

July 2010

The academic year 2009/10 has been an exciting and incredibly rewarding one for the team from Bristol ChemLabS. The School of Chemistry has received wide-ranging praise and recognition of its commitment to igniting a passion for science within thousands of young people, both nationally and across the globe, and remains a world-class environment for the study of chemistry in the UK.

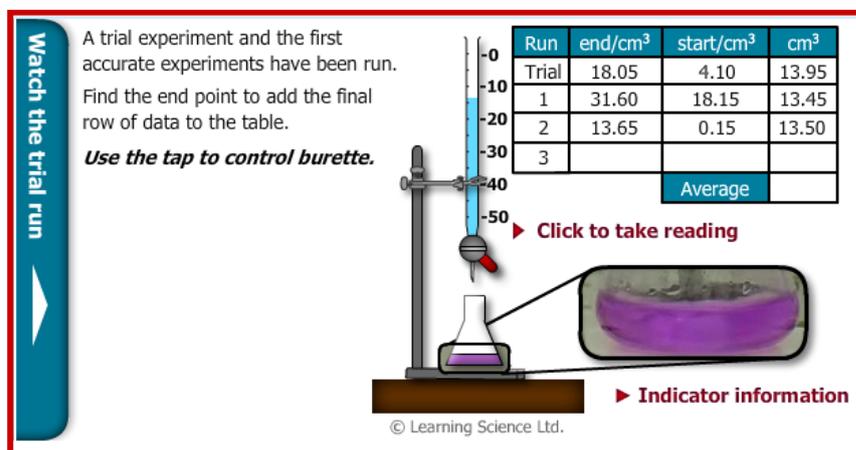
We are delighted to express our thanks for your donations to ChemLabS and its important outreach work. Your support plays a vital role in inspiring the next generation of great scientists, and in demystifying science for every pupil that participates by showing its value and relevance to everyday life.

LabSkills to benefit over 4000 secondary schools

A-level students across the UK are set to benefit from the University's LabSkills software as a result of a new initiative by the Training Development Agency for Schools, which will provide schools with memory sticks containing the pioneering programme.

LabSkills is an interactive, web-based laboratory manual, which has been developed by Bristol ChemLabS staff in association with Learning Science Ltd to improve the practical chemistry skills of Post 16 chemistry students in schools and colleges and support young scientists to succeed.

The new tool, which was recently featured in the Times Education Supplement, meets head-on the call for more practical science in schools by helping students with the skills and knowledge needed to carry out experiments and by building up the confidence to cure 'experiment phobia'.



Watch the trial run

A trial experiment and the first accurate experiments have been run.
Find the end point to add the final row of data to the table.
Use the tap to control burette.

Run	end/cm ³	start/cm ³	cm ³
Trial	18.05	4.10	13.95
1	31.60	18.15	13.45
2	13.65	0.15	13.50
3			
Average			

Click to take reading

Indicator information

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A screen shot showing the type of skills developed by the software

The programme is used in schools and universities in countries across the world, including Australia, New Zealand, Malaysia, Thailand, Afghanistan, South Africa and Canada, and all profits from its sale are ploughed back into the School of Chemistry.

In 2009 alone, nearly 2000 copies were also given to trainee chemistry teachers to boost their own confidence in undertaking experiments.

LabSkills could revolutionise the way science is taught in schools and make pupils more independent.

**Dr Tony Wood,
Worldwide Head of
Medicinal Chemistry,
Pfizer**

Bristol chemist recognised as one of UK's 'unsung heroes of science'



ChemLabS School Teacher Fellow Tim Harrison has been awarded a prestigious new award from the Royal Society for his inspiring engagement work in helping to promote science across the UK.

Tim promotes chemistry through a variety of channels. These include conducting engaging and inspiring workshops across the UK and abroad to school students of all ages, through the organisation of conferences, laboratory workshops, competitions and summer schools. Tim also works to support postgraduate students, teachers, and those training to teach.

“ **Tim's contribution to schools and to school-age students has been phenomenal and this award recognises the scale and quality of what he has achieved...many undergraduates, postgraduates and staff have benefited as a result of having had Tim as a mentor.** ”

Professor Tim Gallagher, Head of the School of Chemistry

Primary schools outreach

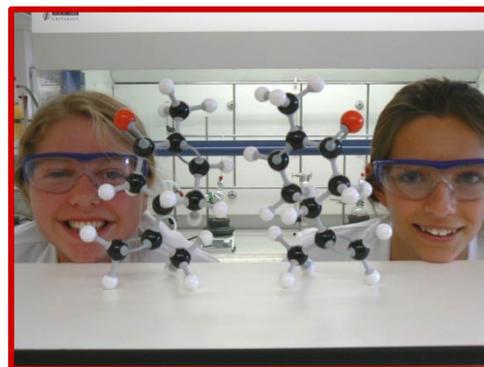
A wide range of exciting, interactive, and inspiring activities have taken place in primary schools across the UK, introducing science in innovative ways to over 9000 pupils of all abilities and ages, as well as teachers and even parents.

The team are kept very busy visiting schools to host Primary Science Visits and Science Days, which have been very well received by pupils and teachers alike with many looking forward to their next visit. Just a few of the activities are highlighted below.

Smelly science

A workshop aimed at engaging 9-10 year-olds who may have become disillusioned with science and maths.

In this workshop, pupils as young as 9 and 10 receive their first exciting opportunity to experience university laboratories to get to grips with fragrance science. As well as watching a lecture illustrated with experiments using liquid nitrogen and dry ice, they are given the exciting opportunity to prepare, bottle, and package their very own fragrance to take home!



“ **Today made me feel like science is a great subject and I want to learn more!** ”

Smelly science learner



Gases in the Air

An exciting lecture where audiences of up to 200 per performance are wowed by frozen bananas smashed to smithereens, monster foam and some big explosions.

Gifted and talented scheme activities

Hundreds of gifted and talented year 5 and 6 pupils from across the UK have been inspired by special workshops, day-conferences and their first visits to a University. Pupils enjoy lectures, demonstrations and activities run by the ChemLabS team and postgraduates at the University.

Other activity themes include Polymers, Thermoplastics – where children investigate strange slime - and colour-change experiments.

**“ You have taught me that science is not just about learning, it’s about having fun!
Thank you again, I hope I can be just like you when I am older. ”**

Year 5 pupil, Janvrin School, Jersey

Secondary schools outreach

Over 15,000 students aged 11-18, along with their teachers, have enjoyed a variety of activities which aim to inspire, enthuse and entertain. As well as hosting workshops at individual schools, the ChemLabS team have welcomed pupils from hundreds of schools into the University’s world-class teaching laboratories as part of the Schools Laboratory Programme to encourage an interest in studying science post-16, and to develop the skills and confidence of A-level students wishing to study undergraduate chemistry. Activities range from afternoon practical sessions to week-long summer schools, and just a few of these are outlined below.

Raising aspirations

The ChemLabS team have given hundreds of GCSE and A-level students a taste of life as an undergraduate chemist as part of various activities designed to raise the aspirations of budding young scientists.

As well as attending the interactive and explosive ‘Pollutant’s Tale’ lecture and getting to grips with analytical chemistry, pupils get the chance to take part in lots of hands-on experiments, including:

- the extraction of caffeine from tea leaves
- infra red spectroscopy
- thin-layer chromatography
- the chemistry of climate change

They also find out what it’s like to be an undergraduate by attending talks organised by the University’s Widening Participation Office and can pick up information on careers in science.

Practice what you teach

Hundreds of teachers from schools across the UK have attended dissemination conferences and master classes run by ChemLabS with the aim of improving their own lab skills and adding more dramatic practicals to their portfolio. We hope that this will enable them to further enthuse their own pupils and spread the message that science is fun.



“ The Bristol Uni Pollutants tale was the best lesson ever! Really inspiring because everyone knows chemistry is challenging and we learnt things easily with visual aids. ”

Year 11 gifted and talented pupil

Food for thought



Tantalising new lectures have been created this year to give students a positive image of chemical sciences by linking chemistry and food.

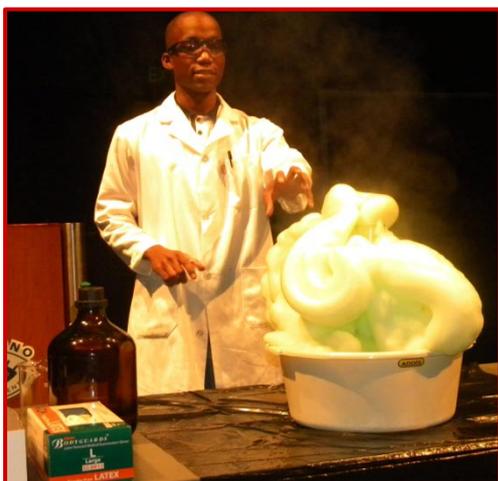
During the National Chemistry Week in the autumn, 340 students enjoyed lectures on 'Molecular Gastronomy' – or the science of cooking – and sampling strawberry ice cream produced by the presenters.

More recently, a pre-February 14th science evening gave 75 post-16 students and their teachers a touch of the chemistry behind typical Valentines' Day gifts. Pupils learned examined the science behind perfumes, before hearing about 'The Chemistry of Chocolate'.

This gives an introduction to some of the chemistry behind chocolate, in particular how fat crystallization can have a drastic effect on appearance and flavour. The session finished with students seeing and tasting first hand the difference between tempered and untempered chocolate.

Summer schools in full swing

Promising young chemists are excitedly descending on Bristol's labs and halls of residence as part of several summer schools scheduled during the summer break, including the joint Bristol-Trinity College Dublin summer school – now in its sixth year – which sees pupils from the UK, Ireland and Malta visit both Universities to get to grips with a host of practical and theoretical activities and talks.



ChemLabS goes global

The impact of ChemLabS outreach work continues to be felt across the globe as the team deliver talks, training and dissemination everywhere from Budapest to Malaysia, Singapore to Australia and Turkey.

One recent highlight saw the team head to South Africa to attend 'Scifest 2010', giving teaching tips on the chemistry of climate change and demonstrating their ever-popular 'Pollutant's Tale' to teachers. Previous work with Postgraduates at Rhodes University on the Eastern Cape has well and truly paid off, with the lecture now being delivered to hundreds of students in the region regularly.

The team look forward to another jam-packed year of demonstrations, conferences and plenty of explosions. Most importantly, we look forward to engaging with and exciting even more young people, teachers and parents about science from the UK and around the world in 2010/11.

Thank you for being a crucial part of our formula for success this year.