Following the Centre for Bioscience Representatives Forum September 2005

Interests, Challenges and Successes in Bioscience Learning and Teaching – notes from the speed dating. Some of the challenges and interests discussed are shown with links to possible sources of further information.

Topic	Where can you find more information or resources?
Problem Based Learning (PBL) ▪ PBL – Med school 1& 2 ▪ Reduce labour for PBL ▪ PBL in non-vocational areas – and making it work in biosciences ▪ +ve PBL – Biosciences ▪ PBL in bioscience ▪ Blogs and self-build website – wiki (pedia) (possible links with PBL)	o Problem-Based Learning Network Group - http://www.bioscience.heacademy.ac.uk/network/sigs/ o PBL resource page - http://www.bioscience.heacademy.ac.uk/network/sigs/pblres.htm o BEE-j papers, for example; E J Wood, Problem-Based Learning: Exploiting Knowledge of how People Learn to Promote Effective Learning (available from http://www.bioscience.heacademy.ac.uk/journal/vol3/beej-3-5.htm) o Project LeAP – (Problem-based **Le**arning in **A**stronomy and **P**hysics) FDTL4 project – although not bioscience based could provide some ideas - http://www.le.ac.uk/leap/ o In April 2006 the Centre for Bioscience/Society for Experimental Biology will host a one day meeting on the theme of Problem Based Learning at the University of Kent at Canterbury – contact the Centre for further details
VLE / e-Learning ▪ Virtual environment / Blackboard problems ▪ Commitment by staff ▪ Infrastructure ICT issues ▪ Online assessment ▪ Successes – online assessment ▪ Getting uni support to support VLE assessment ▪ +ve – e and blended learning ▪ Staff reception of VLE - accepting or fear ▪ IT teaching ▪ wikis and blogs ▪ Key skills with added VLE ▪ E-learning ▪ Blackboard	o BEE-j papers, for example; T A M Norris, Helping teachers to embed e-learning materials into undergraduate pharmacology courses. (available from http://www.bioscience.heacademy.ac.uk/journal/vol1/beej-1-6.htm) o Some of the Centre for Bioscience's Teaching development Fund (TDF) projects focus on e-learning and VLEs, view their reports and project outcomes at: http://www.bioscience.heacademy.ac.uk/projects/tdf/tdfcomplete.htm o The Higher Education Academy web pages contain a variety of resources and information relating to e-Learning: http://www.heacademy.ac.uk/e-learning.htm o New guide from the "Teaching Bioscience – Enhancing Learning series" from the Centre for Bioscience – "The effective use of technology in the teaching of bioscience", to be published next year. Further information and a call for case studies from: http://www.bioscience.heacademy.ac.uk/publications/tbel/index.htm

▪ Use of IT in teaching	
Recruitment / Retention ▪ Research projects – recruitment! ▪ Recruitment Biomedical ▪ Into clearing first time ▪ Biomed / Physio ▪ Recruitment ▪ Some 1st year problems with retention ▪ Support for transition ▪ Student commitment	o STAR (Student Transition and Retention) FDTL4 project – http://www.ulster.ac.uk/star/index.htm o Induction audit developed by STAR - http://www.ulster.ac.uk/star/resources/induction_audit.doc o 1st year experience audit - http://www.bioscience.heacademy.ac.uk/resources/Audit.htm
Assessment ▪ FDTL OLAAF project on assessment ▪ On-line assessment ▪ Assessment – types, amounts, novel ways of doing it ▪ Group assessment ▪ Diversifying assessment in fieldwork ▪ research active areas ▪ Possibility of peer assessment ▪ Formative assessment and directed reading ▪ Group work and assessment	o Centre for Bioscience Formative Assessment network group - http://www.bioscience.heacademy.ac.uk/network/sigs/formassess/index.htm o OLAAF page - http://www.bbk.ac.uk/olaaf/ o Assessment audit from the Centre for Bioscience - http://www.bioscience.heacademy.ac.uk/resources/Audit.htm o Centre for Bioscience "Enhancing Self and Peer- assessment" guide - http://www.bioscience.heacademy.ac.uk/publications/tbel/selfpeerassess.htm o FAST (Formative Assessment in Science Teaching) FDTL4 project - http://www.open.ac.uk/science/fdtl/ o Centre for Bioscience events – Assessment for Learning (a number of events focussed on this topic), reports available from - http://www.bioscience.heacademy.ac.uk/events/reports/ o A number of articles published in BEE-j have focussed on assessment - http://www.bioscience.heacademy.ac.uk/journal/
Practicals ▪ Final year research projects ▪ Practicals ▪ Loss of practicals ▪ Practicals	o Centre for Bioscience events – "Making the most of final year projects" (a number of events focussed on this topic) http://www.bioscience.heacademy.ac.uk/events/reports/ o Final year projects Special Interest Group - http://www.bioscience.heacademy.ac.uk/network/sigs/project/ o Practical Work Network Group - http://www.bioscience.heacademy.ac.uk/network/sigs/practical/ o Practical work bibliography - http://www.bioscience.heacademy.ac.uk/ftp/sed/bibliog.pdf o Compendium of Practicals - http://www.bioscience.heacademy.ac.uk/compendium/ o "Practical class" scenarios - http://www.bioscience.heacademy.ac.uk/resources/scenarios.htm

Widening participation ▪ Adapting to different ability levels ▪ 50/60 students –increased from 15-20 a few years ago ▪ Multicultural education and inclusivity ▪ Multicultural issues in teaching biosciences ▪ English as a foreign language ▪ Curriculum diversity ▪ Wider range of student intake ▪ different abilities ▪ Foundation year	o Widening Participation pages on the Centre for Bioscience website – Information and links http://www.bioscience.heacademy.ac.uk/issues/wp/ o Widening Participation Network group - http://www.bioscience.heacademy.ac.uk/issues/wp/
Feedback ▪ Formative feedback – but some challenges still ▪ challenges from timetabling and getting feedback to students in good time ▪ Feedback ▪ Standardisation of assessment	o EFEL (Effective Feedback Enhanced Learning) FDTL 4 project - http://www.ntu.ac.uk/science/specialist_centres/EFEL/ o (**Feedback from students**: Student Feedback project - http://www.bioscience.heacademy.ac.uk/projects/studfbk.htm
Teaching skills / maths ▪ Ecology / Statistics ▪ Quantitative skills ▪ Maths ▪ Confidence ▪ Chemistry – problems teaching to biologists ▪ Quantitative skills – stats, Involve students more - Interactive lectures and workshops, Big success with students	o Numeracy (Biomaths) Network Group - http://www.bioscience.heacademy.ac.uk/network/sigs/numeracy/index.htm, page contains information and links to further information and resources.

Group work	o A number of articles published in BEE-j have focussed on group work - http://www.bioscience.heacademy.ac.uk/journal/ o Report from our recent event on Effective Group Work: http://www.bioscience.heacademy.ac.uk/events/reports/abertay05.htm
PDP ▪ PDP – good for scientists ▪ Student diaries	o Profile FDTL 4 – developed to monitor student Work Based Learning and being modified for PDP, visit the website – http://www.profile.ac.uk
Links between research and teaching	o BEE-j paper - Linking Teaching and Research in the Biosciences, Heather J. Sears and Edward J. Wood, available from; http://www.bioscience.heacademy.ac.uk/journal/vol5/beej-5-4.htm o Section on Centre's website including bioscience case studies and other resources compiled as part of the LTSN Generic Centre project on Linking Teaching and Research in the Disciplines, see http://www.bioscience.heacademy.ac.uk/projects/ltr/ o Research Links Throughout the Bioscience Curriculum: Effective Learning? http://www.bioscience.heacademy.ac.uk/events/york05.htm
Peer observation – finding out what other universities are doing – wants more evaluation of teaching – do we know we are teaching to an appropriate level (compared to other institutions) encouraging staff to contribute to different courses	
Blended learning	
Directional learning	