section) if they reside, or have done their research, in Western Sydney. ALL WE NEED IS AN EXTRA COPY OF THEIR THESIS. NO NEED to wait for examiners’ reports. Deadline 31st March, 2009; earlier submissions encouraged. Contact Deidre Tronson, deidre@bowtie.com.au **Please pass this information on to any colleagues in other departments who have Hons students who may be eligible*

The 2009 Honours prize (RACI Western Sydney Section) will be awarded for the best Honours thesis produced in 2008 by a student who is resident and/or has studied or undertaken research in western Sydney[1] throughout the year.

The RACI Western Sydney Section Honours Prize is now open to ....

... eligible applicants may be enrolled in ANY University, within ANY department/school/faculty. The project must include either ‘pure’ or ‘applied’ chemistry. This could be applied to fields such as agriculture, horticulture material science, nanotechnology, pharmacy, neuroscience, medicine, biochemistry, biology, environmental analysis, forensics, or any other discipline.

The winner will give an oral presentation at a meeting of the Royal Australian Chemical Institute Western Sydney Section during 2009 (date to be determined). This is an opportunity to showcase the research to a range of RACI members and other students. The prize will be awarded to a project that demonstrates a high level of innovation, creativity and contribution to chemical knowledge. If more convenient, the thesis may be spiral- or ‘perfect’-bound and may be submitted prior to examination because the final grade is not a determining factor. It is easy to apply. Students only need to forward a copy of the thesis, plus a covering letter containing personal details (including student’s email address), to one of the contacts below. The thesis will be returned.

DEADLINE: MARCH 31ST 2009. Earlier submission is encouraged

Enquiries and submission to:
Dr Deidre Tronson (FRACI), 21 Eagle Creek Rd, Werombi, 2570.
Ph 02 4653 1430; email: deidre@bowtie.com.au.
OR leave the thesis, clearly marked "WSS Honours Prize", at the RACI office, UNSW.

[1] “Western Sydney” is defined by the following postcodes: 2076-2077; 2111-2126; 2128; 2133; 2140-2168; 2170;2171; 2173; 2174; 2176; 2177; 2190-2200; 2205-2214; 2216-2234; 2558-2560; 2563-2579; 2745; 2747-2768; 2770; 2773-2787; 2790
12
b. 1775 William Henry discovered that the amount of gas absorbed by a liquid is proportional to the gas pressure (Henry’s Law).
b. 1817 William H. Balmain, discovered boron nitride & called it aethogen from its luminescence in a flame.
b. 1866 Alfred Werner, researcher in coordination chemistry; Nobel Prize in Chemistry (1913), for linkage of atoms in molecules, complex inorganic compounds, stereochemistry, & coordination theory of valency.
13
b. 1867 Kristian Birkeland performed the first industrial fixation of nitrogen with S. Eyde.
  ➢ Casein fiber was patented, 1938.
  ➢ Perkin-Elmer Corp. incorporated 1939.
14
b. 1909 Edward L. Tatum discovered genes that regulate certain chemical processes; Nobel Prize in Medicine (1958) with George W. Beadle for their discovery that genes act by regulating definite chemical events & & Joshua Lederberg for his discoveries concerning genetic recombination and the organization of the genetic material of bacteria. Max Planck announced his formula for the blackbody spectrum, the beginning of the quantum revolution, 1900.
  ➢ Glenn T. Seaborg, Edwin M. McMillan, J. W. Kennedy, & A. C. Wahl performed the first bombardment of uranium oxide with 16-MeV deuterons to produce plutonium (Pu, 94), 1940.
15
b. 1780 Johann W. Döbereiner postulated theory of triads showing periodicity in the elements; researcher on catalytic action of platinum; invented instantaneous lighting lamp (Döbereiner lamp).
b. 1852 Antoine H. Becquerel discovered radiation (Becquerel Rays) from uranium salts, 1896; Nobel Prize in Physics (1903) in recognition of the extraordinary services he has rendered by his discovery of spontaneous radioactivity shared with the Curies.
b. 1916 Maurice H. F. Wilkins shared Nobel Prize in Medicine (1962) with Francis H. C. Crick and James D. Watson for their discoveries concerning the molecular structure of nucleic acids and its significance for information transfer in living material.
  ➢ Pharmacopoeia of the U. S. of America “ published, 1820.
  ➢ D. Little, Inc. founded as firm for industrial research & control, 1863.
16
b. 1776 Johann W. Ritter discovered ultra-violet rays, 1802; collected oxygen & hydrogen by electrolysis, 1800; made the first dry cell battery, 1802; made storage battery, 1803; established connection between galvanism and chemical reactivity.
b. 1818 John Lawrence Smith, researcher in toxicology & mineralogical chemistry; Second President, ACS, 1877.
b. 1892 Edwin J. Cohen, helped develop the methods of cold ethanol blood fractionation (the separation of plasma proteins into fractions).
b. 1908 Willard F. Libby developed carbon dating; Nobel Prize (1960) for his method to use carbon 14 for age determination in archaeology, geology, geophysics, and other branches of science.
  ➢ Michael Faraday announced first law of electrolysis, "Chemical power like magnetic force, is in direct proportion to the absolute quantity of electricity which passes", 1832.
  ➢ Allied Chemical and Dye Corp. incorporated 1920.
  ➢ Discovery of neutron-induced nuclear fission of uranium (U, 92) by Otto Hahn and Fritz Strassmann, Berlin, 1938.
17
b. 1778 Humphry Davy discovered potassium (K, 19) 1807, sodium (Na, 11) 1807, barium (Ba, 56) 1808, & strontium (Sr, 38) 1808; invented Davy mine safety lamp.
b. 1818 John Lawrence Smith, researcher in toxicology & mineralogical chemistry; Second President, ACS, 1877.
b. 1892 Edwin J. Cohen, helped develop the methods of cold ethanol blood fractionation (the separation of plasma proteins into fractions).
b. 1908 Willard F. Libby developed carbon dating; Nobel Prize (1960) for his method to use carbon 14 for age determination in archaeology, geology, geophysics, and other branches of science.
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  ➢ Discovery of neutron-induced nuclear fission of uranium (U, 92) by Otto Hahn and Fritz Strassmann, Berlin, 1938.
18
b. 1856 Joseph J. Thomson discovered the electron; 1897, Nobel Prize (1906) in physics in recognition of the great merits of his theoretical and experimental investigations on the conduction of electricity by gases.
b. 1890 Mary L. Caldwell isolated enzymes for individual analyses.

Ref: Monthly Historical Events In Chemistry by Leopold May, The Catholic University of America
http://faculty.cua.edu/may/Chemistrycalendar.htm