

Alan Tetlow Bursary

In memory of Alan Tetlow the Water Science Forum bursary will help post graduate students, young (under 35) or professional water scientists during the first 10 years of their career.

Contact: Hon Sec, RSC Water Science Forum, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK

Are you interested in Representing the WSF?

The British Standards Institution need a new WSF representative on their committee B/504/I3 - Drinking Water Treatment, following the resignation of the former representative. If you are interested, please contact the Secretary of WSF, Dr Roger Wellings, email: wellings@wellingsfamily.plus.com

Sustainable Water - Water System Science & Policy Interfacing

Kevin Prior

Scientists, engineers, and technologists may have technical solutions which can address water sustainability issues. However, they cannot impose them on society and must use the available channels in order to inform and help influence public policy and organisational strategies. The experiences of the RSC Water Sciences Forum (WSF) illustrate how scientific bodies can participate productively in this process and demonstrate that scientists must work with politicians, consumers, and citizens in order to ensure that policies are based on sound science and evidence.

WSF is an Interest Group of the Royal Society of Chemistry with Worldwide membership:

Members are mainly based in the UK with significant numbers in other EU member states plus the USA, Australia and UAE. Members are employed in Academia (Teaching & Research, Students), Regulation, Utilities, Water Sector service providers (private and public), and Consultancy, contractors, technology, and equipment suppliers.

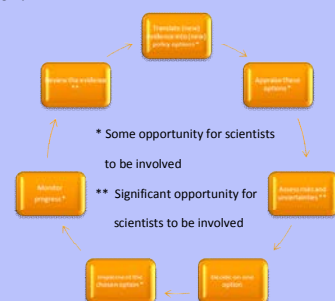
So what is Policy? A plan of action to effect change. Policies have two Roles:

Informative: communicates to a wider audience what the organisation is trying to achieve.

Functional: the policy acts as a guide for future action for the organisation.

Who are 'Policy Makers'? Public Policy makers are:

- Ministers and other MPs, Lords and parliamentary committees
- Civil servants in government departments, devolved administrations and agencies
- Members of regional assemblies and local authorities
- Scientific and political advisors and advisory bodies



Policy is also made in commercial and not for profit organisations which can also influence the sustainability of water. Policy makers in that situation are the board members and their advisors.

Water Scientists have the opportunity to be involved in all stages of the development of water related policy with the exception of the policy decision stage which should be reserved for the decision making body of the organisation. In the case of public policy that is usually the elected representatives of the people concerned.

WSF communicates with policy makers and takes part in the policy development process as part of its main objectives, in particular in assisting the Royal Society of Chemistry in presenting a corporate view to national and local government on matters relating to the water environment. WSF does this by; writing briefs for RSC, Responding to public consultations, contributing to development of: standards, Regulations, Guidance documents.

As part of WSF's conference and seminar programme International Conferences aimed at Science Policy Interface are organised with other like-minded organisations e.g. Joint RSC-WSF, SCI, IWW (Germany) Water Framework Directive series now at WFD5 and the Water Contamination and Emergencies (WCEC3). National, Local & Regional Events are also held. Last but not least members available to speak to elected members: (MPs, MSPs, AMs) and the media.

The experience from these and other Science Policy Interface events has highlighted:

The common barriers to successful policy implementation:

- Technically inadequate
- Socially and culturally unacceptable
- Not economically feasible
- Makes too great a demand on available human resources
- Counter to constitutional requirements
- Blocked by other government departments due to lack of coordination and consultation
- External factors such as poor public servant morale or public resistance
- How the strategic behaviours of the parties can influence policy making.
- Criticality of accurate, reliable, and repeatable scientific evidence that was accessible and understandable by everybody involved

If you wish to find out more or take part in the WSF Science-Policy Interface activities please get in contact with the Hon Sec Roger Wellings or any other WSF Committee member via the web site or MyRSC page <http://my.rsc.org/groups/home/74>

General information on the RSC's Science Policy activities is at <http://my.rsc.org/groups/home/183>

Points of interest:

- Water droplets
- Are you interested in representing the WSF?
- ICMGP Edinburgh 2013

WE ARE ON THE WEB

[WWW.RSC.ORG/
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INDEX.ASP](http://WWW.RSC.ORG/MEMBERSHIP/NETWORKING/INTERESTGROUPS/WATERSCIENCE/INDEX.ASP)

"Promoting the professional and scientific interests of members to safeguard the public interest in the application of chemical sciences in water-related industries."

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Water Contamination Emergencies Conference No. 5

"Managing the Threats"

John Gray

A total of 154 delegates attended the 5th Water Contamination Emergencies conference held at the RWVW Water Treatment Works conference facility just outside Mulheim an der Ruhr in Germany between 19 and 21 November 2012. Delegates attended from 26 countries demonstrating the truly international nature of the conference and its importance although it was disappointing to note that the 23 English water companies only managed to send one delegate.

The first of this series of conferences was held back in 2003 with the title "Can we cope?" and further conferences to address this key question were held in 2005 ("Enhancing our response"), 2008 ("Collective responsibility") and 2010 ("Monitoring, understanding, acting"). This event dealt with the question of how to manage the threats.

The formal programme followed a scene setting introduction and included presentations in the areas of "How do we assess and manage the risks?", "Real life examples", "Lessons learnt" and "What can be done in future?" A parallel session with five presentations ran for part of the second day and covered "Technological advances". This session was mainly looking at new methods of monitoring and analysis with a final presentation entitled "Best practice protocols for response and recovery operations in contaminated water systems".

There were 11 keynote speakers invited representing the EU, the World Health Organisation, the UK Health Protection Agency, and various international academic and industrial organisations. Some 28 technical papers were presented covering subjects as diverse as the Fukushima earthquake and its consequences; risk governance and assessment; hydraulic modelling; water quality deterioration and the application of sensors; recovery and decontamination strategies after contamination; health implications of contamination; and systems to enhance protection in the future. Many of the presentations can be viewed at <http://www.wcec5.eu/> under "Programme"



The three principal sponsors were RSC-WSF, SCI and IWW. Seven other sponsors also gave valuable support. The conference was co-organised with SecurEau (see <http://www.secureau.eu/>) which held a separate security dissemination workshop after the conference to allow the transfer of classified results from the four year SecurEau FP7 project dealing with security and decontamination of drinking water distribution systems following a deliberate contamination. This final session included presentations on the significance of the internal surface of mains pipes in drinking water distribution networks; contamination source and spread issues; limitations of remediation techniques for decontaminating drinking water networks; how to balance CAPEX/OPEX against safety, costs and time constraints. A final summing up session followed.

Some 35 posters were accepted and ten authors had the opportunity to make short presentations. There were eleven exhibitors and their stands generated much interest

The conference dinner was held in the imposing Muelheim Municipal Hall and the Muelheim Water Award and prizes for the two best poster prizes were presented.



Proceedings of the conference containing full papers and poster presentations will be published in book format as the proceedings of the previous four conferences. Papers will be edited by three organising committee members and reviewed by the RSC before publication. Editing will start in January 2013 and proceedings should be hopefully available from May 2013. Proceedings may be purchased direct from RSC Publishing. There should also be a special package deal available to purchase the proceedings of all five WCEC events.

Water Research

There are a number of ways in which you can keep up to date with the latest research and developments in the water sector, helping you to maintain an up to date CPD. These include keeping up to date with the announcements and information on the WSF part of the RSC website. However, many other organisations conduct work in this area, much of which is freely available on the internet.

One important and very useful source is the Research section on the Drinking Water Inspectorate (DWI) website (www.dwi.gov.uk/research). As part of their duty to assess emerging potential risks to drinking water quality and advancements in managing and monitoring risks the DWI operate a rigorous, detailed and wide ranging research programme – publishing the results on their website.

Recent topics range from scientific topics as broad as pharmaceuticals, potential endocrine disrupting chemicals, molybdenum, nanoparticles and nitrosamines through to less scientific but no less important topics such as the use of language on customer perceptions.

Water Science Forum

Subscriptions 2013

2013 all inclusive fee

* up to 3 interest groups included in RSC membership, each addition interest groups £10 each

The Draft Water Bill

Martin Padley

The water industry in the UK operates within a very tight regulatory framework, governed by a number European Directives and national legislation, regulations and regulators. Over the last 23years, this framework has successfully enabled all parties to work together to deliver improvements to drinking water and environmental protection.

However, in England and Wales and in recognition of the challenges of a growing population, a less certain water supply situation, a desire for greater environmental protection and to give customers more choice, the Government published the Draft Water Bill in July 2012.

This Bill includes a number of significant changes, including measures to incentivise sustainable water management and abstraction and to make competition easier. Competition could take a number of forms, including a new entrant treating and distribution water into an existing network – often referred to as wholesale competition.

These changes are likely to present a number of technical challenges that will require professional scientists, engineers, operators and regulators to work together to effectively protect the environment water quality and customer service and confidence.

In particular, a good technical understanding and management of the introduction, blending, hydraulic behaviour and interaction of new water types with existing waters and water supply networks will be required. There are numerous examples of potential issues, including mixing waters with differing hardness, disinfectants, metals or trace organic components that may result in unintended consequences as diverse as abnormal taste or odours, discolouration or changes to harness.

The Draft Bill is likely to become law in 2013.

Providing professional recognition for technicians and technical scientists

Steve Ward

In April 2012 the Royal Society of Chemistry (RSC) successfully applied for a pilot licence from the Science Council to award the designations Registered Science Technician (RSciTech) and Registered Scientist (RSci). These registers are predominately aimed towards people who have a QCF level 3 (e.g. A-Levels) and QCF Level 5 (e.g. HND, FdSc) qualification respectively, and have experience working in a technical role in science. Though the register requirements can be met through varying combinations of qualifications, experience, work based learning and CPD.

The registers will recognise technicians and scientists with qualifications other than a degree and potentially allow them access to professional membership of the RSC, which in the recent past has favoured graduate level entry.

The RSC has just completed a 6 month research project to further its knowledge and understanding of technicians working within the chemical science profession. The project was funded by Gatsby Charitable Foundation and had the following aims:

- To better understand the current provision;
- To determine the future landscape;
- To identify what the RSC must do as a professional body to support its technician and technical scientist members.

To date the RSC has contacted over 100 companies across all sectors of the chemical sciences and completed approximately 60 questionnaires.

With a strong tradition of developing technicians and technical scientists and the drive to demonstrate competency, the water sector has already responded very positively to this new level of professional recognition. In fact the water sector is leading the way with Affinity Water (formally Veolia Water) and Northern Ireland Water producing the first batch of Registered Scientists via the RSC.

The RSC is accepting direct applications for both of these new registers but also working on accreditation of qualifications, apprenticeships and in-house training to allow for a more streamlined application. For more information visit the RSC website www.rsc.org/rsci-rscitech.

CPD and Potable Water Quality Compliance Monitoring

Gavin Mills

Continuing Professional Development has become an important tool for charting and planning individuals' careers. RSC provides support to members in this area through training, networking opportunities and RSC approved professional qualifications. CPD has become an essential feature for those working in the field of potable water analysis in the UK and this article explores the link between the regulatory background, individual's personal development and how RSC provides the support for this process.

Regulation 16(2)(d)(i) of The Water Supply (Water Quality) Regulations (2000 England & Wales, 2001 Scotland, 2002 Northern Ireland) states that the analysis of potable water should be carried out or supervised by "competent" persons. The definition of competence in the regulations goes beyond proficiency in specific tasks, to a demonstration of competence in a range of key areas. These competencies are described in guidance provided by the Drinking Water Inspectorate (DWI); http://dwi.defra.gov.uk/stakeholders/information-letters/2007/08_2007ANNEX.pdf and extend from nine competencies for analysts to sixteen for technical and quality managers. The timetable for implementation of the guidance is well established, with water testing laboratories being on course to meet requirements fully by December 2013. At this final stage, all competent persons should have CPD records demonstrating competency in all the required areas with managers having obtained Chartered status in their respective profession.

RSC supports the process of complying with the regulatory guidance in terms of awarding Chartered status (CChem) - see <http://www.rsc.org/Membership/Qualifications/CharteredStatus/cchem.asp>. Chartered status is awarded and maintained by demonstrating twelve specific personal attributes. Key to demonstrating competence in these areas is the production of a CPD portfolio which typically comprises the following:

A summary of an individual's overall experience related to key professional attributes.

An ongoing diary element to the record, noting specific CPD events and experiences encountered with reference against the professional attributes.

A process for review of CPD by an individual's manager or mentor such that gaps may be identified and a plan made for development.

The DWI have adopted the RSC professional attributes in producing their own competencies and the processes involved in regulatory compliance and gaining Chartered status overlap to the extent that the twelve CChem professional attributes are described identically amongst the sixteen regulatory "competencies". The drinking water regulations include additional competencies related to analysis but it is of great benefit that progression with the profession is linked in this way. RSC are also supporting registration of non-graduates in conjunction with the Science Council in relation to Registered Science Technician and Registered Scientist (RSciTech and RSci) and CPD forms part of this initiative.



In summary, the regulatory requirement for those working in potable water analysis to demonstrate professional competence is supported by the RSC in numerous ways, particularly in the area of CPD and mechanism to obtain Chartered or Registered status. The Water Science Forum supports a variety of CPD conferences that as well as being useful events in their own right, also allow individuals to obtain experience in key professional development areas. In due course, the need for CPD will be extended to other important areas such as sampling and on-site analysis and organisations also view CPD of great benefit outside of regulatory requirements.

Water Droplets:



“The same amount of water exists on earth now, as did when the earth was formed. Drinking water taken from a tap could contain molecules that Neanderthals, or Michael Faraday drank ...”

“water resource issues can only be addressed by scientists, engineers and policy makers working together.”
Professor Tony Allan

Come to Edinburgh in 2013
...and find the answers to all your mercury questions!
28th July-2nd August 2013

2013 will see the launch of the ICMGP Global Supply Binding Agreement in January. This is the first step towards a global supply binding agreement that will ensure the availability of mercury for essential uses, while reducing the amount of mercury that is lost to the environment. The agreement will be accompanied by the largest ever exhibition of mercury-related expertise, including government, industry, academia and NGOs, providing a unique opportunity for mercury monitoring and control from all sources. There will also be a number of workshops and seminars on the topic. For more information visit www.mercury2013.com

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