

## **Bristol ChemLabS and Outreach Work in South Africa 2008-2010**

Bristol ChemLabS Outreach seeks to promote Chemistry through its many engagement activities. Activities involve primary school pupils, secondary school students and the wider public. Wherever possible, Bristol ChemLabS works with partner organisations such as universities and other professional bodies to this end. The projects undertaken in the last 3 years in South Africa are examples of this.

There have been three main projects in the last 3 years:

- Scifest Africa- Africa's biggest Science Festival which is based in Grahamstown, eastern Cape
- Rhodes University: A joint Outreach programme with the Chemistry Department there.
- The training of Science centre Demonstrators-based at the Sci-Bono Science Centre Johannesburg.

Additionally there have been lectures given on Bristol ChemLabS teaching of undergraduates and on chemistry outreach at 6 South African universities.

### **1. Sci-Fest Africa**

Each March from 2008-2010 Tim Harrison and Dudley Shallcross perform the lecture demonstration 'A Pollutant's Tale' Sci Fest Africa in Grahamstown, South Africa. Their attendance is co-sponsored by the British Council. They presented several performances to a total audience of around 3,500 students, teachers and members of the public each time.

The networking opportunities with other major science presenters from around the world have been advantageous. It was the attendance at this festival that has led to the other major engagements.

### **2. Chemistry Outreach in Conjunction with Rhodes University, South Africa**

Following on from a meeting at Rhodes University South Africa by Bristol Chemists in April 2008 a strong relationship of cooperation in outreach activities has developed.

In September academics and postgraduate chemists from Rhodes visited the UK to look at aspects of Bristol ChemLabS Outreach activities from 07 to 13 September 2008 to gather information about its outreach engagement activities. The fact-finding trip helped them further develop their own outreach programmes to employ in disadvantaged schools across South Africa's Eastern Cape.

During the week the group observed a number of outreach activities, including a Primary Science Visit at St Annes' Junior School, Bristol, spectroscopy tours for Y13 chemistry students and the summer school for Spanish students. The party also visited Badminton School and the Science Learning Centre. They were sponsored by Sassol.



This was followed in October by a 3 week visit to Grahamstown by two young Bristol Chemists to work with Rhodes' Chemistry Department especially final year honours students and postgraduates in a series of lectured demonstrations and practical workshops, mainly with township schools. The lecture demonstration 'A Pollutant's Tale' and primary chemistry workshops are now being used in the Eastern Cape regularly. That series of activities involved ten schools amongst 8 townships schools, 20 teachers and 593 students from grade 7, 8 and 9. A total of 20 Rhodes Chemists also took part.

*'Bristol ChemLabS and your brand of community engagement has definitely left an indelible mark on this Department and science teaching in Grahamstown which will remain for years to come.'*

Prof Mike Davies-Coleman Head of Chemistry, Rhodes University, Grahamstown, South Africa

It is not just the football world cup that is happening in South Africa. Bristol ChemLabS Outreach links with Rhodes University on the Eastern Cape is expanding the audience of 'A Pollutant's Tale'. Postgraduate chemists at Rhodes have just delivered five performances of the lecture demonstration on climate chemistry and atmospheric chemistry to a total of 252 learners during the 5 days of a Focus Week on 'exploding Myth'. The schools participating were: Nombolelo High SDA Primary Kingswood College Samuel Ntsiko Good Shepperd Khanya Maths and Science Club

Professor Michael Davies-Coleman, Head of Department of Chemistry at said of the outreach programme team *'I am proud of your efforts and undiminished commitment to what, in my opinion, is one of the most worthwhile programmes emanating from this Department.'*

### 3. Sci-Bono Science Centre Visit: 'Bristol ChemLabS Supporting South African Science Education'

Tim Harrison spent a week in January 2010 at the Sci-Bono Science Centre in Johannesburg working with demonstrators coming from science centres across South Africa delivering workshops and training sessions. Tim trained over 20 demonstrators to deliver both lecture demonstrations and practical workshops in both their own centres and in the township schools to disadvantaged young learners.

The ever popular lecture demonstration 'A Pollutant's Tale', created by Dudley Shallcross and Tim and already presented over 700 times and Bristol ChemLabS primary outreach workshops, were the foci of the training. The demonstrator team at Sci-Bono are committed to delivering their own versions of this lecture daily at the centre.

Whilst in Johannesburg Tim performed or assisting others in the performing 7 of 'A Pollutant's Tale' to 1000+ secondary school learners, 45 primary school learners and 150 members of the general public at the Sci Bono Science Centre. This included the ~270 students who saw 'A Pollutant's Tale' in two township schools in Soweto.

The other centres involved in the project were: Osizeni Science Centre, Delta Environmental Centre, University of Venda, MTN Science Centre (Cape Town), Arcelo Mital Science Centre and Witwatersrand University.

The visit was co-sponsored by the Royal Society of Chemistry (South Africa) and the Sci-Bono Science Centre.

The following are the statistics for Pollutant's Tale delivered in the two months subsequent to the training:

February 2010:

- 240 Grade 12 learners (Sci-Bono Supplementary learners from 2nd -5th Feb)
- 153 Grade 10-12 learner (For Trac lab from 2nd -- 4th Feb)
- 198 people (public + learners)

March 2010:

- 398 Grade 12 learners ( Invited by Sci-Bono from 1st -- 5th March)
- 435 High school learners (for Vacation programme from 29th -1st March)
- 84 High school learners (From Gauteng Provincial Government holiday programme from 30th - 1st March)

The overall total in the first two months was 1508.



### **The Advantages of Bristol ChemLabS Links with SA**

These are numerous and include:

- 'Doing the right thing' by using expertise to help less fortunate students (and their teachers) see the excitement of/for Chemistry.
- The development and application of grants for joint research projects.

## An Occasional paper from Bristol ChemLabS Outreach

- The development of ‘soft skills’ in the postgraduate and other students involved.
- The wider exposure of both Bristol ChemLabS and University of Bristol brand names.
- The possible recruitment of postgraduates/post docs for Bristol

### Web Links

Sci Bono Science Centre website:  
<http://www.sci-bono.co.za/>

Bristol ChemLabS and South Africa related  
articles in Bristol University News

<http://www.bristol.ac.uk/news/2010/6802.html>

<http://www.bristol.ac.uk/news/2008/5889.html>

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Tim Harrison

Director of Outreach (July 2010)

