

# SCIENCE FOR THE TWENTY FIRST CENTURY

## A CEG SEMINAR

**Salters' Hall**

**Thursday 7 February 2008**

### **Aim**

The aim of this Seminar was to examine the recent development of new GCSE specifications, including *Twenty First Century Science*; to hear of experience in schools of teaching, assessment and pilot evaluation over the past year; and to take a forward look in the light of national policies. The presentations were designed to promote discussion.

### **Participants**

Participation at the Seminar was by invitation, with 53 people attending. These included representatives of the teaching professions in schools and universities, university management, Government departments, Funding Councils, examining and validating authorities, a range of employers, the national press, together with members of the Chemical Education Group (given below).

The Association of the British Pharmaceutical Industry  
The Association for Science Education  
The British Association for the Advancement of Science  
Chemical Industries Association  
Institution of Chemical Engineers  
The Royal Institution of Great Britain  
The Royal Society  
The Royal Society of Chemistry  
The Royal Society of Edinburgh  
The Salters' Institute  
Society of Chemical Industry

### **Welcome**

The attendees were welcomed by Dr Richard Homan, Deputy Chairman of The Salters' Institute and Chairman of the Chemical Education Group. Sir David Harrison, Director of The Salters' Institute chaired the Seminar.

### **Overview**

Professor Robin Miller, the Salters' Professor of Science Education at the University of York set the scene for the Seminar by providing an overview of the developments, since the publication of the "Beyond 2000 Report", in the teaching of science, particularly at GCSE level.

### **Presentations**

The overview was followed by short presentations to illustrate experience in schools of teaching, assessment and pilot evaluation over the past year and a broader view of the study of science. These presentations were designed to promote discussion about the opportunities for involvement by all sections of the Chemistry community.

Helen O'Connor

Preston Manor High School,  
Wembley

Dr Ezi Papakostopoulos

St Paul's Girls' School, Hammersmith

Sir Roland Jackson

Chief Executive  
The British Association for the  
Advancement of Science

The Seminar divided into small groups which discussed four questions.

#### **Question 1**

- Do the new (post-2006) GCSEs enable schools to provide a science programme that meets the needs of more students? If so, what needs to be done to foster a better understanding among the wider public of the benefits of a more flexible science curriculum?

#### **Question 2**

- Is the 5-16 science curriculum succeeding in producing an adult population that is, broadly-speaking, 'scientifically literate'? If you think so, what would you point to as evidence? If you think not, what do we need to do to move towards achieving it?

#### **Question 3**

- If applied science is as motivating as it seems to be for many students, what can be done to broaden progression routes from GCSE applied science to post-16 science and professional qualifications – and is there a demand for young people that have gained qualifications by this route?

#### **Question 4**

- How far should the kinds of changes to GCSE Science introduced in 2006 influence the teaching of science at Key Stage 3 from 2008? Does the greater flexibility promised by QCA at Key Stage 3 provide schools with an opportunity to develop a more coherent science programme for Years 7-11?

These questions produced lively discussion within the groups which was summarised to give the following recommendations:

#### **Recommendations**

The following recommendations should be made to the organisations that comprise the Chemical Education Group, and more widely as appropriate.

Through activities undertaken individually or co-operatively by the Member Institutions of the CEG and by using their influence to encourage:

- Reduction of focus on assessment
- Relevance of content in the curriculum
- Positive briefing of the media
- Involvement of all sections of the community in science
- Promotion of alternative progression routes into post-16 science
- Changes to the Key Stage 3 Curriculum to foster more enthusiasm for science