




Water Science Forum Member Engagement Event

Queen's University Belfast
7th May 2014






RSC Water Science Forum

- Interest Group of the Royal Society of Chemistry
 - World wide membership
 - Members employed by:
 - Regulators
 - Utilities
 - Researchers
 - Water Sector companies:
(consultants, contractors, suppliers)
- 



Membership Structure

Affiliate	Associate Member AMRSC	Member MRSC	Fellow FRSC
Chartered Chemist (CChem)			
Registered Science Technician (RSciTech)	Registered Scientist (RSci)	Chartered Scientist (CSci) Chartered Science Teacher (CSciTeach)	





Networking

Member networks

35 Local Sections

15 International Sections

Scientific networks

9 Divisions

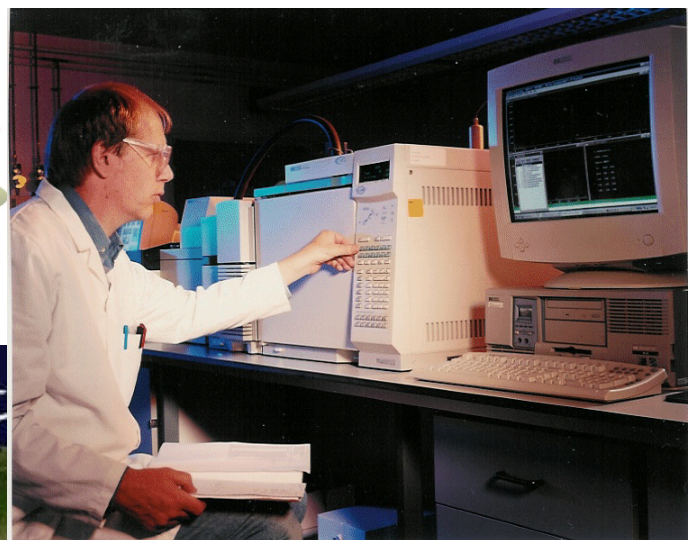
73 Interest Groups

Conferences

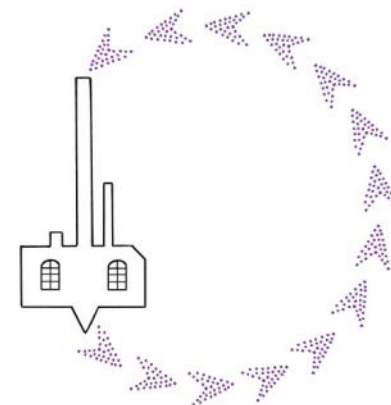
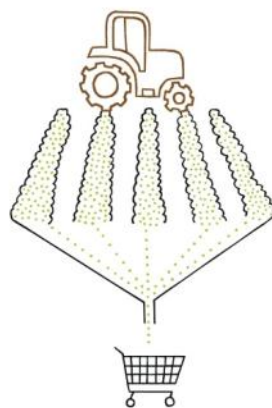
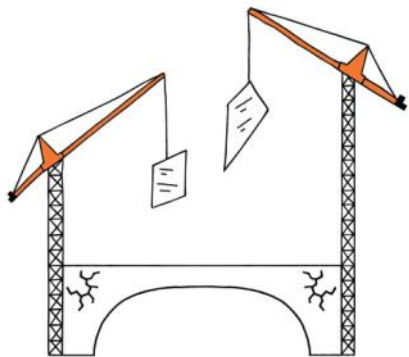
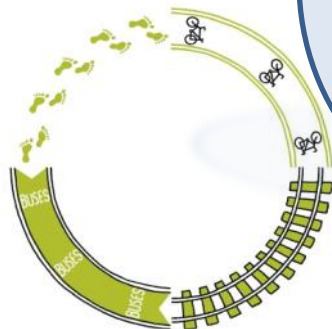
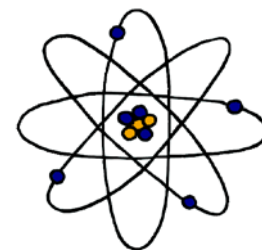
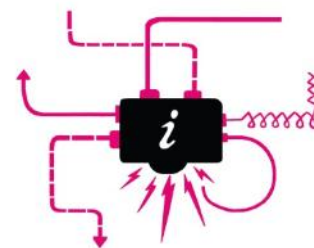
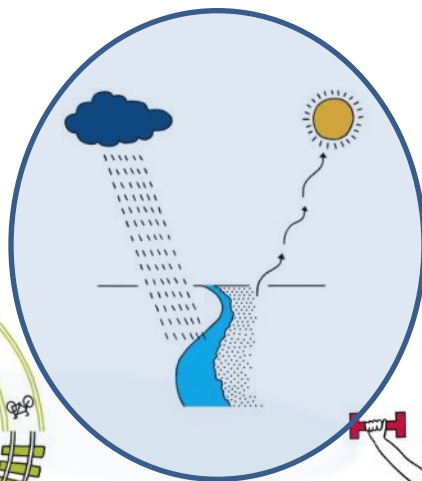
MyRSC



Who we are



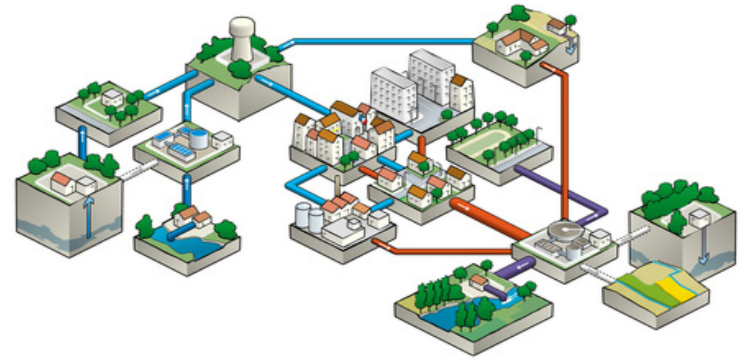
Chemical Science Roadmap



WSF Aims


To promote the professional and scientific interests of members

To advise on and influence, in the public interest, the application of chemistry in water-related industries.





WSF Objectives

- To keep members up-to-date with current developments within the water sector and to promote Continuous Professional Development.
 - To provide a forum for the debate of professional and scientific matters on water-related issues within the RSC and other relevant organisations.
 - To provide specialist technical advice on water-related issues to the RSC and to assist the RSC in presenting a corporate view to national and local government on matter of interest to WSF members.
 - To promote research, education and specialised training in all aspects of water-related chemistry, including relevant chartered status for members
- 




WSF Activities

- Bursaries & Awards
 - Conferences
 - Radiological Protection in the Water Industry
 - Protecting Water Catchments from Diffuse Pollution
 - International Meeting on Mercury as a Global Pollutant
 - Indo-UK Perspective on Water Quality: Threats, Technologies and Options workshop
 - House of Commons Science & Technology Committee inquiry on Water Quality
 - Science in Parliament (Scotland)
 - Briefing Papers and educational material
 - Involved in UK, EU (CEN) & ISO standards development
- 



WSF Priorities 2014 - 15

- Sustainable Water Supplies
 - Small scale / less well off communities
 - Large scale urban reuse/recycle
 - Potable Water Quality
 - Disinfection by-products
 - Environmental Water Quality
 - Priority Substances in the field of Water Quality (WFD)
 - CPD
 - “competent person”
 - RSci, RSciTech, CSci, CChem
 - Standards & methods
- 



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Member Benefits



Library and Information Centre

Do you need information on chemical structures, business, analysis or a famous chemist? Contact Europe's foremost chemical knowledge source.

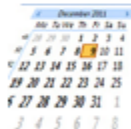


In this section

- ▶ [About the RSC Library and Information Centre](#)
- ▶ [Catalogues and Collections](#)
- ▶ [Library Services and Information Resources](#)
- ▶ [The Virtual Library](#)

Virtual Library Quicklinks

- ▶ [ChemSpider](#)
- ▶ [EBSCO eBooks](#)
- ▶ [EBSCOhost Research Databases](#)
- ▶ [Elsevier ScienceDirect](#)
- ▶ [Infoterm](#)
- ▶ [Kirk-Othmer Encyclopedia of Chemical Technology](#)
- ▶ [Knovel Library](#)
- ▶ [Our Publishing Resources](#)
- ▶ [Referex E-Books \(Engineering Village\)](#)
- ▶ [SpringerLink](#)



Library Opening Times and Availability

Please check the library availability and our opening times before your visit.



Kirk-Othmer Encyclopedia of Chemical Technology

Kirk-Othmer Encyclopedia of Chemical Technology presents a wide scope of articles on chemical substances.

▶ Library Catalogue: Books & Archive

Online catalogue for the Library collections
(Opens in a new window)



Library Catalogue: Journals

The online serials and journals catalogue: archive and current titles.



Library Enquiries Form

Please use this form to send the library your enquiry.



Having Problems Logging-in?

Advice on how to overcome difficulties logging-in.

Library Services and Information Resources

Services that the RSC library has to offer for both RSC Members and non-Members, including details about the enquiry service and many links to useful information resources.

Library Services

▶ **Borrowing Books & Journals and Options for Document Supply**

How to borrow books & journals and obtain full text articles.

▶ **Chemistry Search Service**

A fast, reliable, confidential and largely cost free service to meet members information requirements.

▶ **Historical Enquiries**

Details of the Library service for conducting searches regarding famous chemists and past members of the society.

▶ **Image Reproduction Service**

Options available for viewing/acquiring our images.

▶ **Library Enquiries Form**

Please use this form to send the library your enquiry.

Information Resources

▶ **CAS Registry Numbers**

How to find the CAS Registry Number of a compound.

▶ **Chemical Information on the Web**

Links to (mostly) free chemical information resources.

▶ **The RSC Biographical Database**

Search for biographical information on famous (and not-so-famous) chemists using the RSC Library's biographical database.

▶ **Historical Chemistry Links**

Links to external sites on the History of Chemistry and to details of historical collections from other organisations.

▶ **M25 Consortium**

The M25 Consortium scheme allows RSC members to visit and borrow library material from other participating institutions within the South East of England.

▶ **Overview of Library Electronic Resources**


A summary of electronic resources available within the Library and via the Virtual Library.


▶ **Registers**

RSC maintained lists of experts, specialists and qualified persons

Downloadable Files

Library Guide

 PDF (898k)

PDF files require  Adobe Acrobat Reader





Support services

ChemCareers



CPD

Careers guidance

Benevolent fund

CV Clinics





Travel



Lifestyle



Insurance



Publications



Work & Business



Legal & Financial



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A brief introduction to Registers



Professional Registration

- Registered Science Technician (RSciTech) & Registered Scientist (RSci)
- Registers are held by The Science Council
- RSciTech: competent technician, QCF level 3
- RSci: experienced technical scientist, QCF level 5
- Designatory letters i.e. Joe Bloggs RSciTech
- RSC is one of 8 professional bodies: SB, IChemE, IFST, IST, IPEM, ASE, IBMS



RSciTech

A: Application of knowledge and understanding

Identify and use relevant scientific understanding, methods and skills to complete tasks and address well defined problems

A1: apply knowledge of underlying concepts and principles associated with area of work

A2: review and select appropriate scientific techniques, procedures and methods to undertake tasks

A3: interpret and evaluate data and make sound judgements in relation to scientific concepts

B: Personal responsibility

Exercise personal responsibility in planning and implementing tasks according to prescribed protocols

B1: work consistently and effectively with minimal supervision to appropriate standards and protocols

B2: manage and apply safe working practices

B3: accept responsibility for the quality of work of self and others

B4: take responsibility for completing tasks and procedures as well as using judgement within defined parameters

C: Interpersonal skills

Demonstrate effective communication and interpersonal skills

C1: demonstrate effective and appropriate communication skills

C2: demonstrate interpersonal and behavioural skills

C3: demonstrate an ability to work effectively with others

D: Professional practice

Apply appropriate theoretical and practical methods according to protocol

D1: recognise problems and apply appropriate scientific methods to identify causes and achieve solutions

D2: identify, organise and use resources effectively to complete tasks

D3: participate in continuous performance improvement

E: Professional standards

Demonstrate a personal commitment to professional standards

E1: comply with relevant codes of conduct and practice

E2: maintain and enhance competence in own area of practice within structured and managed environment

A: Application of knowledge and understanding

Identify and use relevant scientific understanding, methods and skills to address broadly-defined, complex problems

A1: develop, maintain and extend a sound theoretical approach to application of science and technology in practice

A2: apply underlying scientific concepts, principles and techniques in the context of new and different areas of work

A3: analyse, interpret and evaluate relevant scientific information, concepts and ideas and to propose solutions to problems

B: Personal responsibility

Exercise personal responsibility in planning and implementing tasks

B1: work autonomously while recognising limits of scope of practice

B2: take responsibility for safe working practices and contribute to their evaluation and improvement

B3: promote and ensure the application of quality standards

B4: take responsibility for planning and developing courses of action as well as exercising autonomy and judgement within broad parameters

C: Interpersonal skills

Demonstrate effective communication and interpersonal skills

C1: demonstrate effective and appropriate communication skills

C2: demonstrate interpersonal and behavioural skills

C3: demonstrate productive working relationships and an ability to resolve problems

D: Professional practice

Apply appropriate theoretical and practical methods

D1: identify, review and select scientific techniques, procedures and methods to undertake tasks

D2: contribute to the organisation of tasks and resources

D3: participate in the design, development and implementation of solutions

D4: contribute to continuous performance improvement

E: Professional standards

Demonstrate a personal commitment to professional standards

E1: comply with relevant codes of conduct and practice

E2: maintain and enhance competence in own area of practice through professional development activity



Application

C1: Demonstrate effective and appropriate communication skills

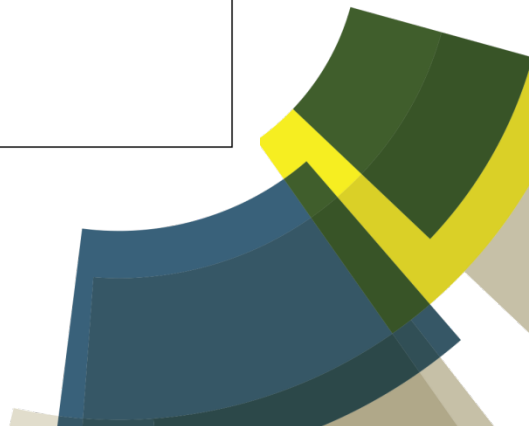
E.g. Oral presentations, communication in meetings, providing info for the next shift etc.
(1 example)

C2: Demonstrate interpersonal and behavioural skills

E.g. where you have shown respect towards colleagues or customers.
(1 example)


C3: Demonstrate productive working relationships and an ability to resolve problems

E.g. where you have demonstrated team work or a collaborative approach to overcome a problem or issue.
(1 example)





Chartered Status

- Awarded in many professions
 - RSC awards CChem and CSci
 - 18,000 CChem; 3000 CSci
 - Professional qualifications
 - Academic component
 - Professional competence requirements
 - Continuing Professional Development (CPD)
- 



Eligibility

- Must be MRSC or FRSC
 - High level of specialised chemistry knowledge critical to fulfilling job role
 - Professional attributes/competencies
 - Scientific competence
 - Autonomy and professionalism
 - Communication and influence
 - Environment, Health and Safety
 - Broader Developments
- 




Standard Processes

<10 years experience

- Professional Development Programme (PDP)
- Minimum 2 years to build portfolio
- Input by a mentor required throughout
- 6, 12 and 24 month reports
- Portfolio assessed by Admissions Committee
- £25 to register plus £25 on submission of portfolio
- £20/yr to maintain


>10 years experience

- Direct Route to CChem available
 - Portfolio based on evidence from previous 2 years
 - Support of a mentor required
 - Single report
 - Portfolio assessed by Admissions Committee
 - £50 to be paid upon registration
 - £20/yr to maintain
- 



Evidence



- Portfolio of around 30 pages
 - At least one piece of evidence per attribute
 - Not only certificates or formal documents
 - Testimonial from colleagues or clients acceptable
 - Variety is good
- 



Revalidation

- CChem, CSci, RSci and RSciTech are making a commitment to CPD
 - Online tool for members available*
- All asked to revalidate annually
 - Declaration that you are continuing to develop professional key skills in a chemical science role
 - May be asked to provide a summary of activities over past 12 months
 - May be asked to provide primary evidence

* www.rsc.org/cpd





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A brief introduction to CPD





What is CPD?

Continuing professional development is:

“..... the responsibility of individuals for the systematic maintenance, improvement and broadening of knowledge and skills to ensure continuing competence as a professional throughout their career”.

Developing and maintaining a CPD portfolio is an absolute requirement for CChem and CSci





Currently...





Mandatory CPD


CPD is mandatory for:

- Members working towards professional registration (CChem, CSci, RSci, RSciTech)
- Holders of the above professional designations
- Members on specialist registers






Wider engagement

- All members are encouraged to undertake CPD
 - Information on www.rsc.org/cpd
 - Online CPD planning and recording resource is a member benefit
- 

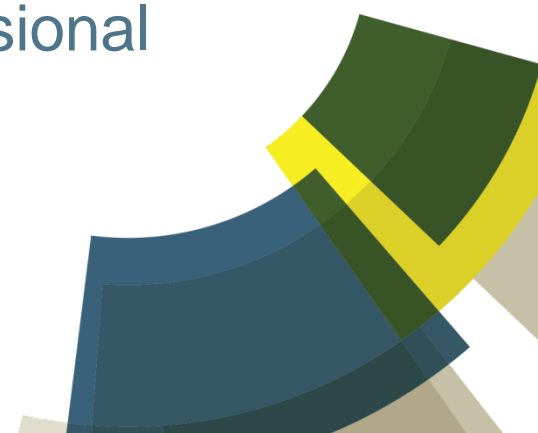


Issues

- CPD has negative connotations for some members
 - Communication to members about CPD has not been targeted
 - Lack of understanding about the variety of activities that count as CPD
 - Perception that CPD is 'logging hours' spent on training courses
- 




Developing CPD awareness and practical support

- Link to CPD to career development; communicate benefits to the individual
 - Greater emphasis on CPD for all members.
 - Enhanced, joined-up communication, campaign across a range of activities
 - Targeted, high-profile guidance on how, what, where and why
 - Focus on outputs and reflection, professional and personal development
- 




CPD and careers

- New RSC Careers Portal goes live this year
 - Will link all professional and personal development resources
 - Will promote what, when, how and why for CPD
 - Link CPD to skills development, employability and career objectives
 - Link directly to CPD online recording resource.
 - Link to approved training courses
- 




Chartered Chemist professional attributes

1. Make significant personal contributions to key tasks in your employment area and understand fully the chemistry objectives of the work done and its relevance to the employer or others
 2. Demonstrate a high level of appropriate professional skills in the practice of chemistry
 3. Develop your chemistry and other professional skills as required for the work undertaken and career development
 4. Demonstrate an understanding and appreciation of Health, Safety and Environmental issues and adhere to the relevant requirements relating to your role.
 5. Evaluate critically and draw conclusions from scientific and other data.
 6. Demonstrate integrity and respect for confidentiality on work and personal issues. Demonstrate other professional attributes such as thoroughness and reliability.
- 



Chartered Chemist professional attributes

7. Plan and organise time systematically, demonstrate foresight in carrying out tasks, and offer suggestions for improvements to tasks/duties
 8. Demonstrate an interest in broader developments in chemical science and make a contribution to the profession of chemistry outside your direct work environment
 9. Write clear, concise and orderly documents and give clear oral presentations
 10. Discuss work convincingly and objectively with colleagues, customers and others. Respond constructively to, and acknowledge the value of, alternative views and hypotheses
 11. Demonstrate the ability to work as part of a team
 12. Exert effective influence
- 



Water Industry Laboratory requirements

Drinking Water Inspectorate (DWI) Information Letter requires:
Competent Persons: Maintain a CPD portfolio demonstrating competence against a cut down list of 9 professional attributes


Competent Technical and Quality management: Must be Chartered and maintain a CPD portfolio demonstrating competence against the 12 CChem attributes plus four others:

Demonstrate a commitment to continued learning and development

Demonstrate a high level of understanding of the principles and practice of analytical quality control

Demonstrate competence in staff management and if relevant contract management

Plan the operation and continuing maintenance of new systems and services



Competent Persons

7 CONTINUED PROFESSIONAL DEVELOPMENT

RSciTech

7.1 *Competent persons should be able to produce evidence that they possess the following skills: -*

RSci

A1

1. **Make significant personal contributions to key tasks in their employment area and understand fully the chemistry/microbiology objectives of the work done and its relevance to the employer or others.**

A1

A1

2. **Demonstrate a high level of appropriate skills in the practice of chemistry/microbiology.**

A1

E2

3. **Develop their chemistry/microbiology and other skills as required for the work undertaken and career development.**

E2

E1, B2

4. **Demonstrate an understanding and appreciation of Health, Safety and Environmental issues and adhere to the relevant requirements relating to their role.**

E1

A3

5. **Evaluate critically and draw conclusions from scientific and other data.** A1

C2

6. **Demonstrate integrity and respect for confidentiality on work and personal issues, demonstrate other professional attributes such as thoroughness and reliability.**

C2

B1, B4, D2, D3

7. **Plan and organise time systematically, demonstrate foresight in carrying out tasks, and offer suggestions for improvements to tasks/duties.**

B1, B4,
D2, D4

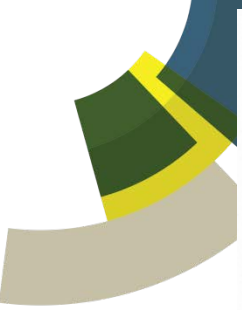
E2

8. **Demonstrate a commitment to continuing learning and development.** E2

A1, B3

9. **Demonstrate a high level of understanding of the principles and practice of analytical quality control.**

A1, B3



7.2 *Competent Technical Managers, Quality Managers, and those who deputise for these two roles should be able to produce evidence that they possess the following professional skills: -*

- 1. Make significant personal contributions to key tasks in their employment area and understand fully the chemistry/microbiology objectives of the work done and its relevance to the employer or others.**
- 2. Demonstrate a high level of appropriate professional skills in the practice of chemistry/microbiology/water science.**
- 3. Develop their chemistry/microbiology/water science and other professional skills as required for the work undertaken and career development.**
- 4. Demonstrate an understanding and appreciation of Health, Safety and Environmental issues and adhere to the relevant requirements relating to their role.**
- 5. Evaluate critically and draw conclusions from scientific and other data.**
- 6. Demonstrate integrity and respect for confidentiality on work and personal issues, demonstrate other professional attributes such as thoroughness and reliability.**
- 7. Plan and organise time systematically, demonstrate foresight in carrying out tasks, and offer suggestions for improvements to tasks/duties.**
- 8. Demonstrate a commitment to continuing learning and development.**
- 9. Demonstrate a high level of understanding of the principles and practice of analytical quality control.**
- 10. Demonstrate an interest in broader developments in chemical/microbiological/water science and make a contribution to their profession outside their direct work environment.**
- 11. Write clear, concise and orderly documents and give clear oral presentations.**
- 12. Discuss work convincingly and objectively with colleagues, customers and others. Respond constructively to, and acknowledge the value of, alternative views and hypotheses.**
- 13. Demonstrate the ability to work as part of a team and to implement and introduce change.**
- 14. Exert effective influence.**
- 15. Demonstrate competence in staff management and if relevant contract management.**
- 16. Plan the operation and continuing maintenance of new systems and services.**


Note: These competencies have been derived from those required of chartered members of the Royal Society of Chemistry, the Institute of Biology and the Chartered Institute of Water and Environmental Management.

Competent Managers






Some typical CPD activities

- Designing experiments
 - Developing / validating analytical methods
 - Report writing
 - Author / Joint Author of peer reviewed papers
 - Preparing CoSHH and Risk Assessments
 - Participation in technical and H&S committees
 - Training courses (trainer and trainee)
 - Conferences and seminars – attendance and presentation
 - Relevant volunteering activities - STEM
 - Participation in RSC and other professional society meetings
 - Self-study courses
 - Purchase and commissioning of new equipment
 - Performance management of staff
- 




Role of the RSC and WSF

- Attendance at WSF seminars “ticks the box” against a number of the professional competencies required for CChem and CSci
 - WSF are organising a specific water industry CPD seminar in 2014 with the aim of clarifying and standardising appropriate CPD activity to meet regulatory requirements
 - RSC runs specific CPD activities for teachers and other professionals
 - RSC has a CPD recording tool available for use by members
- 




Outputs and reflection


Targeted guidance encourages all members to:

- Plan CPD actively by identifying skills gaps and using targeted guidance.
 - Use RSC online CPD resource to plan and record activities, and also to reflect on outcomes of each activity and effect on professional practice. Flexible, confidential resource.
 - Individual members can share their CPD record with managers if they wish – useful for employees in SMEs and to meet employers' requirements for CPD.
- 



Monitoring

- The scheme will be voluntary for most members (except those in the Mandatory categories)
 - We will consider ways to give generic feedback via the Careers Portal to encourage commitment to CPD and highlight its benefits to individual career development
 - Members can use the planning and recording system with their employers' monitoring processes
- 



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Bursaries and Awards





Alan Tetlow Memorial Bursary

- To help encourage early career chemists (during the first 10 years of their career) and those returning to work after a career break to develop their professional career. Awards of up to £2,000 per year are available
- Members can apply for financial assistance to advance their career in relation to the following activities, to:
 - Attend conferences for the purpose of presenting a poster or paper
 - Attend research meetings (including young researcher meetings)
 - Visit UK or international laboratories
 - Complete training courses; and
 - Assist in research relating to water science projects in general
- Please note that activities are not restricted to these activities only. However, the activity needs to contain a high proportion of water related chemical science which contributes to water sustainability (environment, economic, social) and have an identifiable practical application

<http://www.rsc.org/Membership/Networking/InterestGroups/WaterScience/bursaries.asp>





Developing Water Science Bursary

- To support water science research in specific topic areas.
- The 2013 Water Science Bursary is for research projects examining this Water for Food area. Awards of up to £2,000 per year are available in relation to the following activities:
 - Water for Food research projects including MSc thesis projects
 - Short sabbatical periods to complete relevant research
 - Assistance in Water for Food research projects.
- The funds are available to assist MSc students or students on other career development routes including those who have no formal higher qualifications (degree, HND).
- This award may also be particularly relevant to members aiming to achieve Registered Science Technician (RSciTech) or Registered Scientist (RSci) status.
- In addition early stage chemists (during the first 10 years of their career) and those returning to work after a career break to develop their career are particularly encouraged to apply.

<http://www.rsc.org/Membership/Networking/InterestGroups/WaterScience/bursaries.asp>





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Event organisation and sponsorship





What type of event?

- Member engagement events
- Half day or one day seminars on burning issues run throughout the UK
- Single or multi-themed technical conferences with relevance to water science – UK or International



Involvement on different levels


- Financially liable sponsor – WSF may sponsor an event jointly or alone and share in the surplus (or loss), if any
- May badge event and be on the organising committee without financial liability
- May take an exhibition stand to publicise RSC and WSF
- Awards – WSF may sponsor an event with a water science theme through a poster or paper award





Upcoming events 2014 -15

Date	Title	Venue
7 May	Member Engagement Event	Queen's Belfast
16 June	Flow cytometry seminar	Cranfield
16 & 17 June	50 Shades of Water Management	Manor Hotel, Meriden, Near Coventry
27 - 29 October	Disinfection By-products	Mulheim
tbd	CPD event	tbc
12t November	Priority Substances & Water Policy	SCI London
March	Laying Pipes in Contaminated Land	Source Skills Centre, Sheffield



First announcement and call for papers

DBP 2014^{eu}
Disinfection By-products
in drinking water

DBP 2014

Disinfection By-products in drinking water

27th-29th October 2014
Municipal Hall, Mülheim an der Ruhr, Germany

www.DBP2014.eu

 IWW



 SCI
SCIENTIFIC COMMITTEE
FOR DRINKING WATER



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Membership

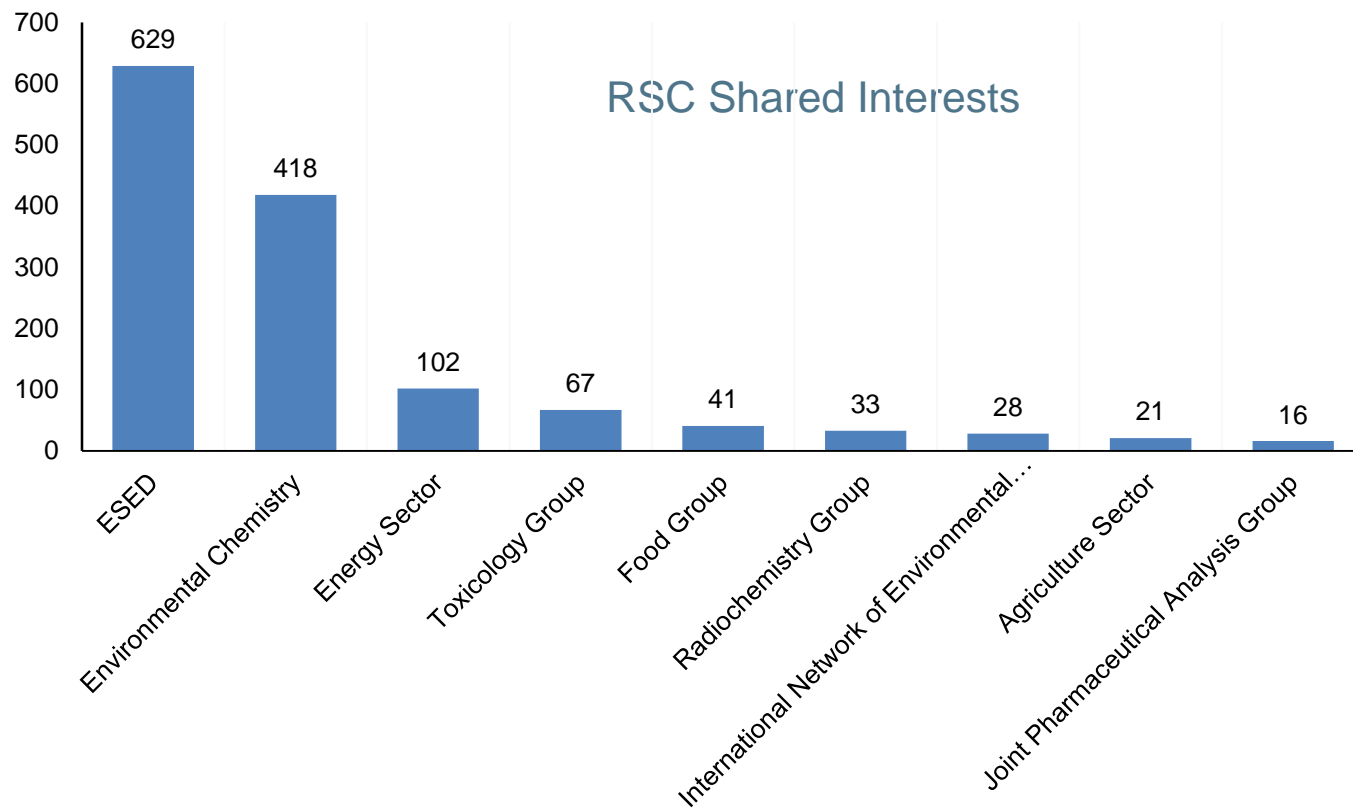




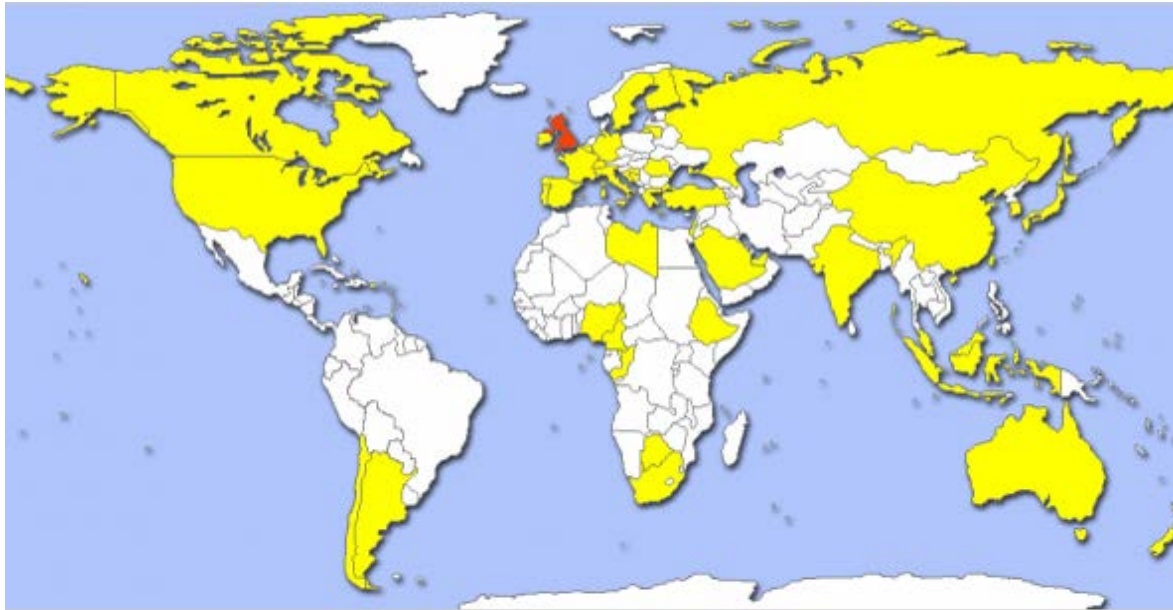
OUR Community

- 879 members, 30 countries
 - Wider network within RSC
 - Close links with industry and academia
 - Water Sector Corporate Partners
 - Affinity Water Ltd,
 - Alcontrol Labs
 - Northumbrian Water
 - Northern Ireland Water
 - Scottish Water
 - Severn Trent - Analytical Services
 - South East Water
- 

RSC Water Science Forum Statistics



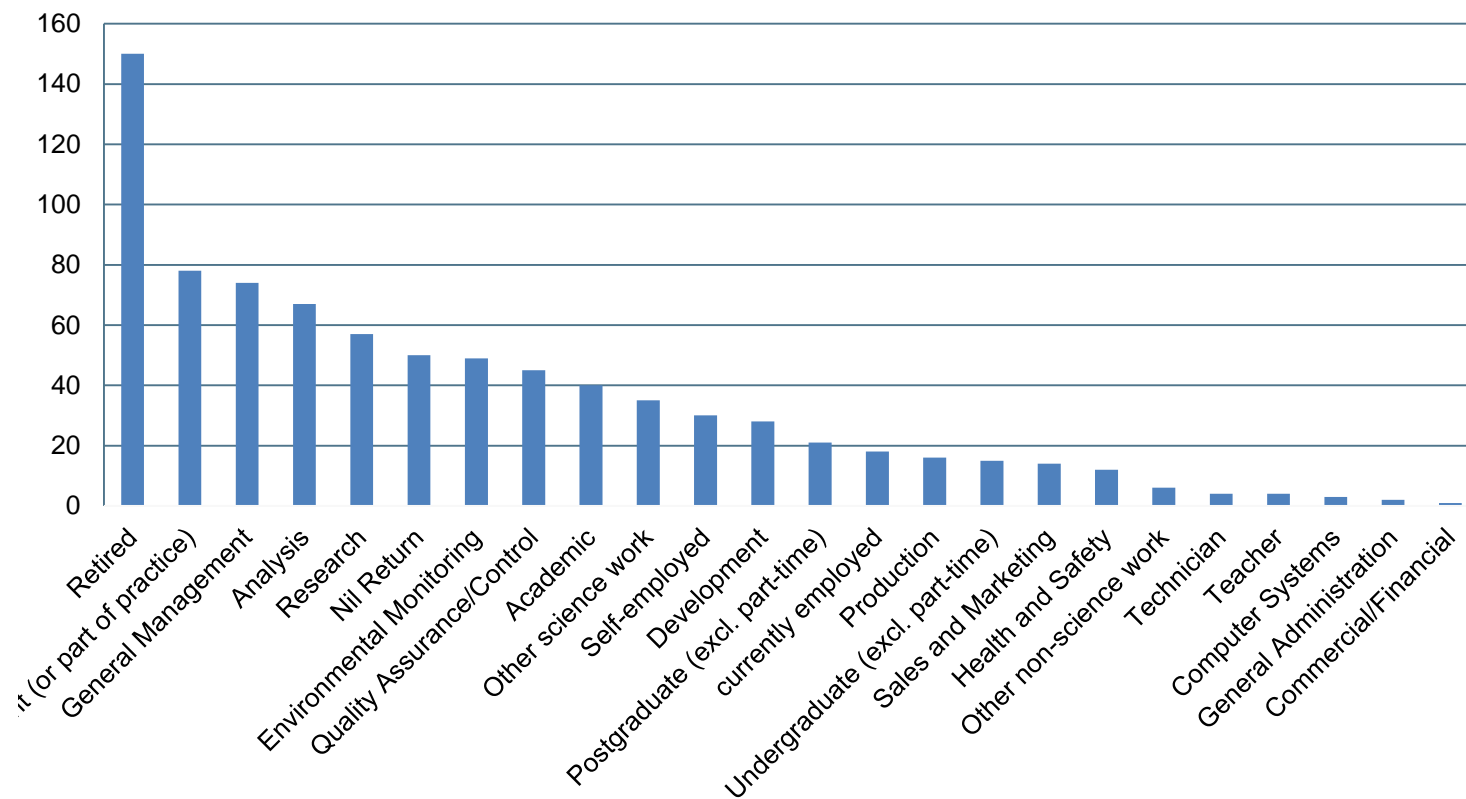
We are not just UK!!



Colour	Individuals	Number of Regions
	0	199
Yellow	1 - 177	44
Orange	178 - 355	0
Dark Orange	356 - 533	0
Red	534 - 711	1

RSC Water Science Forum Members by Job Type

No by Job Type





Want to join us!

Then find out more at:

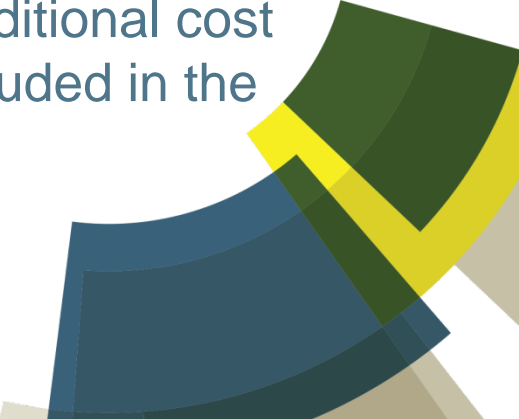
<http://www.rsc.org/Membership/Networking/InterestGroups/WaterScience/>

http://www.rsc.org/images/WaterAppForm_tcm18-221447.pdf

Fill in application form (I have some with me!!)

Membership is open to professional, associate and affiliate members of RSC

The cost is £10 per year although can be taken at no additional cost as one of the three free interest group memberships included in the annual RSC subscription fee





RSC- WSF Committee


Our Current committee has all members from different backgrounds:

Regulators / Environment Agencies / Consultants/
Academia / Retired members/ Student Rep etc.

We want to hear from YOU

Especially if your field of interest is concerned with new and emerging technologies, or if you feel an area is ignored!!
AND we are particular keen to have more young people and under represented groups join us!





Please contact any one of us here today, or the WSF
Hon. Secretary If you would like to join our committee

Contact and Further Information:

[Membership Department](#)

Thomas Graham House, Science Park, Milton Road,
Cambridge, CB4 0WF

Tel: +44 (0) 1223 432 141



Hon. Secretary

[Dr Roger Wellings FRSC](#)





Thank You we hope this event was both interesting and informative



Helen Keenan
Vice Chair

Kevin Prior
Chair



Gillian Williamson
Committee Member

