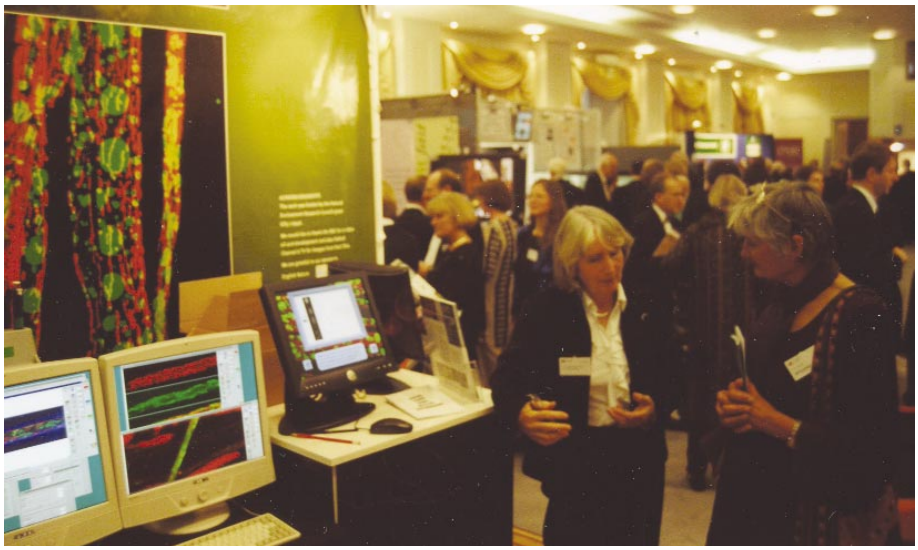
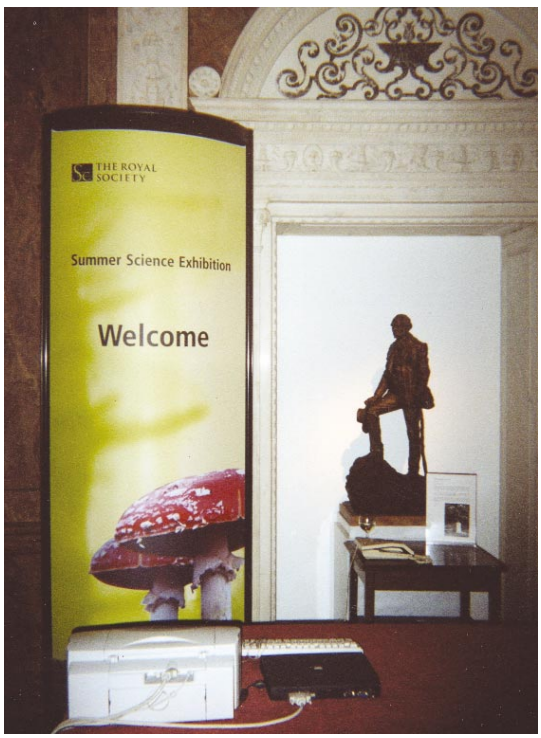
SGM Public Understanding of Science grants of up to £1,000 are available to members wishing to promote microbiology. See **www.sgm.ac.uk** for details and an application form.

The Underground Pulse

Royal Society Summer Exhibition 2002



This collaborative exhibit from Oxford University, Horticulture Research International and Cardiff University (http://www.sc1.ac.uk/discover/pulse.cfm) was based around the reporting of a new method for real-time *in vivo* imaging of the translocation of a 14C-labelled non-metabolized amino acid through the extensive mycelium of the woodland fungus *Phanerochaete velutina*. Earlier this year we had presented the first report of a pulsatile component of amino acid flow in mycelium, which we are currently investigating, funded by NERC. The new discovery was displayed in the exhibit and set in the context of fungal biology at different scales from ecosystem through organism down to cell and subcellular scale. The highly visual nature of the research made for an attractive exhibit, and generous sponsorship from SGM, as well as the British Mycological Society, Horticulture Research International, English Nature, Zeiss and St Hilda's College, Oxford, enabled us to produce an impressive exhibition stand and 1,000 leaflets to show visitors how fungi grow. An important aim was to show that fungi are individual, co-ordinated mycelial systems consisting of hyphae, that they exist as microbes, and that the more conspicuous mushrooms are just the spore-producing part, not the whole organism.



Fluorescent confocal imaging of living hyphae with double labelling of the dynamic vacuolar system and mitochondria was performed on the stand, while a video loop and backdrop explained fungal biology at ecosystem, organism and cell scale. Horticulture Research International staff Drs Kerry Burton and Dan Eastwood showed how mushrooms grow from mycelium, with free samples of spawn and instructions on how to grow your own, and Professor Lynne Boddy of Cardiff University showed live mycelium at work on a realistic woodland floor. Nearly 4,000 visitors attended, including about 2,000 school students, and VIPs from government, industry, the media and research funding bodies.

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TOP RIGHT:
Sarah Watkinson chats to a visitor at the Royal Society Summer Exhibition 2002.

RIGHT:
From left to right: Peter Darrah, Lynne Boddy, Mark Fricker and Sarah Watkinson at the Oxford University, HRI and Cardiff University exhibit.

BELOW:
The entrance to the exhibition at The Royal Society, London.

PHOTOS RUTH WATKINSON

Further reading

Tlalka, M., Darrah, P.R.D., Watkinson, S.C. & Fricker, M.D. (2002). Continuous imaging of amino-acid translocation in intact mycelia of *Phanerochaete velutina* reveals rapid, pulsatile fluxes. *New Phytol* **153**, 173–184.