

THE WIDENING PARTICIPATION AGENDA

**Widening Participation in Higher Education For The Bio-Sciences:
A Report on the Strategies and Experiences of Three University
Departments: Plymouth, London Metropolitan and Oxford**

**The above Universities would like to thank the Learning and
Teaching Support Network Centre for Bioscience for supporting
this work**

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6. THE WIDENING PARTICIPATION AGENDA

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1. Introduction: The National and Local Context

Chapters five and six of the recent White Paper 'The future of higher education' (January 2003) sets out Government plans for expanding Higher Education (HE) to ensure that suitable and accessible HE provision is available to all who could benefit from it.¹ The key risk, as identified in the HEFCE Strategic Plan 2003 - 08 (March 2003), is that there will be insufficient additional demand for HE places from 18-30 year olds to meet the participation target (50% by 2010) through aspirations not being sufficiently raised and also that there will be an insufficient increase in representation from the under-represented socio-economic groups.²

Current government policy, therefore, is directed at increasing the number of people entering higher education, and particularly at raising participation rates in higher education institutes (HEI's) of students from non-traditional backgrounds. Given the difficulties many HEI's have experienced in attracting students to the bio-sciences in recent years, it is important that institutions are able to target, recruit and retain students from a broader entry base, including the ethnic minorities and lower socio-economic sectors of society.

The three universities used in this study have very different issues with regard to widening participation (WP). Plymouth currently recruits predominantly white applicants from both urban and rural locations and has the potential to attract more students from areas of marked social deprivation, for example from within the cities and rural areas of Devon and Cornwall. Cornwall is one of only two regions in the UK with objective One EU status and thus ranks with poorer parts of the EU for economic aid.

London Metropolitan successfully targets ethnic minorities and those from the lower socio-economic groups, essentially from North, East and South London. Oxford University is evolving its own widening participation scheme using outreach officers, teacher's forums and summer schools, but its agenda is of necessity different to that of Plymouth or London Metropolitan, because of its requirement to encompass a nation-wide catchment area.

The rationale behind this report is that the collected experiences of these three institutions, operating in widely different catchment areas, will be of value to other institutions also wishing to raise participation of non-traditional students in the bio-sciences. An aim of the report will therefore be to enable a transfer of good practice by making available the collected expertise

Recruitment is, of course, only the beginning of the student experience. Retaining and supporting students from non-traditional backgrounds is an altogether wider and possibly more thorny issue. The report will include an analysis of strategy and procedures from the three institutions for both recruitment and retention. It will then consider key issues needing to be addressed and a checklist for good practice will be generated for use in other institutions. All three universities have well developed Widening Participation (WP) Strategy documents, which are available through their web sites and within which departmental activities obviously have to take place. All identify their particular target groups and the strategies employed to reach and retain potential students from these groups.

The report begins with an analysis of the WP strategy at the University of Plymouth, as an example of good practice. It then gives an example of transfer of good practice from Plymouth to London Metropolitan University and finally gives details of work in progress at the University of Oxford.

¹ DES, *The Future of Higher Education* (London: DES, Jan. 2003).

² HEFCE, *HEFCE Strategic Plan, 2003 - 08*, March 2003, p. 17.

2. The University Of Plymouth: Widening Participation Strategy: 2001- 2004

Plymouth University has a wide network of partner Further Education (FE) colleges throughout the South West, which ensures student progression onto University Programmes. In addition the University has a well-developed Widening Participation strategy which ensures a targeted approach to groups identified as currently under-represented in HE, and who have had their life choices reduced as a result of social and economic disadvantage. Widening participation actions aim therefore to impact on disadvantage by increasing the participation of these groups in HE, by ensuring appropriate support during their HE experience, and by optimising their chances of 'success' both in HE and on graduation. These activities include:

- attracting under- represented socio- economic groups
- increasing the proportion of mature students
- encouraging students with disabilities/dyslexia
- redressing the gender balance for those subjects where necessary
- ensuring ownership at faculty level, working in partnership with local schools and colleges
- raising awareness of HE and motivating a desire to consider study at HE level in school-age pupils.

The key target groups identified by the WP strategy include:

- younger students from disadvantaged socio-economic backgrounds, particularly socio-economic class 4 and 5
- mature students, particularly those from lower socio-economic backgrounds.
- students with disabilities / dyslexia, including mental health
- target students relating to gender imbalance issues

Working with Schools

The strategy for working with schools begins with the premise that there are key, proven interventions, often provided in partnership with school staff and other gatekeepers, which can really make a difference to young people's perception of HE and their own levels of educational attainment and motivation to aspire to HE.

A series of University interventions and WP activities from Year 6 right up to Year 13 ensures that pupils with potential and talent are nurtured and focussed towards HE. The work also involves links with parents, key gatekeepers and local community groups. This holistic model has been developed through a programme of widening participation activities with Plymouth Education Action Zone in designated postcode areas. As a result of Excellence Challenge, this has been extended to other EAZs in the south west. Parts of the model will be extended to other schools in target peninsula postcode areas in Torbay, West Cornwall, North Cornwall, North Devon and West Somerset.

Activities undertaken by faculties and the central WP team are focussed on key schools, working with target pupils from Year 11 to Year 13. A limited number of specialist actions focus on Year 8, 9 and 10 (eg: Science and Technology Opportunities project – Faculties of Science and Technology).

The WP strategy aims to:

- 1) Raise aspiration and increase participation
- 2) Retain and support target students
- 3) Increase target students employability, ensuring their achievement.

The University of Plymouth Widening Participation Co-ordinator is Vanessa Fitzgerald: V.Fitzgerald@Plymouth.ac.uk

Widening Participation in the Faculty of Science

There is an appointed WP co-ordinator for the Faculty of Science who works closely with the central WP team and is responsible for co-ordinating WP activities throughout the Science Faculty. The Faculty of Science Action Plan aims to:

- Make academic staff more aware of the part they might play within the WP agenda (through departmental meetings, seminars etc.)
- Ensure delivery of the Science & Technology Opportunities Project (STOP) which has been highly successful in delivering demonstrations in schools throughout Devon and Cornwall and hosting visiting schools within the Faculty
- Hosting visits by schools and colleges to the Faculty
- Making visits (by academic staff) to local WP target schools
- Participating in the University-wide residential Summer School for pupils from EAZ areas throughout the South-west
- Developing links to Plymouth LEA's "Able and Talented" initiative, with a view to running a series of workshop half-days in 2002/3, for upper primary school pupils from Plymouth EAZ schools
- Supporting the 'Great Egg Race', an initiative organised centrally for local schools and in which the Faculty of Science supplied most of the judges and financial support.

**The Faculty of Science Widening Participation Co-ordinator is Dr Dave Croot:
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Recruiting and Retaining non-traditional Science entrants: the Institute for Science Education and the Extended Science Programme

In August 2002 the Institute for Science Education (ISE) was established within the Faculty of Science. The Institute is staffed by academics from each of the Schools within the Faculty and who have 0.5 of their time made available to support ISE activities. Staff were appointed on the basis of their track-records and expertise in teaching and learning. The ISE Director is the manager of the Extended Science (Year 0) programme which has a proven track record in recruiting and retaining a high proportion of mature and non-traditional students. The course has been particularly successful in maintaining exceptionally high pass and progression rates. Further details of the model employed are given below.

The Institute has four main areas of immediate focus:

- Recruitment, retention and progression, including WP
- Enhanced support for students particularly in stages 0 and 1 to improve retention
- Consolidation of basic skills including numeracy skills, literacy, reflective writing and information retrieval
- Tracking student progress.

The Extended Science Programme

This highly successful Science Foundation programme recruits students from non-traditional backgrounds, many without the standard 'A' level profile which is required for entering directly into stage one of a Science degree. It is particularly successful in recruiting mature students with no recent academic history. The teaching is aimed at building student self-confidence, instilling the basic foundations of scientific theory and practice, and enabling students to make an informed choice of Science degree.

Former students cite the module *Study in Higher Education* which is at the core of the programme as being highly influential in ensuring their successful completion and progression. The particular aim of this module is to ensure that students begin their honours programmes with sound learning techniques and confidence in their own ability to learn and access the University's facilities.

In addition to the Study in HE module, the Extended Science programme uses a labour intensive but effective student tracking system. The purpose of student tracking is to monitor engagement with the course as much as academic progression. Students are registered at all sessions and early formative assessments are used, with non-completions noted, as well as weekly summative assessments in Chemistry and Physics laboratories. Module tutors pass information to the programme manager on a weekly basis. This is crucial in early identification of potential problems. Students are contacted promptly by email and this is followed up in writing to ascertain whether help is needed. A nil-response, coupled with continued non-engagement by a student results in more formal follow-up procedures being instigated at faculty level.

Half-way through the course, just after the Christmas vacation, student deemed to be in a vulnerable academic situation are invited for interview with the focus being a discussion of strategy for successful completion of the course. This needs sensitive handling and all interviews are conducted individually by the programme manager. These strategies, together with the Study in HE module have been instrumental in keeping student progression rates between 83 and 95% throughout the history of the Extended Science programme. Cohort sizes have increased over the years to 150 currently and student backgrounds have diversified, so that improved student support has maintained rather than improved student retention.

**The Extended Science Programme Manager is Dr Dave Harwood:
D.Harwood@Plymouth.ac.uk**

Recruiting and Retaining students by means of Foundation degrees

A major potential source of students identified in “target groups” are those young people currently in Further Education (FE) colleges. As Foundation Degrees begin to develop, the ISE will actively seek to encourage students in FE colleges to raise their aspirations to completing the third 'top-up' year towards an Honours degree. The student experience of HE in FE can potentially match that in HE institutions with its smaller groups, lower staff student ratios and FE's greater understanding of non-traditional student's needs plus its greater accessibility and its sound links with employers.

The White Paper (2003) makes clear that increasing student numbers to the requisite 50% will be achieved predominantly through two-year work-focused foundation degrees. While acknowledging that further education colleges already play an important role in delivering higher education, currently delivering 11 per cent of the total, it sees further education as particularly important in the restructuring of the pattern of expansion (5.20). The intention to 'build and strengthen' the links between further and higher education is stressed, facilitating clear progression pathways for students. It envisages foundation degrees as the standard two-year higher education qualification, by working to bring HNDs and HNCs into the foundation degree framework and by providing development funding to help in the design of new foundation degrees.

Core Modules: *Study in Higher Education*

One of the problems identified (Harwood 2003)³ with regard to Foundation degree students moving on from an Further Education college environment to Higher Education, is the change in culture from small-group, high staff input to a more autonomous learning environment. A possible model for ensuring high quality delivery has been proposed at Plymouth for use in its partner colleges. The model involves a series of central core modules, running through all HE in FE programmes. In year one, this module could be linked to an extended induction period and would focus on the particular skills necessary for study in HE, and known as *Study in Higher Education*. The purpose would be to enable students to identify and explore the differences in FE and HE learning; to express their needs,

³ Harwood, J, *Delivering HE in FE: Staff perceptions in five colleges in the South West*, University of Plymouth, (unpublished data), March, 2003.

expectations and anxieties and to receive a clear sense of what staff expectations of HE level work are likely to be.

In the second year this central core module could become a *Transition to HE* bridging module, which would allow students to explore the University environment, by means of visits, attending lectures, seminars, and discussions with University staff with regard to final year projects. They would also benefit from being taught at college by University staff. Many respondents stressed the importance of this two-way synergy, to allow University staff to experience their students and learning environment and vice versa.

The University's Science Faculty is developing such a model, by use of a 40 credit bridging module. At Easter in year two of a foundation degree students attend the University for a week's intensive laboratory work. Teaching and technical staff also attend, building in a measure of staff development with college staff having the opportunity to teach in an HE environment and work with University colleagues. Students then undertake a 20 credit 'catch-up' component over the summer of year 2, where, having chosen their final year dissertation subject with help from a University supervisor, they are able to bridge any gaps in their subject knowledge identified from discussion with their University tutor. They then attend an induction week in September, before the University year three students return so they are able to receive dedicated time from staff. This bridging component is made up of 20 credits for the summer self-study section and 10 each for the two week's of attendance. A further benefit of this is that having sampled University life over this period they can make an informed decision as to whether they wish to continue into the third year or take the decision not to continue, well ahead of the October start-date and with no sense of failure.

The table below summarises in note form the needs of both students and staff engaged in HE programmes:

A possible model for transition from Foundation degree to Honours

<i>HE in FE Level One</i>	<i>The Student needs</i>	<i>Teaching staff need -</i>
	High contact hours	Excellent teaching skills to a) impart a solid foundation in the subject material b) encourage the development of sound learning and self management skills
	Help in planning and managing learning	To begin the process of inculcating a model of critical enquiry
	A well-structured induction period (first term could be seen as extended induction period with structured activities throughout)	To support students in the development of good study skills with a view to becoming increasingly independent learners
	Good library and appropriate support materials	High resourcing both in terms of contact time, support materials and staff preparation time
	Employment-related activities	Sound links with relevant vocational sector
	A core module ' <i>Study in Higher Education</i> ' which would cover, for example, the following areas: <ul style="list-style-type: none"> ▪ The encouragement of reflective practice by means of a learning journal / personal development plan ▪ Writing styles (appropriate for subject, eg report writing, lab reports, essays) ▪ Note-taking 	The ability to teach such a skills' based module within a subject specific context

	<ul style="list-style-type: none"> ▪ Effective reading strategies ▪ Finding information from a range of sources ▪ Close referencing ▪ Learning styles ▪ Making the most of different learning cultures, e.g. lectures, seminars, tutorials, laboratories etc. 	
<i>HE in FE Level Two</i>	To continue to develop learning skills, reflective practice	Time for preparation and subject up-dating
	Increasing depth of subject knowledge	Time to ensure up to the minute currency of ideas which will inform teaching
	Employment-related activities	Sound links with relevant vocational sector
	A core ' <i>Study in HE</i> ' bridging module with inter-change / visits to the University which allows discussion with University staff and students	
	Attending teaching sessions at University given by University staff	
	Preparation for final year research project including searching the literature effectively and the planning and design of experiments around research questions in collaboration with University tutor for final year	Theory and practice of research skills, in collaboration with university staff
	Sound preparation for the transition into the university learning culture/environment	Support of students and practice in developing students as independent learners
<i>He in FE Level Three</i>	Increasing independence and confidence as a learner	Excellent teaching skills
	Sound knowledge of literature base and information resources	A research profile
	Basic research skills	Evidence of the impact of subject research in teaching (leading edge and up to the minute thinking)
	Sound analytical, critical and evaluative skills and approaches to subject material	Good research supervisory skills

For further details of the above model contact Sue Burkill, Head of Educational Development: S.Burkill@Plymouth.ac.uk

Case Studies from within the Bio-Sciences at the University of Plymouth

Widening Participation through Schools' Liaison

Dr Karen Gresty is the Schools' Liaison Co-ordinator in the School of Biological Sciences. Together with a member of the technical support team, Pete Smithers, they have initiated a wide range of innovative projects mainly aimed at primary school children at Key Stage 2, (aged 7 – 11) and also with some secondary schools. The basis of their reasoning is that children of this age have boundless energy and enthusiasm for finding out about the world around them. If they can be 'switched on' to asking questions about basic scientific principles at this stage in their learning, it is likely to bear fruit

later in their learning lives. It is also true that primary teachers, on the whole, are non-specialists; there is often little kit, no technical support or laboratory space and if primary pupils therefore are to be enthused work such as Dr Gresty's schools' liaison work is of major importance. The following is a list of the initiatives they are currently or have been recently engaged with together with a brief description.

Minibeasts (Invertebrates):

Under 'Agenda 21', Plymouth City Council put on an *Environmental Fair* for Plymouth Schools. The School of Biological Sciences contributed a workshop and as a result of meeting a local theatre company there (Jacolly Puppet Theatre) devised the concept of developing a puppet play for 7-11 year old on mini-beasts, exploring their eating mechanisms, predator-prey relationships and local biodiversity. A small grant from the BBSRC Public Understanding of Science scheme made it possible to work with the theatre company to create anatomically correct puppets, construct staging, write and enact a script and, within funding, cost a number of shows which were then performed for schools who could not otherwise have afforded to see the 'Real Bugs' play. A further development was the creation of a set of teaching resources, a 'Real Bugs Resource Pack' free to all primary schools and distributed centrally by the BBSRC. In addition, in the summer months when the weather is better and there are more bugs around, Pete goes in to schools to organise 'Bug Hunts'.

Work with AEZ Secondary schools: in University laboratories, in schools or in the field with 'Exciting Science'

Includes the following activities:

- Microbiology, using agar plates: What's living on your hands? feet?
- Human Biology – 'Your heart and Health' using ECG monitors
- Disease, immunity and transmission: the importance of washing hands, 'germs'
- Histology – looking at plant sections, cheek cells
- Tropism – plants and movement, carnivorous plants
- A sea shore ramble
- An interactive biodiversity quiz session
- Marine biology: how do organisms eat and where do they live (laboratory session)

Summer School Activities

With AEZ Secondary pupils a week of activities is organised, part of which is science-based. This is focussed largely on field activities on Dartmoor and in the marine environment with walks and workshops.

STOP

This is a circus of Science and Technology based activities with some biological input e.g. plankton sinking rates, heart rate and exercise. Undergraduates go into secondary schools to work with whole year groups and with those pupils who would not normally consider University.

Sixth form summer workshops

There are several half day workshops for school sixth formers: Biodiversity; Human Physiology; Toxicology; Microbiology; Plant Science; Electron Microscopy; Animal Behaviour of which they choose two and spend a full day at the University with hands-on laboratory practice.

Participation in Schools' INSET days

Academic staff have responded to invitations to attend local secondary schools INSET days to help develop activities to make the science curriculum more exciting in terms of delivery.

There is also moves afoot to work with a local secondary school to give students experience of the Health Sciences courses so they observe, for example, nursing students in their practical teaching sessions as a means of possibly inspiring careers in these areas.

National Science Week

The Faculty of Science has organised a competition for National Science Week over the last 3 years. Several of the topics have had a distinctively biological flavour, covering issues such as climate change, biodiversity and conservation. Local schools submit posters and can win money for science equipment and a prize for the individual eg. trip behind the scenes at Paignton Zoo. In previous years, scientists have gone out into local (secondary) schools and offered talks (often in assembly slots) about the topic, in the context of the competition. The competition is also supported and marketed by Plymouth Sound FM.

Community Initiatives

Common Purpose: Plymouth University is a prime mover in both promoting and hosting common purpose activities, the purpose being to introduce up and coming managers in the city to educational opportunities.

Working with Plymouth's Chinese community

A range of Plymouth organisations were involved in this initiative mounted by Plymouth City Council and held at the local FE college. Biological Science offered an interactive Biodiversity quiz workshop which attracted much interest.

Weird Worlds

This was an ambitious initiative organised jointly by the City Museum and the University faculties of Science and Technology. In the autumn 2001, the Museum invited scientists at the University to contribute activities for a two month period (March/April) in 2003 and from this tentative start, *Weird Worlds: The Interactive and Exciting Face of Science* was born. Biological Science provided two weeks of activities: 'Bugs Alive' (including the minibeast puppet show) and 'Marine Worlds' in conjunction with the Marine Biological Association. The full programme was as follows:

- Robotic football
- Earth, air and water
- Marine Worlds
- Awesome earth
- Shocking physics
- Bugs Alive

This last initiative involved very many meetings over an 18 month period, which, as the event drew nearer became one afternoon per week. During the week of the exhibition individual staff were involved for the full week followed up by two highlight weeks (helped by student demonstrators).

In terms of time taken for other activities sixth form workshops are whole day events with individual staff giving half a day wherever possible, either morning or afternoon. The planning period entails an afternoon a week for two or so months prior to the events.

The workshops that are taken into schools (or take place within the University) last two hours or so with a planning period beforehand. If laboratories are used, technical support is also required.

The co-ordinator's role, overall, involves at least one afternoon a week and more when necessary.

Working with Adult Groups

Pete Smithers, the ecology technician, reaches adults who might not normally consider a University course by means of his 'walks and talks' for the National Trust and also for Exeter City Council.

Nigel May, the Science librarian has organised talks by science staff in a café in town to encourage people in the community to engage with science and the possibility of undertaking a science course known as the SciBAR scheme.

Devon Invertebrate Forum: Pete Smithers organises this forum for people with an interest in invertebrates. There are 90 on the mailing list and two meetings per year are organised with visiting expert speakers.

Initiatives focussed on student retention

Dr Gresty has also been involved with developing two online resources to help support students:

Headstart in Biology

A biology package for nursing/health students to access once they have been accepted onto their course (prior to starting University) so they can familiarise themselves with the type of material they will cover. The aim is to act as a supplementary resource all the time they are here and to boost confidence so they can start doing something to aid their learning before they start their course. Many of these students do not have traditional qualifications and so need extra help with subjects such as Biology. Web site address: <http://www.headstartinbiology.com>

Feedback Focus: Closing the Loop

This is an online resource to help provide (summative and formative) feedback to nursing students for essay assignments. It also directs students to other online learning support materials, to enhance future success. Web address: <http://www.feedbackfocus.com>.

Using research funding to raise the WP profile

Using small research grants to demonstrate the effectiveness of WP both in recruitment and retention of students and is a valuable way of raising the profile and giving WP academic 'respectability'. One member of the Biosciences team, Dr Maria Donkin, has carried out data analysis tracking the progress of a three-year cohort of students. Entry qualifications were compared with aggregate student marks (felt was more precise than mere degree classification). Both A level and non - standard entrants were considered, and especially students with Chemistry and Maths A level to see how much difference that made. It was found that first year students did significantly better if they possessed either Maths or Chemistry A level but after the first year differences were insignificant. A series of Chemistry and Maths workshops were subsequently introduced into the first year Biology curriculum leading to much improvement in the end of first year results. A level point scores appeared to make a difference to performance but Extended Science students performed as well or better than students with only a medium range of A level points.

In terms of retention Dr Donkin felt that an effective tutorial system to support first year students was vital. She was given additional responsibility to co-ordinate the team of first year Biological Science tutors. Individual tutors were responsible for skills development within tutorial sessions but pastoral issues could be referred to Dr Donkin. There was therefore a clear expectation and demarcation of roles and responsibilities with regard to students support in the early stages.

She had also instigated a system aimed to aid retention, whereby all student marks were examined at the end of the Christmas term and students failing three or more modules were contacted by e-mail and brought in for an interview. Their progress was then closely monitored during the rest of the year.

Contact details for the School of Bioscience staff cited above:

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Problems and barriers encountered with WP in the Faculty of Science

Although significant progress has been made in WP activities, in particular their focus and co-ordination through the Institute for Science Education, there are still problems with fully engaging all Schools in the Faculty with the WP strategy, this despite the offer of funding to release academic and technical staff. Issues include:

- attendance at Science WP team meetings has been poor
- two School representatives resigned their WP roles and were not replaced
- only two Schools (Biosciences being one) have been demonstrably “active” in furthering WP actions
- other Schools have not received an update from their WP representative; most have not supplied activities for STOP demonstrations, and some have not arranged any external visits to or by WP schools
- differing agendas between the University Marketing and Publicity Department and the Widening Participation team. WP workers complain that the Marketing and Publicity Department have their role and mission determined by different factors
- A lack of suitable, available spaces to bring in large numbers of school and college students including hands-on laboratory space

It is possible that WP is not a high priority in some academic Schools, compared, say, with research. It is therefore critical for the WP mission that managers provide active support for colleagues in their Schools who wish to engage in WP activities.

3. Widening Participation at London Metropolitan University

Formed in August 2002 as the result of a merger between LGU and UNL, London Metropolitan is the largest university in London with over 30,000 students. It has a catchment of 1.5 million and recruits mainly from the London area. Over 60% of its recruits are female and 70% are mature students. Over 70% are non-fee paying and more than 60% come from ethnic minority backgrounds. It thus forms a contrast to the University of Plymouth with its largely white student population. However, synergy and good working relationships between staff in the two universities have led to a dramatic turn-around particularly in relation to student retention on one particular course. The following is an account of this sharing of good practice.

The HITECC (Higher Introductory Technology and Engineering Conversion Course) at London Metropolitan University started in 1988 as part of a national, government-funded initiative to encourage mature students in considering a science degree. By 1992 it had been integrated so as to act as the foundation year for 4 year full-time extended degrees in science and technology.

Student recruitment has been dramatic: the first HITECC cohort was 25: the current cohort is 530. There are two major pathways available for students: one third of the total cohort elect to undertake the biology/chemistry (BCF) route while two thirds elect for the computing/maths (CMF) pathway. These two pathways lead in turn to degrees in the biological sciences, chemical sciences, health, nutrition and sports science on the one hand and degrees in computing, business information systems, multimedia and engineering after completion of the CMF pathway. There been a particularly marked increase in the number of students enrolled without a chemistry background during the period 1997 – 2202.

Student Profile:

Applicants tend to be:

- Mature students with minimal qualifications
- Students who have an arts-based background wishing to change career routes
- Applicants who have not succeeded in passing a level 3 programme – e.g. Access course or Advanced GNVQ or BTEC National Diploma.

- Mature females with high expectations of success
- Diverse in culture and ethnic origin

Marketing the Programme

There have been a number of strategies which have helped with student recruitment. These include:

- Working closely with local community groups, Adult Learning Centres and local FE Colleges
- Promoting the course as a 4-year extended degree programme rather than a free-standing foundation year
- Delivering the course at the University rather than in partner colleges
- Working with science teachers in local schools; with Islington Education Authority and the City Challenge through the Creativity in Science and Technology Scheme (CREST).

The Selection Process

- All applicants are interviewed by a member of the course team
- All applicants sit a standard entry test to assess their levels of numeracy and proficiency in the English language
- Applicants who do not meet the minimum entry criteria are referred to specialised short courses (e.g. 'Brush up your Maths') offered at the University and then invited to reapply.

The early years saw a very high drop-out rate, at one point being as high as 83.5%. The pass rate was also of concern, averaging around 40%. However, as a direct result of discussions with the Programme Manager of Extended Science at the University of Plymouth, Dr D. Harwood, who was invited by LMU to be the external reviewer for the programme, the course structure and curriculum were re-designed in 2001, taking on board a number of features of the successful Extended Science programme at Plymouth, described above.

It was during this re-design process that strategies to meet not only the differing learning needs of non-traditional students but also the cultural issues involved in attracting and retaining with students from differing ethnic backgrounds were developed. An example of this might be the specific needs for Muslim women from Somalians which differ from the needs of Afro-Caribbean learners. Working closely with community groups representing these people helped the programme team to more fully understand these differing learning needs, as did the use of tutors and lecturers from those ethnic backgrounds.

What Changes were made?

The programme was re-designed as follows:

- Two twelve-week semesters
- Full or part-time study (with curriculum delivered over 2 full days to allow for part-time workers)
- Modular structure with 4 modules per semester (full-time) and modular choice limited to allow a close focus on laboratory work, problem solving, C & IT skills
- 100 students split into 2 lecture groups with 2 staff members
- A team of experienced teachers working with SSR's of no more than 25:1, with good continuity of staff
- Good staff/student relationships forged through a personal tutor scheme
- Introducing a peer assisted support scheme (PASS) run by previous foundation year students to support new-comers

The Semester Structure

Semester A consisted of the following modules:

Foundation Maths: Chemistry 1 (theory): Biology 1 (theory): A Practical module in biology and chemistry

Semester B consisted of:

Chemistry II (theory): Biology II (theory): Practical Module (biology/chemistry): one free choice module.

One difference with the Plymouth course is that there is no central *Study in Higher Education* module. In this module, as described above learning skills, in the context of science, are specifically addressed, as well as being embedded in to programme. The HITECC course relies on good integration of skills into modules. The emphasis throughout is on active learning and the assessment model described below demonstrates how important skills are developed and embedded in the course.

The Learning Process

- Open-learning materials designed to help students learn at their own pace
- Small group tutorial classes led by students
- Weekly tests designed to assist the learning process and to provide regular feed-back
- PASS scheme / drop-in sessions
- Practicals designed to put theory into practice

Assessment

The assessment model was changed after discussions with Plymouth to move towards course work only in the first semester with a 30% exam component in the second semester. (Retaining an examination component at this level is seen as important in that it gives students practice at examination preparation and technique but is not such as to defeat those less confident students who probably have negative impressions of exams from their past.

The Assessment Model

Formative:

Library-based assignment

Case Studies

Group Work

Practical Reports

Summative:

Weekly 'mini'-tests

Formal progress tests

Unseen examinations

Overcoming the phobias

The programme team quickly became aware of the particular problems that students returning to study face. They list them as follows:

- Returning to education - developing patterns and learning how to learn effectively
- Maths - considerable diversity in ability with many needing help in all areas
- Tests/exams
- Time management
- Learning to study independently
- Self-confidence in learning
-

It is therefore important that the teaching staff are experienced and able to deal in a sympathetic and supportive way with these particular issues. The following support mechanisms help:

Supporting Achievement

Regular feed-back through weekly tests

Developing the skills to learn effectively

Promoting self-confidence

Identifying individual needs quickly

Having a team of enthusiastic staff keen to teach at this level

Using previous students as role-models of success

Mentoring scheme for students.

Conclusion

At a time when there are recruitment problems for the biological sciences, UML have managed to develop a programme that has attracted students and which addresses the WP/access agenda. Curriculum development and carefully chosen modes of delivery have dramatically increased retention and progression rates. The University has also taken the opportunity to network with other institutions and a research study comparing the London model to elsewhere (Plymouth) has proved useful. The following points are worth stating in conclusion and which demonstrate the need for supportive management:

- Effective admissions criteria
- Realising the needs of a special cohort
- Allocating appropriate resources
- Regular course review in conjunction with external peers
- Institutional commitment.

4. Widening Participation at the University of Oxford

The WP strategy at the University of Oxford claims that the University seeks to admit the best applicants irrespective of their social, regional, ethnic, or educational background and since Oxford wishes to maintain its commitment to excellence and its position as a world-class university, students are admitted solely on the basis of academic ability and potential. The University is nonetheless conscious of the need to encourage and support applications to Oxford from groups which are currently under-represented. For many years Oxford has had a programme of activities designed to encourage applications. This includes Open Days, school visits, summer schools and activities for teachers. Over the last five years the ratio of offers has moved from 48:52 (maintained : independent) to the current ratio of offers for entry in 2002 of 56:44 (maintained : independent).

These activities are divided under the headings of

Aspiration Raising: Working with schools: Residential visits: Working with teachers: Working with parents: Improving information

Pre-entry: the above plus a range of additional activities

The Admission Stage: Providing information: Monitoring and development of admissions procedure.

And aims to encourage applications from under-represented groups including

- the maintained sector in general
- students from non-traditional backgrounds
- students from under-represented regions
- women in science subjects
- mature students

An important part of the WP strategy is to set about removing barriers, real or perceived, which serve to deter students from applying. In particular, through literature and the website, www.admissions.ox.ac.uk, the University seeks to demonstrate the open, attractive, and affordable nature of Oxford to potential applicants, their parents and teachers and to continue to address misconceptions about Oxford through our publications and other outreach work. There is also an awareness that financial barriers can deter potential applicants and so a bursary scheme has recently been launched aimed at attracting students and supporting them through their studies, which will be effective from 2002. When fully operational, the scheme will distribute over £750,000 per year.

Working with schools

- Over the past year over 70 school visits were organised by Oxford Colleges Admissions Offices.
- A resource pack for tutors and other admissions staff to include resources to use when working with younger pupils, such as an appropriate presentation and pupil-centred activities is being developed
- **Aspiration Days:** in May 2002 an Aspiration Day scheme for Year 10 students from Excellence in Cities and Education Action Zones was launched which has enabled over 1700 students from these areas to visit the University. Each day consists of workshops, tours, meeting undergraduates and lunch in hall. Many days have also involved a visit to the University Museum. Every day is evaluated using feedback questionnaires given out to the students and teachers. This has enabled us to improve and develop the scheme. Many colleges have been involved in hosting these visits.
- **Oxford-Dudley Partnership:** a partnership has been established between Oxford and Dudley LEA to arrange a series of aspiration raising activities for Year 9 students from maintained schools in Dudley. A project officer visits the school for a pre-visit talk and the students then come down to Oxford. Each day includes a range of academic and aspiration raising events. Since autumn 2002, when the project was launched, over 350 students have been involved in the project.

Working with schools in Oxfordshire:

Oxford University is a partner with the Oxford EAZ. We are working with local partners in order to raise aspirations and promote HE in general.

- **Mentoring** Oxford is taking part in the National Mentoring Pilot Project. Over 40 Oxford undergraduates have been recruited and trained. They are linked to pupils in four middle schools in the Oxford EAZ. This mentoring scheme will be extended to the post-16 providers in the Oxford EAZ.
- **Student Tutoring Learning** The University and St. John's College have together arranged for current undergraduate students to go into schools in Oxford to support lessons. These include some schools in Oxford's Education Action Zone. This project is supported by HEFCE widening participation funding.
- **Sports and drama activities** Oxford students intend to work with the school pupils in the community on drama and sports activities. This may involve coaching sessions or taking a student drama production into a school and would be organised through student societies. We hope this project will be eligible for HEFCE Higher Education Active Community Funding.
- **Reach Up Project** This project is a mentoring scheme for local children in local authority care. Oxford Undergraduates are trained to mentor children that require and would benefit from extra support.
- **Passport Year 10** This programme is run by Oxford Brooks University and is a programme to raise aspirations of year 10 students from maintained schools in Oxfordshire. A number of these days will also take place at Oxford University in 2003 – a new, developing partnership with Oxford Brooks University.
- **Residential visits**
- Young people's aspirations can be raised by bringing them to the University to experience the academic and social aspects of student life. A number of these events for younger rather than pre-entry pupils have taken place and colleges have developed links with specific regions. In 2002 residential events for Year 10 and 11 pupils from maintained schools in Birmingham and Leeds have taken place
- **The Higher Education Summer School** Oxford took part in the HEFCE funded Higher Education Summer School Programme in 2000 - 2002. Pupils took part in academic taster sessions allowing them to experience the wide range of subjects available at Oxford. The aim of these summer schools is to raise aspirations amongst the participants, encouraging them to work hard at their post-16 studies and to think about applying to HE in general. Oxford will continue to hold Higher Education Summer Schools as long as this funding stream is available and help to develop them further with the rest of the sector. Around 100 students from all over England attended the Oxford University Higher Education Summer School in July 2002 with over 100 expected for July 2003. Over the 3 years which the summer schools have taken place a successful formula of academic, social and extra-curricular activities has been developed.

Working with Adults

Oxford University Summer School for Adults is proving successful in providing mature students with a short structured experience of residential higher education. The pattern of the summer school week is modelled on that of the University's full-time term, with intensive study, an essay and tutorials. Up to ten free places were offered on each of the 2002 summer school's four weeks for mature students from disadvantaged backgrounds in the 21 to 30 age range who are considering an application for full-time higher education. (

Working with teachers

Informing teachers about the access initiatives we carry out and generally about the University is a vital part of our widening access programme. Teachers are highly influential in encouraging and supporting their pupils to think about higher education. Building up strong relationships with teachers is an important part of the University's widening participation strategy.

- Open Days for teachers from 11-16 schools
- Open Day / Afternoon / Evening for teachers from schools in the Oxford Education Action Zone/ Oxfordshire maintained schools We intend to establish a programme of specially targeted presentations and visits.

Working with parents

We intend to hold an Open Day for parents of students attending schools and colleges in Oxfordshire and in particular those from the Oxford Education Action Zone.

Mapping the profile of mature part-time students in the Department for Continuing Education onto that of the population of Oxfordshire to identify target groups of those currently under-represented, particularly those in the 21-30 age range. This will inform the Department's widening participation strategy.

Preparation for higher education programme for refugees and asylum seekers

The Department for Continuing Education is planning with Oxfordshire County Council to develop a preparation for higher education programme for refugees and asylum seekers. The programme would draw on existing expertise within the Department's Diploma in British Studies and in the County Council's educational outreach work.

Cultural awareness programme

The Department for Continuing Education is planning to develop, in consultation with Oxfordshire County Council and voluntary organisations in the region, a cultural awareness programme for those working with ethnic minority groups. One long-term aim of this programme is to raise the educational aspirations of these groups

Working with Museums and the Botanic garden

- A Secondary Schools Officer at Oxford University Museum of Natural History and the Botanic Garden has developed a number of initiatives including activities for students at Key Stages 3, 4 and 5 (AS/A level) and has been involved in many of the events organised under the WP umbrella. A science fair will be organised at the museum in 2003 to coincide with National Science Week.
- A brochure *Inspiration for Education* has been produced which outlines the educational opportunities at all the museums and the Botanic Garden. This is distributed to local schools and those further a field

The above is a summary of key activities outlined in the University WP strategy. For further detail please consult the University website.

Tracking Student Retention Rates

In 1999 Dr Jane Mellanby in the Department of Psychology (began a longitudinal survey of a sample of Oxford University students, including those from the Biosciences. A commentary-style test and a deep and surface learning questionnaire was administered to a sample of candidates for Oxford who are now at the stage of doing their final exams. Information was gathered from UCAS forms as to schools, backgrounds etc. So far it has been established that school background was not related to their ability to do the tests (which was intended to be looked at potential rather than achievement). The next stage is to examine what, if anything, Finals results demonstrate. For further details contact jane.mellanby@psy.ox.ac.uk.

A list of the Widening Participation Co-ordinators at the University of Oxford is given in Appendix 1.

5. Widening Participation in your School of Biosciences: A check-list of good practice - Useful Do's (and one 'Don't')

Do's (for university departments / schools of the Bio-Sciences):

- Ensure a co-ordinator for Widening Participation / Schools' Liaison is appointed. The person appointed needs to be able to
 - work within the overall university strategy for WP
 - work with central staff with WP / schools' liaison / marketing roles
 - able to motivate colleagues to explore working to widen participation (e.g. to get involved with activities such as those as described above)
- Ensure there is a departmental strategy in place which does not leave all the work to one person to encourages collaboration and sharing of good practice
- Ensure that the various roles are co-ordinated, e.g. marketing, schools' liaison, WP, (sounds like common sense but they are often given to different staff with differing agendas which is wasteful of time and energy)
- Make use of central university staff with a remit for WP - admissions, marketing, access, partnerships - whatever they are called - there are staff employed to help the process and provide valuable assistance
- Make use, too of development staff within the university. They can help in setting up workshops, motivating staff, providing small grants for pilot projects
- Make use of technical support staff who, as the above illustrations show, have a very valuable role to play, both in demonstrating technical equipment to visiting school children and in making visits to schools.
- Make use of any funding sources, internal and external which might be available
- Find out what's going on in other places; what synergy or transfer there might be - don't reinvent wheels when there's on out there to borrow
- Talk to the expert teachers / educational developers when thinking of student retention - what changes can be made to the curriculum? What additional tutorial support / support processes might be put in place?
- Work with external agencies wherever possible (see above for project involving museums, Local Education Authorities etc)
- Set departmental targets - to provide evidence to the sceptics that things can work - albeit long term in some instances

Don't: Try to go it alone: contact details of staff in the three institutions cited are given above and below and they will be glad to respond to any queries you might have.

Appendix 1

A List of Widening participation contact details at the three institutions cited in this report

University of Plymouth

The University of Plymouth Widening Participation Co-ordinator is Vanessa Fitzgerald:
V.Fitzgerald@Plymouth.ac.uk

The Faculty of Science Widening Participation Co-ordinator is Dr Dave Croot:
D.Croot@Plymouth.ac.uk

The Extended Science Programme Manager is Dr Dave Harwood:
D.Harwood@Plymouth.ac.uk

The Head of Educational Development is Sue Burkill : S.Burkill@Plymouth.ac.uk

Contact details for the School of Bioscience staff cited above:

K.Gresty@Plymouth.ac.uk

M.Donkin@Plymouth.ac.uk

P.Smithers@Plymouth.ac.uk

N.May@Plymouth.ac.uk

London Metropolitan University

The contact person for this project was Dr Chris Branford-White, Director, Institute for Health Research and Policy: C.Branfordwhite@unl.ac.uk

The University of Oxford

The contact person for this project was: Dr. David A. Harris, Department of Biochemistry,
harrisda@bioch.ox.ac.uk, Tel. 01865 275347

For further details of the longitudinal student study currently underway contact
jane.mellanby@psy.ox.ac.uk.

For list of Oxford College Widening Participation representatives - see over:

Full Name	College (s)	Email
Elaine Pippard	Merton	elaine.pippard@merton.ox.ac.uk
Anne Daniel	Christ Church	anne.daniel@chch.ox.ac.uk
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Sue Morris	Jesus	susan.morris@jesus.ox.ac.uk
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Llewellyn Morgan	Brasenose College	
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McFadden	Jesus College	peter.mcfadden@jesus.ox.ac.uk
Julie Curtis	Wolfson College	julie.curtis@wolfson.ox.ac.uk
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