

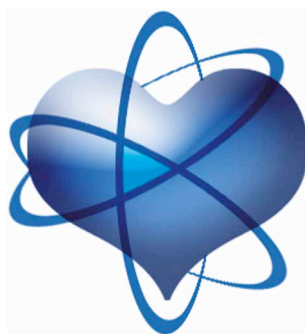
Schools Science Conference 2009

Facing Science in Health and Life

Scientists and Healthcare Professionals

Chairman's Report
& Evaluation 2009

www.science4u.info





The 6th Annual Schools Science Conference - Showcasing exciting careers in science

Thursday 12th March 2009, Kensington Town Hall, London, 9.45am-3.30pm

Chairman's Report

On March 12th 2009, once again Kensington Town Hall (London) filled up with over 450 school students aged 14 to 19, together with their teachers and teams of scientists and healthcare professionals, for the Annual Schools Science Conference. The conference is an educational and enjoyable day out and, over the years, more than two and half thousand school students have learned about many of the diverse and exciting science based careers and opportunities for those who study science.

With over 150 volunteer scientists and healthcare professionals putting on hands-on, interactive demonstrations effectively “selling” their chosen career in something akin to a trade show, the students couldn’t fail to be inspired. The volunteers and students came from all over London. Each year the conference goes from strength to strength with the volunteers finding ever more innovative, exiting and stimulating ways of showing what life is like for scientists. There were many opportunities to get involved and for hands-on participation, donning protective clothing and using simple apparatus like pipettes to complex machines that measure blood flow in tissues. The students were able to make their own creams and potions, identify specific micro-organisms, gaze down microscopes, explore the workings of the body and much more. There were competitions for students, groups and teachers, and debates on hot topics, such as when and who to screen for disease.

The theme this year was “Facing Science in Health and Life” allowing the presenters to look back to important discoveries and to face forwards to new developments. The opening plenary session was an inspirational presentation from Dr Kevin Fong about the importance of “Blue Sky Science” for many life-changing inventions and developments. He told the students about his own background, growing up in London, studying astrophysics because his grades wouldn’t let him into Medical School, how he came to be known as “The Rocket Man”, and how, having gone back to study medicine, he ended up exploring space medicine at NASA. Kevin discussed how huge scientific advances depended upon previous discoveries, for example the discovery of the double helix structure of DNA was dependent upon the development of X-ray crystallography. Kevin urged the students to ask questions, go forward, make discoveries and to get into science.

The afternoon plenary session was a very topical presentation about stem cells from Professor Christopher Mason. He discussed the sources of stem cells and the ever-expanding importance of stem cells in health. Chris briefly touched on the ethics of using embryonic stem cells, before going on to describe current research which is showing that adult stem cells can be isolated from various tissues and used to replenish damaged and diseased organs. This topic is covered in GCSE science and A level biology syllabuses and Chris ended by telling the students that, thanks to all the discoveries about stem cells, we are now firmly in the age of regenerative medicine.

In keeping with this year's theme, there was a series of short presentations demonstrating that combining science, medicine and artistic creativity can literally change faces and thereby heal the lives of individuals suffering disfigurement either from birth, disease or injury. This session was put together by plastic surgeons, maxillofacial prosthetists and dermatologists. Dr Sandeep Cliff (consultant dermatologist), discussed his work with an array of case studies, illustrating the effects of sunbathing, cigarettes, alcohol and drugs, with the take home message "to look after your skin". Mr Niall Kirkpatrick (consultant plastic surgeon, specialising in maxillo-facial surgery) showed with before-and-after images of his patients, that he really could change faces. He introduced Sarah Jones (Maxillo-Facial Prosthetist), who described the variety and scope of the work undertaken by prosthetists and the need for combining materials science, engineering, medicine and art to reconstruct faces. Professor Iain Hutchinson (consultant surgeon) gave a fascinating presentation about the work undertaken by the Facial Surgery Research Foundation - Saving Faces. Dr Trevor Coward (consultant in Prosthetic Facial Prosthesis) described his experiences in complex facial reconstruction.

A multi disciplinary team from the Royal College of Pathologists, The Association of Clinical Biochemistry and the Institute of Biomedical Science ran this year's Café Scientifique, focussing upon "To Screen or Not to Screen". Screening programs feature in the current A level biology syllabus, and this was an ideal opportunity for the students to question the experts, and for the experts to hear the frequently enlightening views of the young people.

The conference tries hard to encourage and inspire the students of today to become the scientists of the future. As much as possible, the topics are relevant to the science education syllabus to bring what the students learn in the classroom alive and put into real life context. Feedback from the students and teachers is excellent, and the event now attracts a waiting list for places. Since 2006, the conferences have been self-financing with the organisers

raising the funds from grants, donations and sponsorship. The main sponsors of the 2009 conference were Skills for Health and the Royal Society of Chemistry.

Skills for Health are a body currently developing the educational requirements for the present and future healthcare science workforce, and they see “The Schools Science Conference as an opportunity not only to find out where you can go, but also to promote how you can get there”. The Royal Society of Chemistry see the conference in the context of their own project: “Chemistry: The Next Generation” and they support these events to enthuse the students about chemistry and because most of the healthcare sciences are underpinned by chemistry.

The conferences develop and improve by building upon their past successes. This was recognised by the award of a “Healthcare Science Oscar - *Healthcare Science Ambassadors of the Year*” from Professor Sue Hill, the Chief Scientific Officer at the Department of Health. While the students are probably unaware of the significance of this prestigious award, they certainly know that there are many more careers in healthcare than doctors and nurses. Today they learnt about podiatry, dietetics, pharmacy and physiotherapy to mention a few of the myriad careers represented. They heard about working at CERNE and the Hadron Collider. They can differentiate between x-rays and ultrasound. They made their own lotions and potions. They have visualised blood flowing through the heart and vessels and they may even have worn a “fat suit”. This was an exciting day with lots to learn and take in. This is a student conference with a difference, the volunteers have nothing to promote but their chosen professions, and they do so with originality, clarity and enthusiasm and the London school students are much richer for the experience. This short report cannot cover the breadth and depth of the conference and more information is available on the website www.science4u.info where some of the conference activities continue.

The organising group are keen to hear from any scientist or organisation willing to invest in the Schools Science Conference 2010. If you would like to showcase your profession on the day, or support the event financially, please visit the conference website www.science4u.info for information about previous events and the contact details for the project.

March 2009

Don Henderson

Founder and Chairman of the Organising Committee



Student Evaluation

Approximately 450 students, in years 10, 11 and 12, from 28 schools and colleges attended the 6th Annual Schools Science Conference – Facing Science in Health and life. The following figures show what the students thought about the event, how much they enjoyed it and how beneficial the day was for them.

Not surprisingly, for students attending such a conference, science subjects and mathematics scored highly for their favourite school subjects (Figure 1). There was almost unanimous agreement that the conference changed their perceptions of science (Figure 2) and encouraged them to study science in order to pursue a science based career (Figures 3 & 4). The most popular subjects to study were Biology and Chemistry (29% & 23% respectively, Figure 5), followed by Physics (13%), Healthcare 12% and Forensic (9%).

The vast majority of students (93%, Figure 6) enjoyed the event, finding it exciting (Figure 7) and directly applicable to their own studies (Figure 8). The students really enjoyed meeting the scientists (Figure 9) and found the presentation (Figure 10) and interactive stands (Figure 11) exciting.

The conference greatly changed the students' opinions about scientists and healthcare professionals (Figure 12 & 13). All areas of the conference were praised by the students and the hands-on interactive displays were the most popular part (Figure 14).

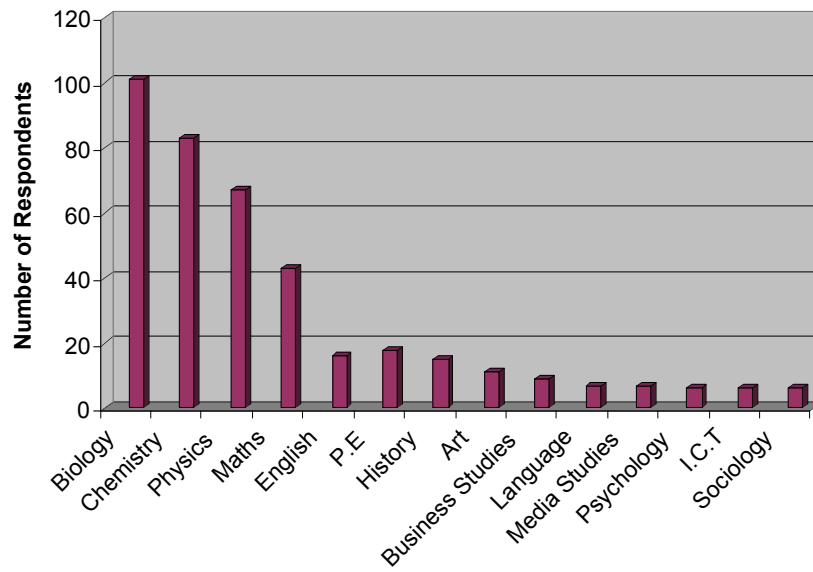
April 2009

Don Henderson

Founder and Chairman of the Organising Committee

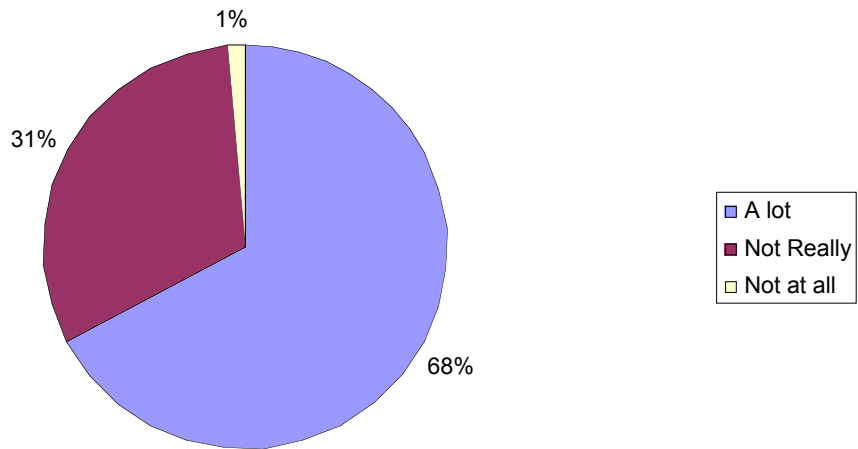
Figure 1

Favourite School Subject



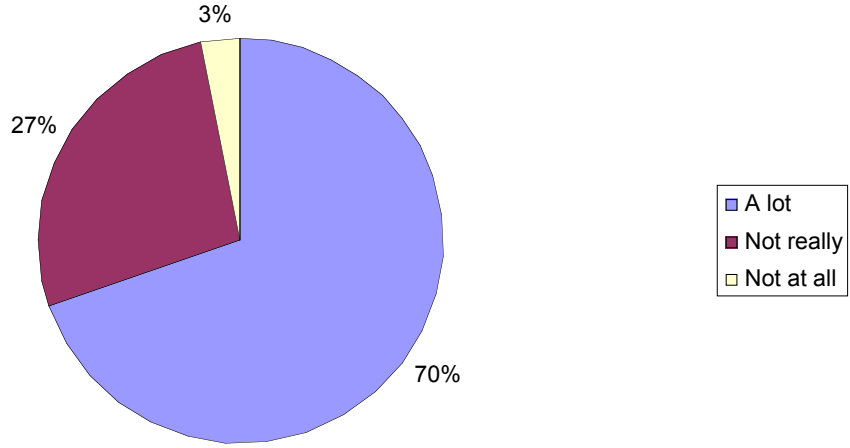
Has this event changed your perception of science ?

Figure 2



Has this event made you consider a science based career ?

Figure 3



Has this event encouraged you to study science at University or Further Education College ?

Figure 4

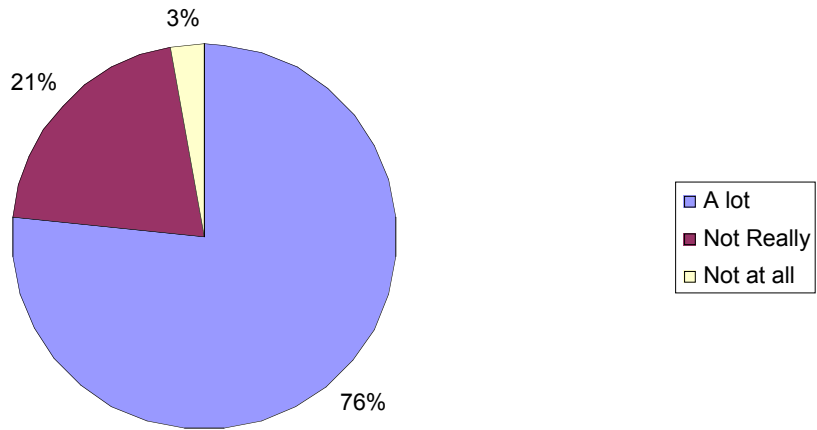


Figure 5

Which sciences would you consider studying ?

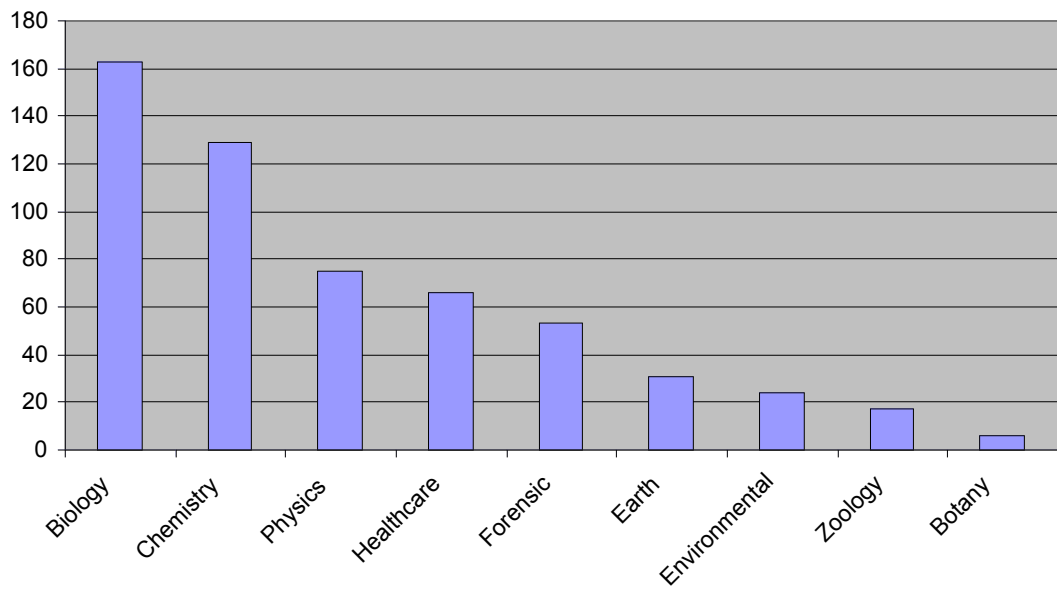


Figure 6

Have you enjoyed today's event ?

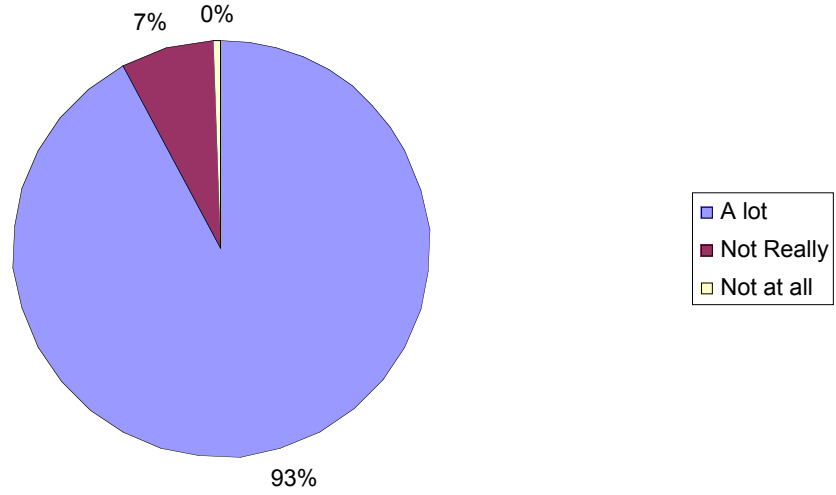
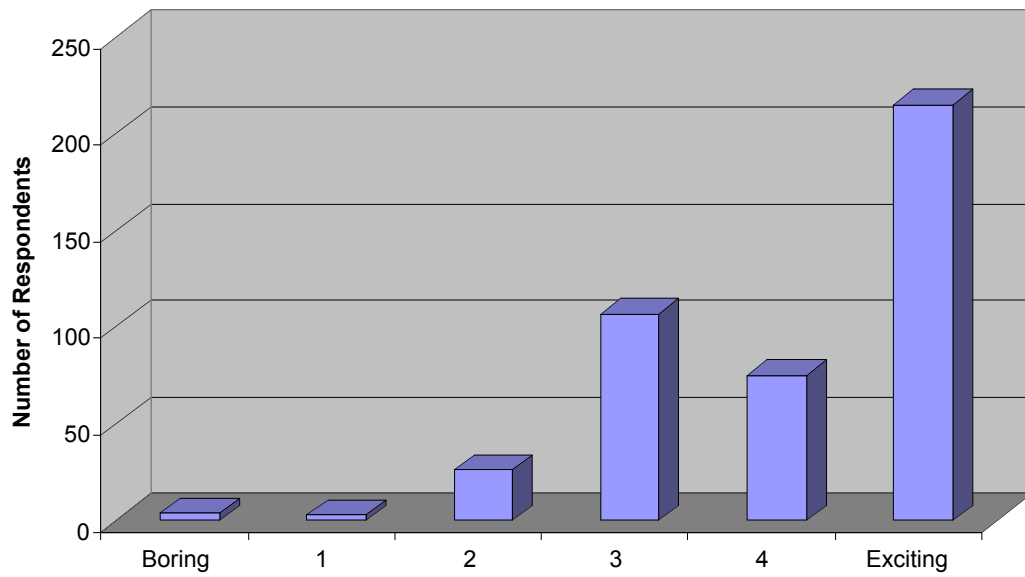


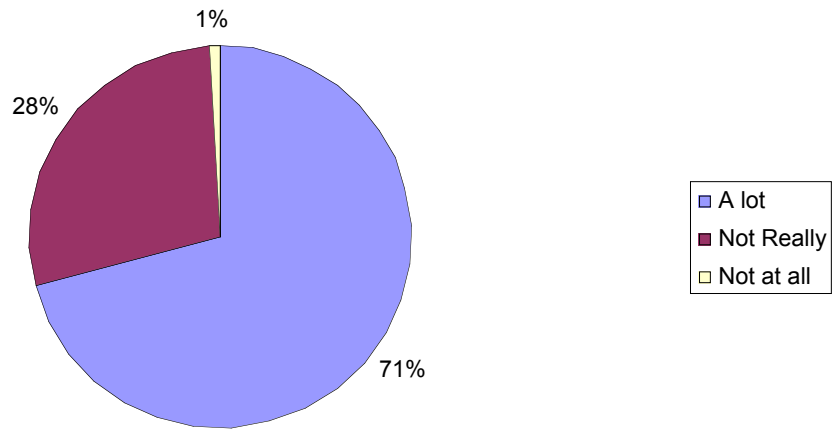
Figure 7

Was today ?



Has today given you information that will help with your studies ?

Figure 8



What do you think about the scientists you have met today ?

Figure 9

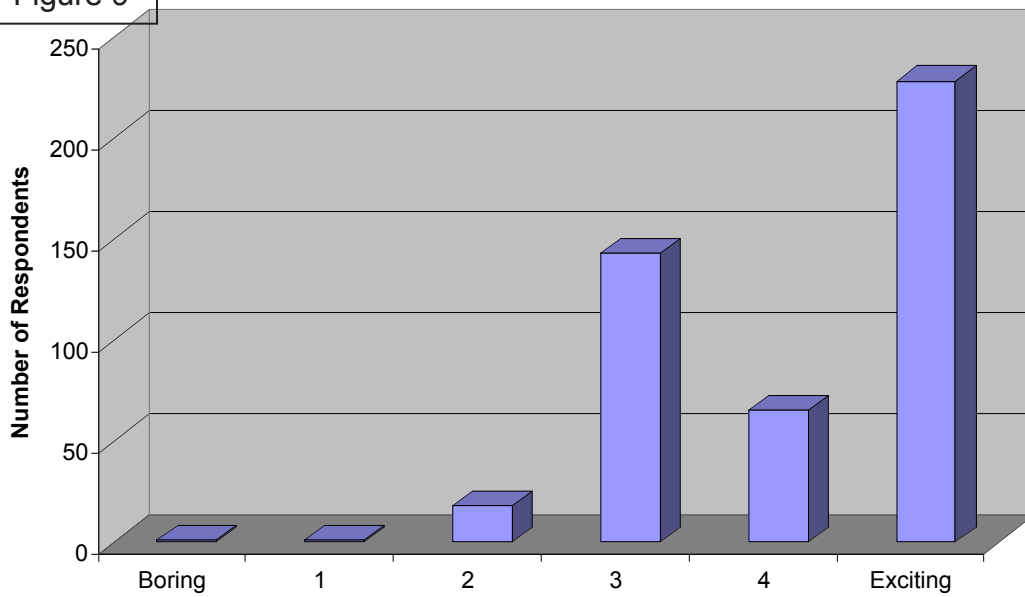


Figure 10

Were today's presentations ?

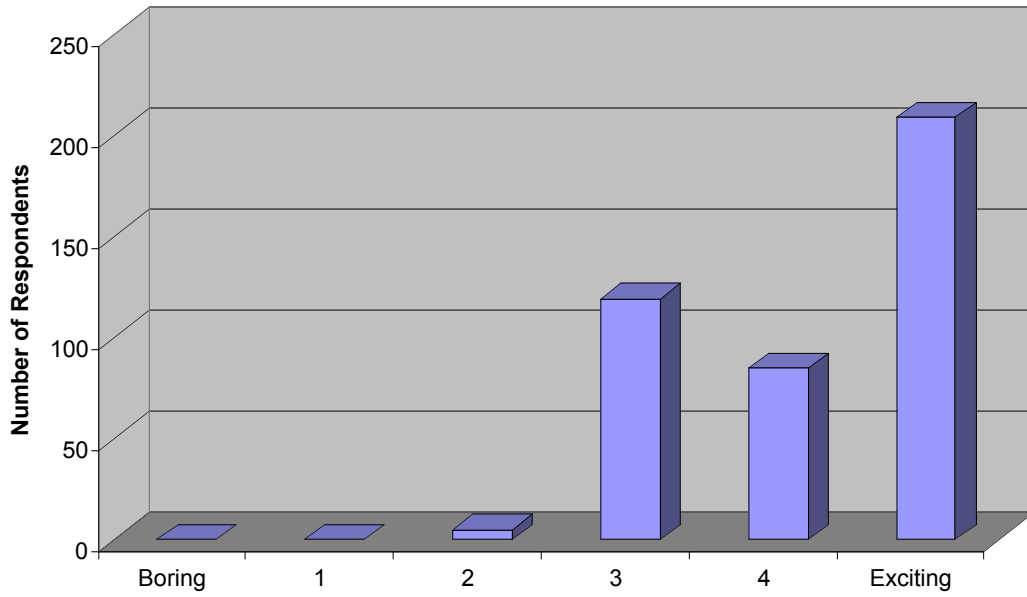
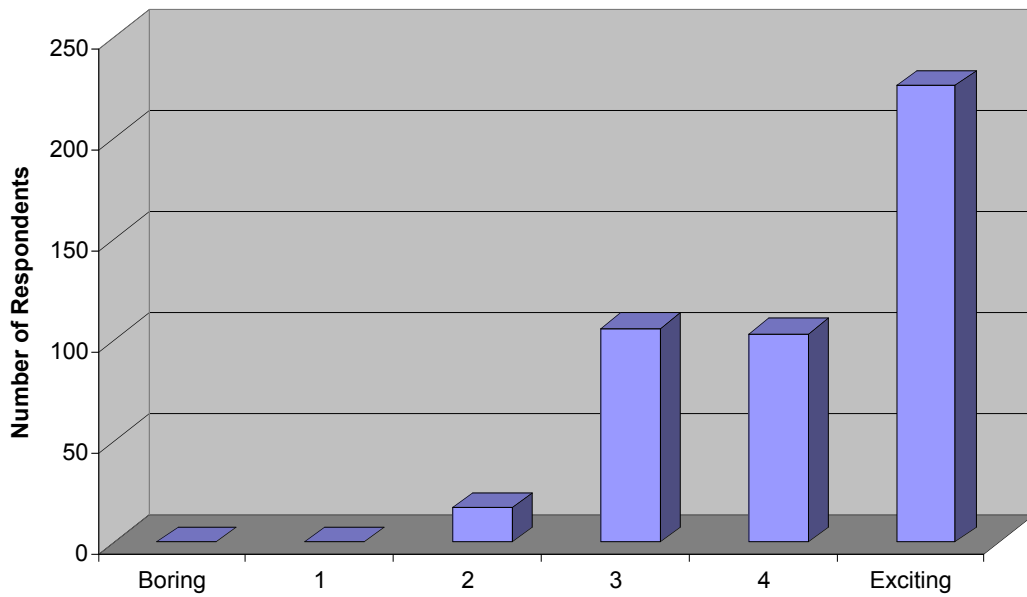


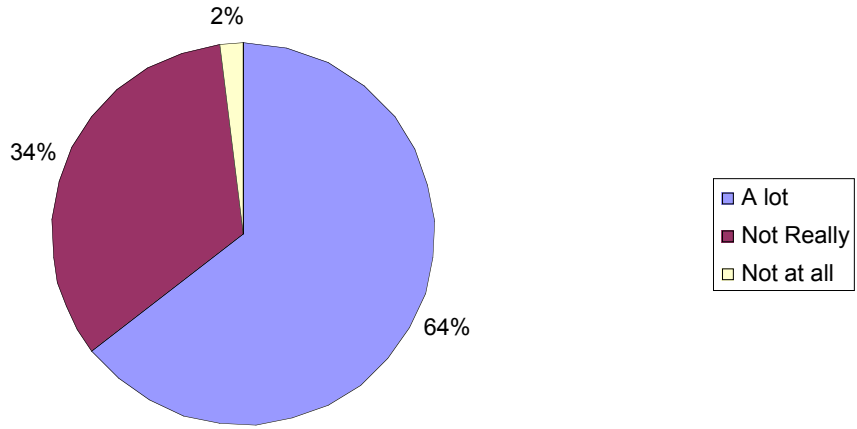
Figure 11

Were the interactive stands ?



Has today changed your perception of scientists and healthcare professionals ?

Figure 12



How would you describe scientists and healthcare professionals ?

Figure 13

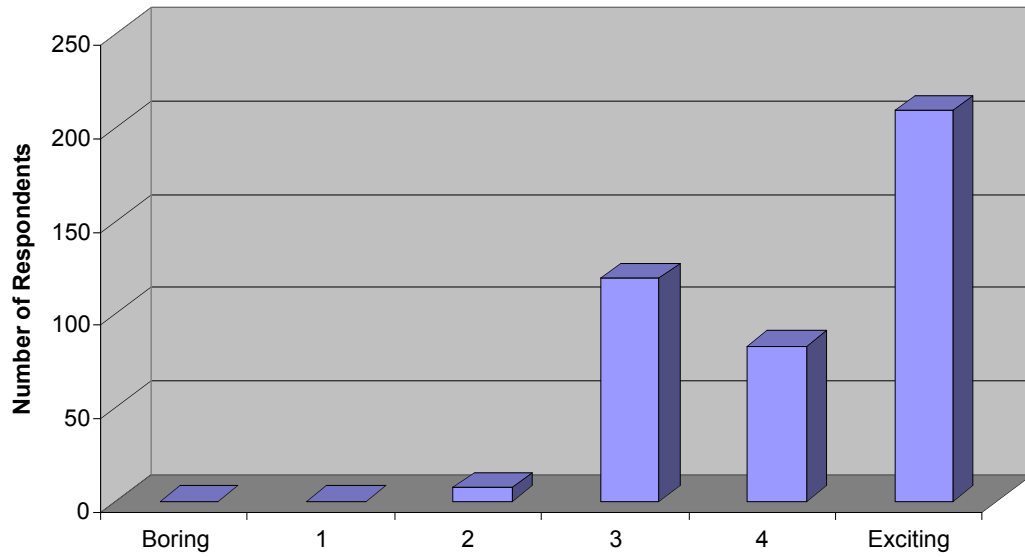
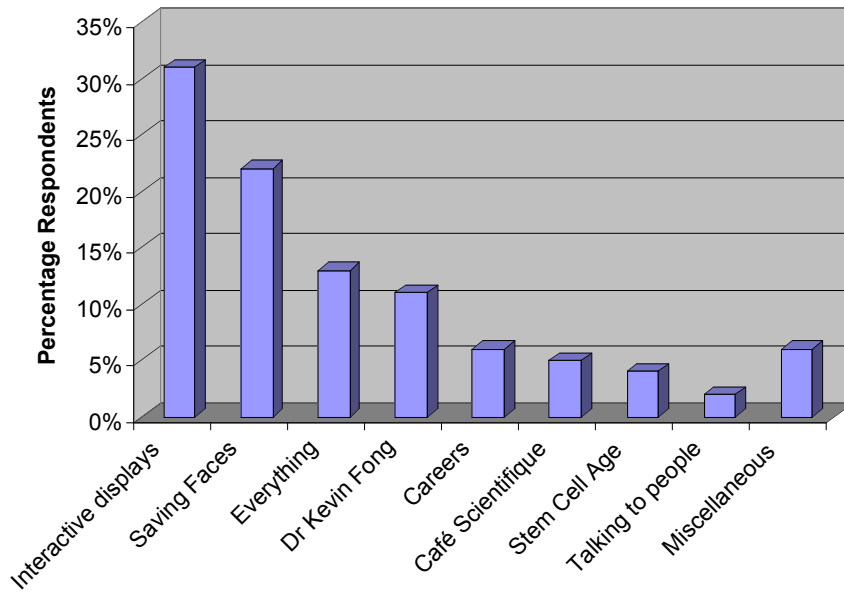


Figure 14

Most interesting part





Teacher Evaluation

Teachers from 28 schools and colleges from across London, predominantly NW London, brought groups of year 10, 11 and 12 students (Figure 1) to the 6th Annual Schools Science Conference – Facing Science in Health and Life, held at Kensington Town Hall on March 12th 2009. The following figures give their impression of the day.

The vast majority of teachers (27/28) reported that the event was useful to them and their students (Figure 2). Most of the teachers (74%) reported that these conferences have an important influence on the career aspirations of their students (Figure 3) and in motivating the students to study science (Figures 4 & 5). Over half of the teachers knew of instances where the conferences had motivated students to choose a career pathway into science (Figure 6).

A significant proportion of teachers (88%) said that they would use the Virtual Laboratory, on the conference website (www.science4u.info), to help with lessons (Figure 7), but only 8/28 had used the conference website. Just over half of the teachers (54%) were aware of the new Diploma in Society Health and Development.

Table 1 lists what the Teachers found most beneficial about the conference.

April 2009

Don Henderson

Founder and Chairman of the Organising Committee

Figure 1

450 Students from 28 Schools & Colleges

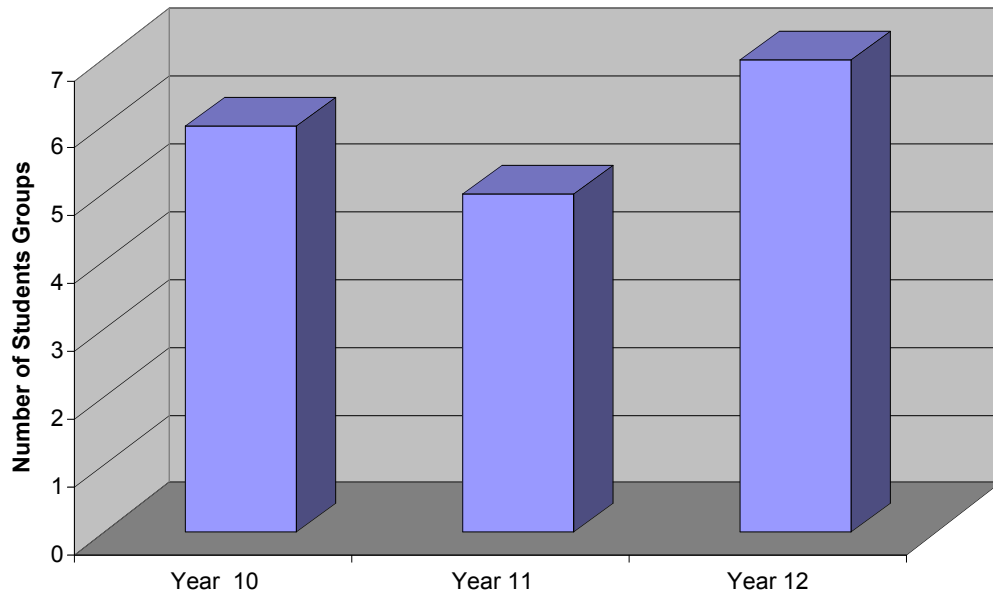


Figure 2

Was this event useful to you and your students ?

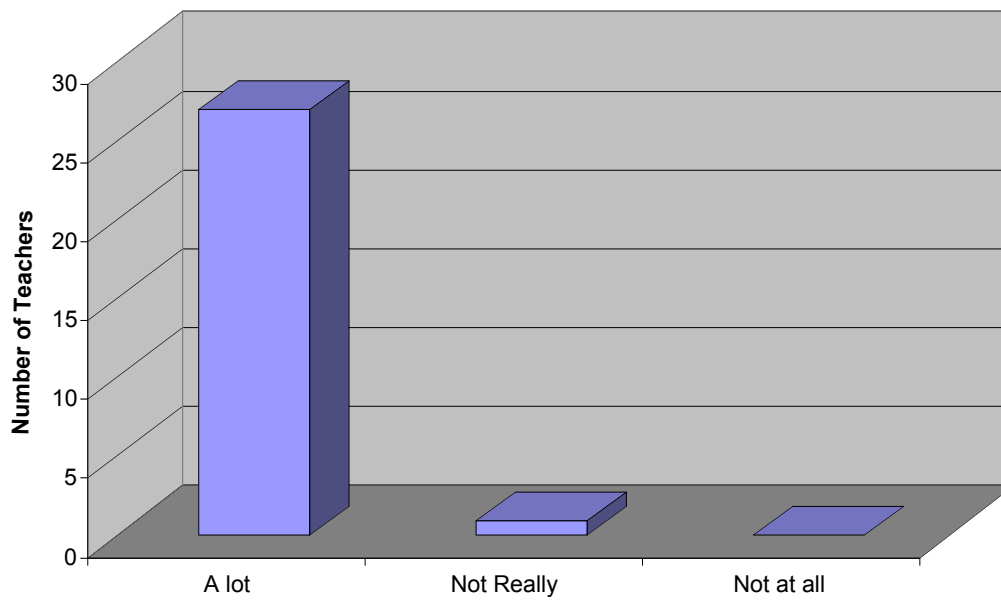


Figure 3

Impact upon Career Aspirations

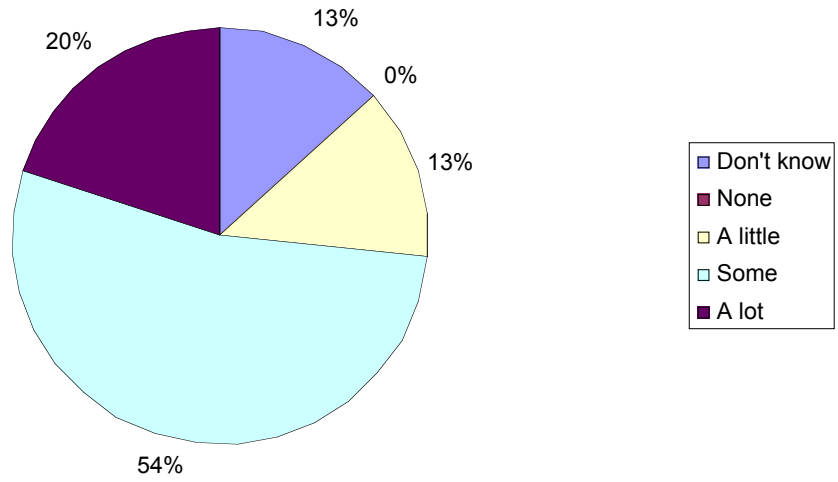


Figure 4

Impact upon Motivation to Study Science

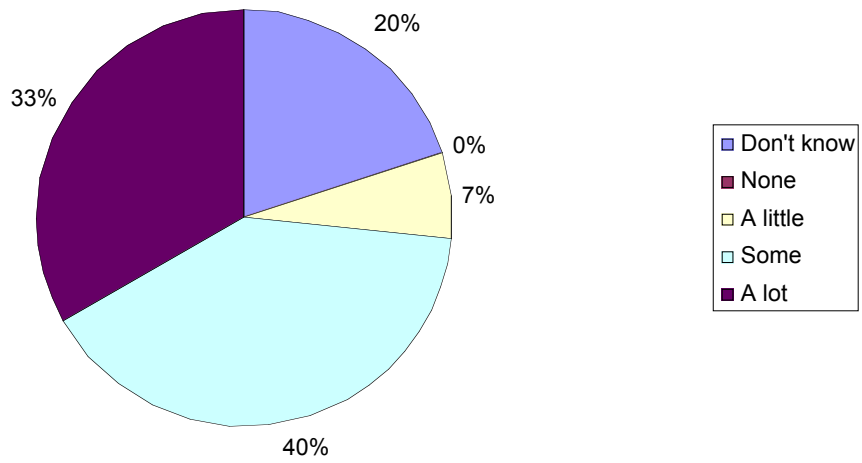
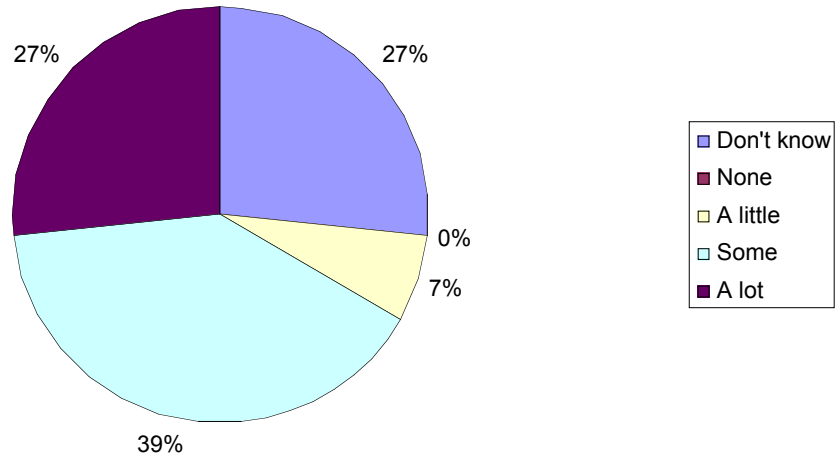


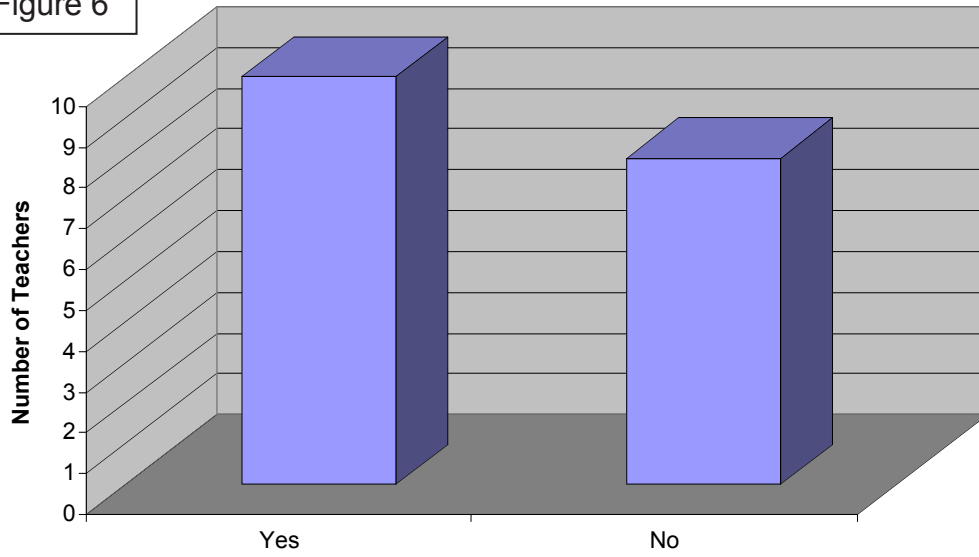
Figure 5

Impact upon Subject Choices



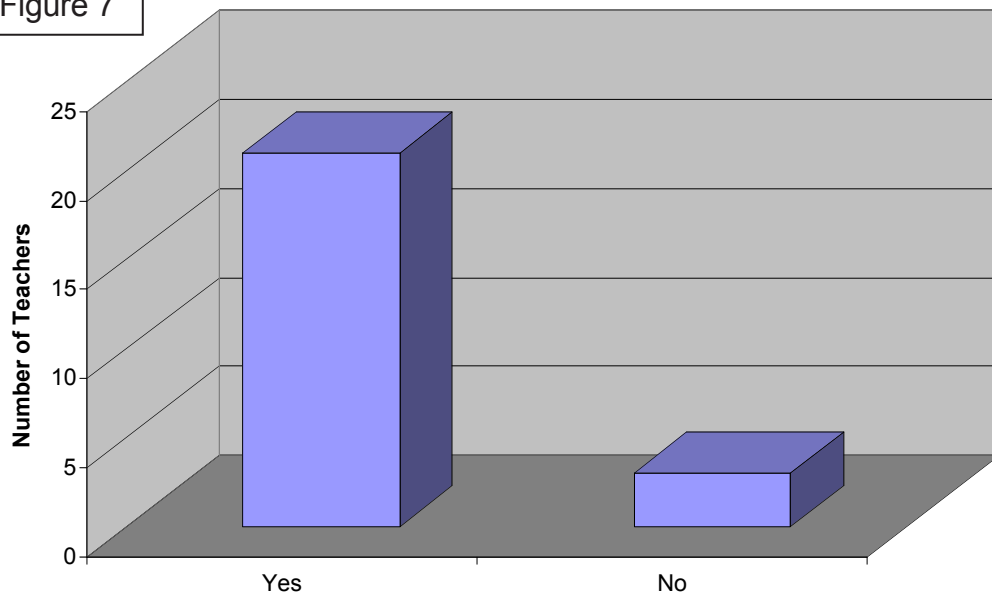
Do you know of any instances where these conferences have motivated students to choose a career pathway into science ?

Figure 6



Will the Virtual laboratory Tour help with your lesson plans ?

Figure 7



Have you used the conference website ?

Figure 8

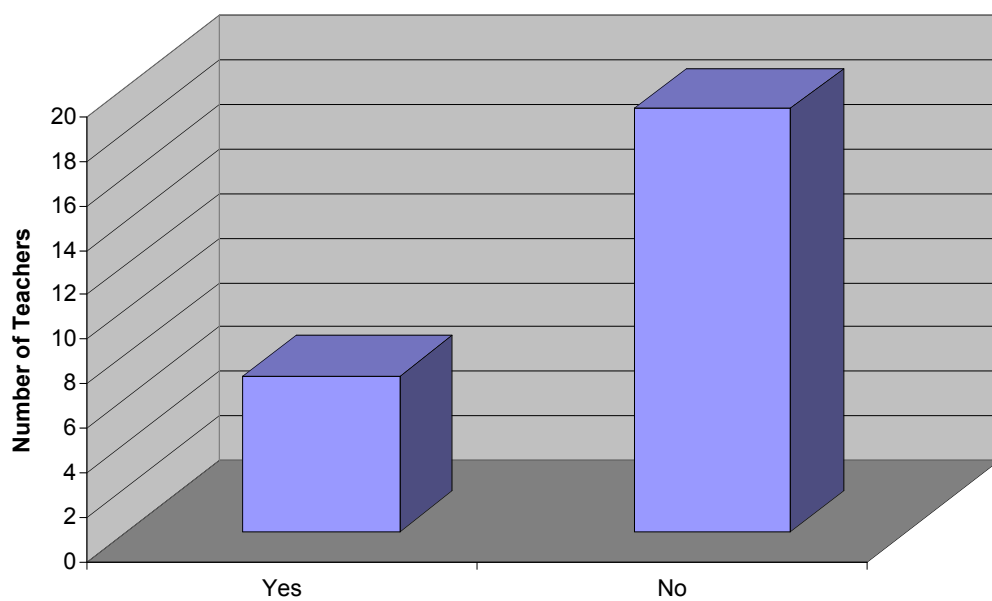


Figure 9

Are you aware of the Diploma in Society Health and Development ?

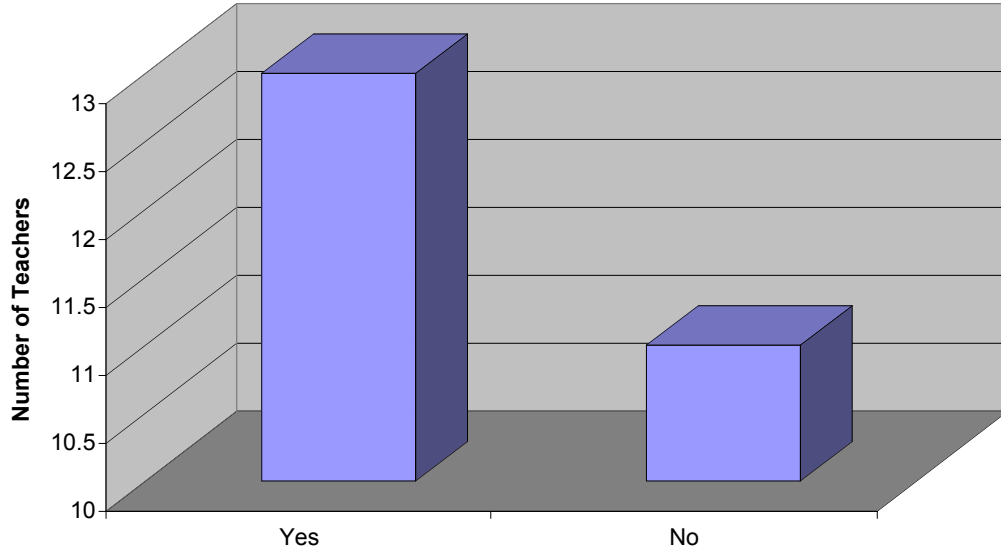


Table 1: What Teachers found most useful about the Conference.

It widens the students knowledge about science
Opportunity to talk to different professional people
Displays
Science lecture of surgery
Meeting people working in science
The information given by the speakers
Interactive activities
Meeting the scientists and university representatives
University contacts and different professionals
Facing science in life
Variety of careers shown
Stands and lectures
Speaking to scientists from different fields
Lectures and talking to medical professionals
Lectures and demos
Different aspects of science
Prospective medical students
Just about everything!!
Almost everything
The talks in smaller groups/activities
All of it
The talks, the plastic surgery was very well received!
The new technologies that can be applied in medicine
Information
Speaking to the presenters at the interactive stalls
Highlighted career pathway