

SPECIAL INTEREST GROUP — PRACTICAL WORK IN THE BIOSCIENCES

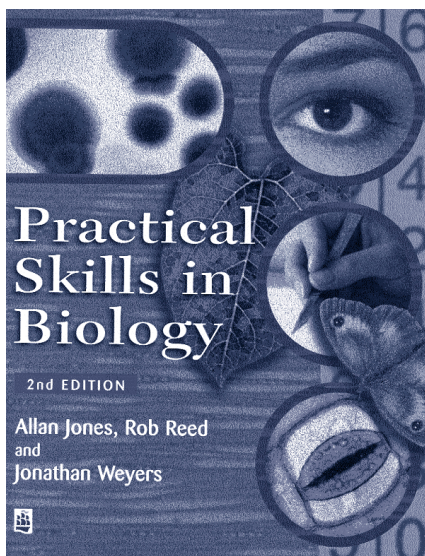
The LTSN Centre for Bioscience has set up a Special Interest Group (SIG) looking into Practical Work in the Biosciences. The Co-ordinator is Allan Jones from the University of Dundee.

MY INVOLVEMENT AS CO-ORDINATOR of the LTSN Bioscience Special Interest Group (SIG) on Practical Work in Biosciences is a consequence of many years of interest and involvement in practical work ranging from laboratory work to field courses, and from protocol-dominated activities to independent project work. These activities stimulated the development and co-authoring of the *Practical Skills* series of textbooks published by Pearson. This now includes separate titles on Biology, Biomolecular Sciences, Environmental Science (which includes ecology) and Chemistry. Through my work with this SIG, I wish to facilitate and develop discussion and debate about the many problems facing practical work in the Biosciences and to help promote the dissemination of good practice and thoughtful implementation and assessment of practical work.

We are all faced with increasingly difficult situations with regards to decreasing curriculum time and available resources for practical work. In particular, fieldwork activities have become increasingly difficult to sustain in the face of a diminishing unit of resource and the increasingly common requirement for students to pursue paid employment. At the same time, the cost of practicals and project-work in many areas of the modern curriculum has become almost prohibitively expensive. We have also to cope with increasingly large class sizes, with the inevitably increased costs, and an increased diversity of the student population in terms of both pre-university experience and modular backgrounds. The nature of secondary-level (high school) practical work has changed, and continues to change, in both character and quantity, e.g. there has been a general reduction in the use of animal materials in most curricula. This significantly affects the assumptions that we can make, and our expectations, when designing a tertiary-level practical curriculum but, in my experience, these changes have not been

sufficiently recognised and allowed for when developing practical work in the biosciences.

The SENDA (2001) [Special Educational Needs and Disability Act (2001) DDA part IV] legislation will also require new thinking about the accessibility and validity of our practical activities. This would seem, therefore, to be a particularly good time for the LTSN Centre for Bioscience Centre to be setting up this SIG as



we are facing considerable challenges that will require both new thinking and new approaches to the roles and functions of practical work in the biosciences.

Bioscience is a term incorporating a disparate collection of sub-disciplines, each with their own perspective on the place and value of practical work within the curriculum. This will provide a significant part of the challenge for this SIG where the aim is to represent all aspects of the subject area. Whilst not wishing to fragment the activities of the SIG and lose the benefits of cross-subject interactions, it is

our intention to organise resources such as the *Compendium of Bioscience Practicals*, supervised by Jackie Wilson (Project Officer), according to either the sub-discipline and/or the pedagogical topic wherever this will assist the reader: cross referencing will be used wherever possible to maintain the integration of the site. The *Compendium* is an important resource associated with this SIG and its specific aim is to encourage and enable the sharing of ideas, experience and good practice in bioscience practical classes. For the latest news on that project, or to contribute material to it, please visit our web site at <http://bio.ltsn.ac.uk/resources/bioscience/compendium/index.htm>. I would ask that you seriously consider contributing to this particular resource.

The current aims and objectives for this SIG are summarised below. They are to...

- » collect and disseminate good practice through the *Compendium of Bioscience Practicals* and through the organisation of appropriate symposia, the first of which *Personal Transferable Skills and Practical Work – Problems and Strategies* is being planned for 7 November at the University of Leeds;
- » encourage and promote the development of cost-effective practical activities – have you designed any practicals that are effective and yet have a relatively small cost requirement? We need you!
- » identify interested persons and their areas of expertise / interest. We are compiling a list of those who have expressed particular interest in this field and it is hoped that they will receive email updates, notification of events, activities, etc on a regular, but not excessive, basis;
- » facilitate discussion of the functions of practicals (experimental, observational,

fieldwork, procedural, manipulative, virtual, C&IT, etc). It is hoped that synchronous and/or asynchronous discussions will be facilitated on key topics.

- » identify and disseminate information on what works and what does not!
- » commission discussion papers on key topics for publication on the web site – but if you have a particular interest in a ‘hot’ topic and would be prepared to write a discussion paper for our web site, please let the team know.
- » encourage debate about strategic approaches to practical work (preparation, group-work, assessment, curriculum development, etc)
- » facilitate informed discussion on important and often sensitive aspects of practical work such as the use of dissection and the ethics of experimentation;
- » discuss and disseminate good practice with regard to disability and practicals / fieldwork;
- » discuss the incorporation and integration of Personal Transferable Skills (PTS) into the practical curriculum;
- » facilitate discussion of the problems of assessing practical work within the concept of constructive alignment of the curriculum; and

» discussing the particular question of the role of peer and self-assessment in practical work.

These activities will be developed mainly through:

- » the web site pages;
- » meetings to be held at sites in both the north and south of the UK;
- » development of discussion areas within an asynchronous or synchronous chat room context;
- » commissioned ‘expert’ discussion documents to stimulate debate on particular topics; and
- » the *Compendium* collection of practical work (<http://bio.ltsn.ac.uk/resources/bioscience/compendium/index.htm>).

I am very keen to develop interactions with other interested persons so if you have any comments or suggestions, please contact me or the LTSN Bioscience team. ■

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ECOLOGICAL PROJECT COMPENDIUM

The British Ecological Society is developing an innovative on-line resource for lecturers and others teaching ecology in Higher Education. The project is currently accepting contributions of successful practical exercises in ecology ranging from examples of student-centred learning and project case studies to more lecturer-directed activities and effective strategies for dealing with large student groups. If you would like to submit work for publication, instructions for authors and more details about the project are available on-line (at www.britishecologicalsociety.org). The Compendium is also seeking suitably qualified individuals to referee submitted work for the quality of the science and the pedagogic approach. You do not need to be a member of the British Ecological Society to contribute to this new resource as an author or as a referee. If you would like to find out more please contact the Managing Editor, Jac Potter, at j.potter@chester.ac.uk

GUIDANCE FOR STUDENT PROJECTS

When conducting final year research projects, the level of guidance and assistance that students receive can vary considerably. Guidance for Student Projects (GSP) is an online learning resource to assist students with the planning, execution and presentation of research projects (<http://bio.ltsn.ac.uk/hosted/gsp/introduction.html>). This resource is targeted at undergraduate students in the biological sciences who are expected to undertake final year research projects. However, the content should be more widely applicable to MSc and PhD students, and to other disciplines.

One of the strengths of GSP is its breadth of coverage of issues that arise during student projects, from the selection of a research topic, the assessment criteria used for dissertations, advice on experimental design and data presentation to the formatting of research reports. The major topic headings in GSP are: dissertation assessment; project management; literature review; experimental design; data presentation; and compiling the report.

Within each of these topic headings a number of relevant issues are presented. So, for example, the section ‘Project Management’ contains suggestions and advice on how student and supervisor should interact, how to plan and schedule a project (including a detailed case study), and highlights important transferable skills (e.g. time management, computing and information management).

Throughout the website, we provide advice and guidance from our own experience as project supervisors and researchers e.g. see the list of common problems in ‘project management’, ‘data presentation’ and ‘compiling the report’. We provide numerous hyperlinks to websites and references to literature that provide quality learning resources for student researchers.

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