

CEG SEMINAR REPORT
on
Undergraduate Chemistry – the Way Forward
Thursday 30 October 2003

48 People attended

Sir David Harrison, Director of The Salters' Institute, welcomed participants and introduced the seminar

Mr Richard Homan, Chairman of the CEG, outlined some of the Salters' activities

Four presentations were received

1. Professor David Phillips – Scene Setting – Facts and Figures
2. Professor Colin Creaser – Foundation Degree in Chemistry at Nottingham Trent University
3. Professor Brigid Heywood – Outreach to Schools – Examples from University of Keele
4. Dr Derek Raine – i-science course being introduced at University of Leicester

Discussions then took place on seven tables.

Three questions were posed and participants were asked to identify what employers, higher education and schools could do to address the following questions :-

1. Is there sufficient diversity of higher education courses in chemical sciences in the UK? Do current courses meet the needs of students and employers? If not list areas that need to be addressed by:-
2. How could the marketing of chemical sciences courses in higher education be improved?
3. How can the employment prospects that a degree in chemical sciences offers be better promoted to young people and their parents?

Dr Tony Ashmore then summarised the discussions from the seven tables.

Summary

1. ***Is there sufficient diversity of higher education courses in chemical sciences in the UK? Do current courses meet the needs of students and employers? If not list areas that need to be addressed by:-***

Employers

Are we providing what is wanted?

Don't denigrate current graduates.

Core discipline of chemistry still required by industry

Work experience is important.

Too much diversity – is core being delivered?

Personal traits are more important than degree for some employers.

Higher Education

Geographical distribution important as students need to stay at home.

Do we need so much content?

Bologna – 3 + 2 + 3 could provide flexibility (broad general degree, specialise later)

Need diversity, with subject matter and delivery.

Schools

More good charismatic subject specialists required.
Better mathematics.
Modernisation of laboratories and curriculum.

2. How could the marketing of chemical sciences courses in higher education be improved?

Employment prospects in SMEs as well as big Pharm/Chem need to be promoted.
"What chemists do" needs better communication to young people.
1st year of A level should be targeted for Outreach activities.
HE needs to pull together to market "Chemical Sciences".
Chemistry should be considered as a subject of beauty as well as for a career in chemistry.
National & local champions are needed.
Need to persuade industry that multi disciplinary degrees are useful.
Good environment all the way through - schools, HE, employment

3. How can the employment prospects that a degree in chemical sciences offers be better promoted to young people and their parents?

Promotion of lucrative careers. Ensure they are lucrative – (is there a perception problem or a real problem?).
Diversity of career opportunities should be promoted.
Importance of outreach and careers advice.
Better careers advice.
Better diagnostic tools on career choices.
Showing students what scientists achieve and what scientists do. Good tools are out there we need to make better use of the tools.

Comments from the audience

<u>Paul Walton</u>	Why do 14-19 <u>not</u> choose chemistry. Is there any research on the subject?
<u>Brigid Heywood</u>	DfES – Stoke on Trent – research stated that in school pupils get - 1 year of attention, 1 year they are forgotten, 1 year when they concentrate on GCSE choices. 1000 people on open day. Is there a link between choice of degree and career? Highlight breadth and quality of career with a science degree. Fun not career.
<u>Harry Kroto</u>	Kids turned off by teachers. Need specialist teaching to enthuse. Connexions – creative careers – no science signed by minister for education. <u>We</u> should complain.
<u>Colin Osborne</u>	ETB – has just published a study across the whole of SET. RSC is pulling out Chemistry information.
<u>Trevor Evans</u>	What makes students take chemical engineering IChemE carried out a MORI poll. Chemistry A level OK. Chem degree not attracting good A level chemists.
<u>John Evans</u> (<u>Southampton</u>)	Medical schools may cease to require A level. Could have significant affects in recruitment into A level chemistry.
<u>Keith Smith</u> (<u>Swansea</u>)	Geographical location - competition (coca cola effect) is good. Recruitment damaged by promoting notion that only a small number of HE Chemistry being required. Chemistry

should be in every University therefore it is important to say we need chemistry departments.

John Holloway

Money, perception of earnings General Practitioners earn £55k pa.

Derek Denby
6th form college

Teachers in schools & colleges are used to changes. There have been significant changes in the 14-19 area. Does HE respond to the changes that are happening lower down the system? Presentations showed diversity and different needs. We need different solutions for the different problems.

Mike Pilling

Never mind quality feel the width. Chemistry relies on body of facts. Diverse subject. Rote learning rather than understanding because we have too much content in chemistry degree. Need to develop understanding and solve problems.

Tom Swan

If we are to keep and attract chemists, make subject exciting. Need to educate in the application of chemistry.

John Holloway

Don't need to make it exciting – it is.

David Moore

Science is exciting. Berkshire survey, interest in pre-16. Pupils couldn't see where science was going. Need better information on how chemistry is used. We are not teaching what scientists do or what science does for us. Communication issue so far as the industry is concerned.

Armit Khandelwat

Continuum of advice, guidance and excitement.

Derek Maitland

Not problem in universities. Do we want number of applications up to 4,000? What are we trying to achieve? As an academic I want this. Forensic science – now taking students from each other.

Libby Steele

Teachers often comment that most students who are making choices for degree courses and universities do not base the choice on what career they intend to pursue as most don't know, they just want to enjoy the 3 or 4 years at university.