

Practical Work in the Biosciences

Resources and information from the Centre on **practical work** are available from www.bioscience.heacademy.ac.uk/resources/themes/practicals.aspx and on **fieldwork** from www.bioscience.heacademy.ac.uk/resources/themes/fieldwork.aspx

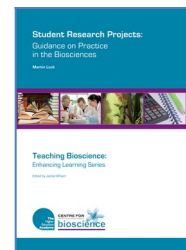
Reports and practice guides



1st Year Practicals: Their Role in Developing Future Bioscientists. This report summarises the main points emerging from a Centre workshop which discussed the topic of first year undergraduate practical work in the biosciences. The report and associated practicals can be downloaded from www.bioscience.heacademy.ac.uk/resources/themes/1styrpracticals.aspx

Improving first year laboratory classes in bioscience - students' views. Results of a survey carried out in order to identify the features of laboratory classes valued by students and therefore help university teachers improve the student experience in laboratory classes. www.bioscience.heacademy.ac.uk/ftp/reports/studentviews.pdf

Student Research Projects: Guidance on Practice in the Biosciences, written by Martin Luck, explores the value of student research in the biosciences, ways of implementing research projects for final year students, and project outcomes and assessment. The guide also contains ten bioscience case studies which cover a range of formats of research project. www.bioscience.heacademy.ac.uk/resources/guides/studentres.aspx



Designing Effective Fieldwork for the Environmental and Natural Sciences has support and ideas for academic and technical staff engaged in the design and delivery of fieldwork in the environmental and natural sciences. The guide is available to download from www.gees.ac.uk/pubs/guides/eesguides.htm

Bioscience Education



Croker, K., Andersson, H., Lush, D., Prince, R. and Gomez, S. (2010) **Enhancing the student experience of laboratory practicals through digital video guides.** *Bioscience Education* 16-2. www.bioscience.heacademy.ac.uk/journal/vol16/beej-16-2.aspx

Gamarra, J.G.P., Ironside, J.E., de Vere, N., Allainguillaume, J., and Wilkinson M.J. (2010) **Research-based Residential Fieldwork Learning: Double Bonus?** *Bioscience Education* 16-6. www.bioscience.heacademy.ac.uk/journal/vol16/beej-16-6.aspx

Bedford, H., Bedford, A., Thomas, J. and Ashton, P. (2010) **An Alternative Approach to Assessing Laboratory and Field Notebooks: The Data Retrieval Test.** *Bioscience Education* 16-c4. www.bioscience.heacademy.ac.uk/journal/vol16/beej-16-c4.aspx

Walsh, C., Parry, D. and Larsen, C. (2010) **Blending Learning: a Novel Assessment Strategy Enhancing Student Learning from Practical Work in the Laboratory.** *Bioscience Education* 15-c2. www.bioscience.heacademy.ac.uk/journal/vol15/beej-15-c2.aspx

Scott, J. and Maw, S.J. (2009) **The Role of the Postgraduate Student in Delivering Bioscience Teaching.** *Bioscience Education* 14-3. www.bioscience.heacademy.ac.uk/journal/vol14/beej-14-3.aspx

Search the Journal for further articles at www.bioscience.heacademy.ac.uk/journal/

Short Guides

The **Creativity Skills Short Guide** has techniques and strategies designed to promote creative problem solving skills in bioscientists which could be used in practical sessions.

www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/creativity.pdf

Student Short Guide – Making the Most Out of Practical Work, advice for students on getting the most out of lab sessions and fieldwork.

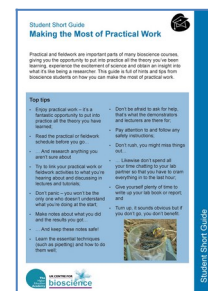
www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/practicals.pdf

The **Postgraduate Demonstrators Short Guide** has hints and tips for postgraduates demonstrating in practicals, on field courses and supporting final year project students in the lab.

www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/demonstrators.pdf

Further resources for Postgraduates who teach are available from the Centre website at

www.bioscience.heacademy.ac.uk/network/students/demonstrators.aspx



Bioscience Bulletin articles

Bioscience Bulletin 26 was a themed edition focussing on Practical Work. The forthcoming Summer 2011 edition of the Bulletin (available June / July 2011) will also focus on practical work.

www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin26.pdf

Panell, J.R. (2010) **Putting Data Ahead of Theory in Biology Practical**s. Issue 31 p4.

www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin31.pdf

Ribchester, C., Hunt, T. and Alexander, R. (2010) **Carbon Footprints and Fieldwork**. Issue 29 p4.

www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin29.pdf

Langton, P. and Harris, J. (2009) **Teaching Histology Using a Virtual Microscope**. Issue 27 p7.

www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin27.pdf

Resources for use in practicals

The Interactive Laboratory and Fieldwork Manual for the Biosciences

The Open Education Resources (OER) project brought together a range of learning and teaching materials to support practical work in the biosciences. Material ranges from online tutorials to raw data for analysis, and the topics covered include genetics, evolutionary biology, sampling techniques and medical microbiology.

For details about the project and how to download, use and adapt these resources see

www.bioscience.heacademy.ac.uk/resources/oer/OER1.aspx



Projects

The **Enhancing Fieldwork Learning** project aims to encourage practitioners to connect with both familiar and new technologies and think about how they can be used within a field situation.

www.enhancingfieldwork.org.uk/

Many **Centre funded projects** have focussed on practical work and practical skills including:

- Combining 'Peer' and 'Online' assessment methods for large-class laboratory practicals to enhance the effective feedback to and learning experience for students;
- Development of Enquiry-Based Learning for Biology Undergraduates; and

- Assessment of Practical Skills.

A list of Centre funded projects, with links to resources and reports is available from www.bioscience.heacademy.ac.uk/resources/projects/