CEA November Lectures

FRIDAY 17 NOVEMBER 2017
8.30 am to 4.00 pm
Bio 21 Institute
The University of Melbourne

The Chemistry Education Association, in conjunction with the **School of Chemistry and the University of Melbourne**, presents a professional development day for Chemistry teachers. The lectures will highlight some exciting recent developments and applications of Chemistry. The workshops are hands-on activities for use in the classroom. It is a great day to network with teaching colleagues and to enhance your chemistry knowledge. **Cost: $155 (no GST; includes notes, morning tea and lunch) Details**: **www.cea.asn.au**

Morning sessions – attended by all

Lecture 1: Tapping into Students' Chemical Imagination: The Macro, Symbolic and Sub-Micro
Chris Thompson
School of Chemistry, Monash University

One of the greatest challenges for chemistry educators is enabling students to engage with atoms and molecules using the three common representations: the macro, the symbolic and the micro. Chris Thompson's presentation will review the vast education research conducted on this topic, and explore methods for teachers to pursue this in the classroom. Strategies for engaging the imaginations of our VCE students will include drawing tasks, the role of multimedia tools and animations, and how this can be related back to hands-on exercises from the laboratory. We will use food chemistry as an example of enhancing the depth of learning through exploring each of the different representations.

Lecture 2: Chemistry of Solar Power
Wallace Wong
School of Chemistry and Bio21 Institute
University of Melbourne

There is no doubt that the use of energy from the sun is a critical component in meeting future global energy demand and in reducing the human impact on our environment. We already have many technologies that can convert sunlight into energy that we can use in our everyday lives but the challenge remains in reducing cost and improving accessibility. Ultimately, renewable energy sources along with appropriate energy storage technologies will eliminate the use of fossil fuels. In this presentation, I will provide a summary on solar power with focus on emerging photovoltaic technologies.

Lecture 3: Investigating Contaminated Sites
Tracey Main
Environmental Remediation Consultant
ch2m

Some industrial sites release substances into the environment that can become contaminants posing a risk to human health and/or the environment. Investigating contaminated land can be complicated, relying on an understanding of the surrounding soils, geology, surface water and groundwater flows, the contaminants of concern, and how they all interact with each other. This presentation will discuss some of the tools used by environmental consultants to develop a course of action and to undertake a field investigation. A robust plan is essential to collect appropriate data for site characterisation and ultimately to answer the client's questions and provide recommendations for further action, if required.

Afternoon workshops (2 hours)

Numbers are strictly limited in each workshop.

Workshop	Numbers	Brief Description
Workshop 1:	Maximum 30	**Improving Students' Learning though Teamwork:** **Debra Brooks, Meg McDonnagh, Catriona Hoy, Ivy Lai** **Glen Waverley Secondary College** *In senior chemistry, we tend to focus on content rather than different approaches to curriculum delivery. In this session, you will be shown practical activities to involve students in learning and challenge them to work together to apply their knowledge and express their ideas clearly. This workshop builds on content developed by a team of four teachers at Glen Waverly SC that were looking at ways that discussions between students provide valuable opportunities for powerful learning.*
Workshop 2:	Maximum 30	**Investigating enzymes and catalysts** **Andrew Mariotti, University of Melbourne and Chisolm Institute of TAFE** *There are many simple ways that students can use enzymes and catalysts for their Year 12 Investigation without spending large amounts of money, using high temperatures or starting risky lab activities. This session will go through catalytic action and provide classroom support materials*
Workshop 3:	Maximum 40	**Ideas for Year 12 Practical Investigations** **Penny Commons, University of Melbourne** *Participants attending this workshop will be asked to email (a few days beforehand) a brief outline of an example of a Year 12 practical investigation. The session will start with discussion of an example of an investigation provided by the presenter, where issues and ideas will be offered for consideration. The workshop will then divide into smaller groups for detailed discussion of some of the participants' investigations. Teachers should leave the workshop with an improved version of their own investigation and ideas for new ones.*
Workshop 4:	Maximum 30	**Isomers, Chirality and Organic Naming** **Sonia Horvat, University of Melbourne** *Chirality (optical – R&S – isomerism) and cis and trans (geometric) isomerism about C=C double bonds in organic compounds. This is a new area in the 2017 Year 12 VCAA Study Design. The interactive nature of this workshop will allow teachers to see how they might provide this information to their students in a practical way.*

Note that there may be minor changes to the program.

To register, follow this link to the online registration form
You will receive an invoice by email once the registration is complete.
Payment may be made by direct deposit or cheque

For Direct Deposit:
Account name: Chemistry Education Association
BSB: 083230
Account Number: 515611011
Description: Your School Name_Your initials

Post a cheque payable to Chemistry Education Association Inc to:
Mick Moylan, Chemistry Education Association, PO Box 4142, University of Melbourne 3052

For inquiries: mmoylan@unimelb.edu.au or (03) 8344 6465