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## The two Johns rock!

▲ The two Johns (JS, left) pause before clearing up and reloading the NCBE van – for the 50th time. *John Schollar*

As the number of SGM Basic Practical Microbiology courses sparkles towards its diamond anniversary, the Two Johns, **John Grainger** and **John Schollar**, reflect on their 6 years on the road.

Little did we realize in 2001 when we responded to a call from Janet Hurst and Dariel Burdass to give a series of SGM courses on basic microbiology techniques for secondary school teachers and technicians that, 6 years later, we would still be in business. With the landmarks of 50 courses and 1,000 delegates behind us, and the programme for 2007–08 ahead (see Table 1), we mark the continuing success of this SGM initiative by describing what is involved.

### The preparations

There are 9–10 full-day courses a year, each catering for up to 24 trainees. Most are held in university laboratories thanks to a local SGM member; others take place in university education centres and regional science learning centres. SGM headquarters staff, principally Yvonne Taylor,

deal with publicity, bookings, etc. The cost to participants is subsidised and there is also a contribution to the cost of supply teacher cover. There is no charge for the small number of courses for PGCE students.

The entire practical resources for the courses are commissioned from the National Centre for Biotechnology Education (NCBE), University of Reading. They are assembled by Bene Watmore and transported in the NCBE van, driven by JS, accompanied by JG having pretensions to be navigator. Thus far, the courses have taken us more than 9,000 miles by land and sea.

### The delivery boys

We have worked together for some 20 years, from when JS moved from being Head of Biology at a large comprehensive

school in Berkshire to the NCBE at Reading which JG, an academic microbiologist, had recently co-founded – as an outcome, incidentally, of a previous SGM schools initiative.

### The course

The course is accredited by SGM. It consists of mainly hands-on activities and draws on the SGM's *Basic Practical Microbiology: a Manual* which was written specially for the course. So far, some 4,000 copies of this 40-page book have been distributed on courses and by request (available free of charge), a significant coverage among schools and colleges. There is attention throughout to health and safety issues which are often viewed, quite unnecessarily, as sufficiently daunting to prevent or limit practical work in microbiology.

The day begins with 'The basics', starting with a discussion of risk assessment, followed by a familiarization with equipment and apparatus, culture media, and disinfection (spillages'r'us!) and the use of the autoclave/pressure cooker, all with attention to costs. Then there is experience in aseptic technique, including pouring agar plates, making streak plates and transferring cultures between test tubes by loop (two methods, 'pathetic' and 'professional', as we call them!), and instruction in labelling, incubation and safe disposal.

After lunch, there is advice on maintaining, preparing and using cultures, followed by 'Microbiology in action' which consists of two activities, testing sensitivity to antimicrobials, and Gram's staining method and microscopy. Some of the techniques covered in 'The basics' are reinforced here, but others are also introduced, e.g. using pipettes, forceps and spreaders, and making smears and their examination using oil-immersion.

### The accreditation

An accreditation certificate is awarded for attending the course and successful completion of an assessment. There is a theory test, an open book, multiple-choice test based on the day's course, and a practical proficiency test involving three manipulations that have been learnt during the day, re-done if necessary until competence is achieved. The very few participants who do not pass the theory test are invited to have another attempt later; but very rarely does anyone take up this opportunity.

### The evaluation

Feedback from the evaluation forms is very positive. Members particularly appreciate the hands-on nature of the course as they are more used to enduring a 'sit-and-take-notes-

all-day' format. The course manual and resources pack of SGM and Microbiology in Schools Advisory Committee (MiSAC) teaching support materials and careers information are greatly valued. Participants also appreciate the opportunities to ask us questions and pick up tips, and to share experiences.

There are occasional suggestions for improvement, but more usually the responses are along the lines 'If it ain't broke, why fix it?'. Although it is a very demanding day, particularly for those technicians who have little or no experience of being on a course, comments such as 'The best course I have ever attended' and 'Thank you for a most informative day that was also great fun' – and 'The Two Johns rock!' – are not unusual.

And we thoroughly enjoy ourselves as well!

### John Grainger

Chairman of MiSAC and Visiting Fellow at the School of Biological Sciences, University of Reading. ([e j.m.grainger@reading.ac.uk](mailto:j.m.grainger@reading.ac.uk))

### John Schollar

Co-Director, NCBE, University of Reading ([e j.w.schollar@reading.ac.uk](mailto:j.w.schollar@reading.ac.uk))

### Forthcoming courses

Courses this term are at:

University of Reading – 4 October  
East Midlands Science Learning Centre, Leicester – 13 November

University of York – 12 December

For full details and to download an application form see [www.microbiologyonline.org.uk/BPM.htm](http://www.microbiologyonline.org.uk/BPM.htm)

If you are interested in hosting a course in your lab, contact Janet Hurst ([j.hurst@sgm.ac.uk](mailto:j.hurst@sgm.ac.uk))

**Table 1. Basic Practical Microbiology Courses 2001–2008: around the country in 80 months (clockwise)**

Venues and no. of courses		
Reading (12)	Liverpool (1)	Leicester <sup>b</sup> (1)
Plymouth (1)	Manchester (1)	Leicester <sup>c</sup> (5)
Exeter (2)	Chorley (1)	Birmingham (1)
Bristol (1)	Douglas, IoM (1)	Warwick (1)
Cardiff (1)	Belfast (4)	Hatfield (1)
Swansea (1)	York (2)	London (3)
Aberystwyth <sup>a</sup> (2)	Leeds <sup>b</sup> (1)	Kingston <sup>a</sup> (4)
Wrexham (1)	Leeds <sup>a,c</sup> (6)	Guildford (5)
Northwich (2)	Lincoln (1)	

Totals: 62 courses at 26 venues  
<sup>a</sup>, for PGCE students; <sup>b,c</sup>, different venues.

# In brief

## Big picture on epidemics

Published by the Wellcome Trust, this 16-page A4 booklet gives an excellent overview of the threats to human health from infectious disease. The booklet is attractively laid out, well illustrated and includes case studies and activities. There is supplementary material on the Wellcome website. Single copies are free; class sets are available at a small charge. See [www.wellcome.ac.uk/bigpicture](http://www.wellcome.ac.uk/bigpicture) for details.

## Book review

*The Invisible ABCs: Exploring the World of Microbes*

R.P. Anderson, ASM Press (2006)

US\$19.95 pp. 64, ISBN 1-55581-386-0

This book aims to stimulate interest in microbes and is intended for a young audience – school-age children and younger. As the title suggests, the book is in an alphabetical format, i.e. each letter represents a microbial topic, or organism. This puts tight constraints on the content, which is sometimes stretched and can put information in an illogical order, for example 'lichen' must appear before 'mold'. There are wonderful photographs, which are interesting and attractive, but they can be poorly labelled and credited, and sometimes irrelevant. It is difficult to determine whether the book was intended to be a 'dip in' reference or a bedtime story, either way there are shortcomings. The book has nice touches – thoughtful questions to provoke discussion, an enlightening size scale – but they are not entirely successful. The questions may prove to be difficult for non-scientist parents and the scale, although fascinating, is confusing. The glossary is useful in places, but can repeat information and seems to serve as a holding bay for the things that could not fit into the main section. Poor editing lets the book down overall. The book is wonderfully imaginative and would certainly spark an interest in the subject. If only micro-organisms had evolved to fit the alphabet!

Lucy Goodchild, SGM

## MiSAC competition 2008

*Medicines from Fungi*

Many of the medicines in common use are produced by fungi. Not only do they cure diseases, but they are big moneyspinners too. Patients are often unclear about how the drugs they have been prescribed work and how they are produced. In this competition, sponsored by the British Mycological Society, students in two age groups (KS3 and KS4) are asked to research and produce a factsheet about a drug of fungal origin. There are cash prizes for both the winning schools and students in each category. The closing date for entries is 31 March 2008. Check out [www.microbiologyonline.co.uk](http://www.microbiologyonline.co.uk) for details and to download an entry form or email [education@sgm.ac.uk](mailto:education@sgm.ac.uk) for a competition flier.

## Teacher Scientist Network North East

*Volunteers wanted!*

Microbiologists are needed to partner teachers in schools in the North East of England to offer advice and promote science education. Help is particularly needed in primary schools. This work is very rewarding and fun, and only takes up as much time as the volunteer can spare. Contact Claire Willis for further information ([claire.willis@durham.ac.uk](mailto:claire.willis@durham.ac.uk)).

## BA CREST Awards

Through BA CREST, young people aged 5–19 explore the real nature of science and technology by doing their own creative problem solving through mini research projects. At 11–19, projects are awarded at three levels: Bronze, Silver and Gold, to reflect the hours of work put in. CREST awards are delivered regionally by SETPOINTS and are sponsored by Research Councils UK and Astrazeneca. New for 2007/8, CREST Star Investigators are for younger children, who work through activities in a supplied pack. Full details are available at [www.the-ba.net/crest](http://www.the-ba.net/crest)

