

# Final Year Projects: Maximising the Learning

Newcastle University, 13<sup>th</sup> May 2010



## Delegate report Dr Kelly Moule, University of Bristol

This event comes at a time when UK Universities are facing pressure on staff and resources due to increasing student numbers in the face of reduced funding. One of the most important and worthwhile parts of most bioscience degree programmes is the final year research project yet this is also frequently the most expensive in terms of resources and staff time. This event explored alternatives to the standard “wet” research project and how these could be used to assess similar learning outcomes.

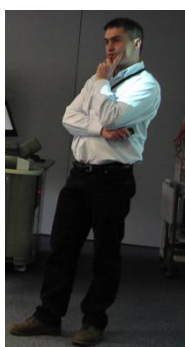
### Alternative projects: ten tests for validity

Our keynote speaker, Martin Luck, got us all thinking about how we might improve the current project offering by providing alternatives which both staff and students recognised as legitimate replacements for the traditional research project. In order to achieve this, Martin suggested ten tests of validity when using alternative project formats, based on research and educational criteria. He stressed the importance of projects being based on real research and offering students opportunities to display creativeness within defined goals. In addition, projects had to provide opportunities for students to learn, even if the project research goals were not met.



### Case studies of alternative Final Year Project provision

After this interesting start, Debbie Bevitt talked about the structured group project she is using at Newcastle to provide lab-based projects for students who are at the lower end of their cohort (based on their second year marks). These projects run in the teaching labs and are based around investigative scenarios, such as using a range of techniques to analyse enzyme solutions. Memorably, she used Rolf Harris’ “can you tell what it is yet” to illustrate the problem solving approach this type of project fostered!



Projects outside the University context were explored by David Lewis in his presentation on Science and Society projects run at Leeds. Students on these projects develop bioscience teaching sessions that they deliver to local schools. They also evaluate the effectiveness of their sessions through focus groups, feedback and personal reflection. Claire Steen, an undergraduate and David’s co-presenter, gave an overview of the work she had done whilst on the scheme and was an excellent ambassador for this type of project.

Two further sessions focussed on what might be termed “dry” projects. Carol Wakeford discussed the e-learning projects she runs at Manchester and showed how these projects focussed on enquiry-based learning to enhance scientific knowledge. The resources developed by students were impressive, but these projects were supported by an enviable Faculty e-learning team that I doubt could be matched by other institutions!

Helen James (East Anglia) covered projects based on data analysis, such as analysis of micro array data, phylogenetic analyses and identifying protein homologues. The learning outcomes for these projects can be seen as very similar to those for wet projects, although the lack of opportunity for development of experimental skills was seen as a problem by some staff and students.



“Excellent opportunity to reflect on current and future practice” “An interesting, stimulating, thought provoking and frank exchange of views”

After lunch a discussion session highlighting some of the major issues raised throughout the day:

- What do we mean by “real” research?
- How can we ensure the alternative project formats offer comparability to students?
- How do we select students for projects?
- Can group projects be used to maximise efficiency and what do we mean by “groups”?
- How can we ensure that all students are supported equally throughout their projects?

While we didn’t manage to find answers to all these problems, the meeting was certainly thought-provoking and helpful in making us think creatively about alternative projects.

#### Swapshops

The event finished with a series of useful swap-shop sessions on other project formats.

**David Lewis (University of Leeds): Survey projects as an alternative to wet lab projects.** In these projects, students undertake surveys of the general population to determine whether current Government public health initiatives are actually working in practice. Students design questionnaires on their chosen topic and then conduct semi-structured interviews of the clients of a particular initiative, comparing responses between at least two different areas/regions or groups.

**Phil Langton (University of Bristol): "Undergraduate Ambassador Scheme (UAS) as final year research projects: a win-win solution"** The Undergraduate Ambassador Scheme (UAS - see [www.uas.ac.uk](http://www.uas.ac.uk)) aims to improve achievement in science, technology, engineering and maths (STEM), increasing the proportion of school leavers studying STEM subjects in University. A related aim is to encourage more and better graduates into careers in teaching.

**Andrew Bates (University of Liverpool): School-based projects,** piloting projects in which students collaborate with a secondary school to develop materials, including a teacher's guide to the material, for a biology lesson/lessons, whilst writing about the underlying science at a higher level for their report. **Bioinformatics projects,** developing a scheme where bioinformatics experts collaborate with other staff to develop bioinformatics projects relevant to their interests, and provide a regular drop-in workshop to help with software-related issues and general advice.

**Richard Bevan (Newcastle University)** then rounded off with **“Alternative projects: ensuring parity between project types”** which pulled together main themes of the day and gave delegates some key ‘take home’ questions: Should all students do a research project? How do you get staff involved with ‘new’ models?

I came away thinking that it is important for both students and staff to value alternative project formats and that we should move away from considering the wet research project as the “gold-standard” for all students.

“Another example of the great work done by the Biosciences Centre in supporting the subject area”