

Engaging with Employers of Bioscience Graduates

Summary

There is no generally accepted understanding of the term 'Engaging with Employers' and engagements can, in practice, take a number of forms. For this reason this report first poses 5 questions which seek to define the scope, scale and nature of the employers involved, as well as the purpose, duration and nature of the engagement. Only when these are defined can an appropriate engagement strategy be chosen from those outlined. Key action points necessary to progress engagement(s) with employers are highlighted.

Key action points

1. **Define the purpose.** Engaging with employers is a very current issue but academic staff need first to decide why they want to do this and what benefits there are for the institution, the unit and the students.
 2. **Define who is to take responsibility.** There should be an individual or a group which carries responsibility for making sure the agreed purpose(s) are achieved. Multiple independent inputs are not helpful. Co-ordination at institution, unit and individual levels is the key.
 3. **Define which employers are to be engaged.** It is impossible to engage with all employers. A subset of employers need to be targeted, chosen to best fit the purpose(s) and objective(s) of engagement.
 4. **Identify what is in it for employers.** Engagement is not a one way street. There need to be defined benefits for both employers and HEIs.
 5. **Decide how engagement is to be sustained.** Successful engagements are best built on long-term relationships which are mutually beneficial.
 6. **Arrange for periodic review of the engagement by both employer(s) and the HEI.** Needs and objectives change with time and there should be reflection on current success and future progression.
-

It must be appreciated that bioscience subjects cover a considerable range of disciplines (agriculture through biochemistry, environmental studies, molecular biology, pharmacology to zoology) and produce 35,000+ graduates each year. These graduates take employment in a great range of occupations and there is considerable variation in graduate destinations between universities. However, as a broad approximation 30% of graduates will go on to do higher or additional degrees, 50% will take employment outside bioscience completely and 20% will go into bioscience related employment. There is considerable variation in this breakdown between universities, some with graduates much more orientated towards bioscience occupations (for example those from the professional accredited courses) and others with graduates even less likely to take employment involving bioscience.

The purpose(s) of this report is to help bioscience units in institutions define the nature of any engagement with employers they wish to undertake by examining the reasons engagement is desired and to offer a number of strategies which might be appropriate to initiate such engagement(s).

The first question is

'Who are the employers with which to engage?'

This report is concerned with engagement with employers who are involved in bioscience related areas and employ graduates with the expectation they will utilise discipline specific skills and knowledge as well as the other attributes which contribute to graduate employability. It should be noted that since about 30% of bioscience graduates go on to do a higher degree as a research student or are employed as a research assistant, universities as a group represent the largest single employer.

The second question is

'Why are we engaging with these employers?'

Without wishing to initiate debate as to the purpose of higher education in terms of the wealth and economic success of the country versus satisfying an interest in a discipline, the more direct reasons to engage with these employers must be:

1. *To determine if the current product of HE (the graduate) is meeting their needs (does the product fit the market?).* It should be noted that employer needs' can change quite quickly and it is not always easy for universities to quickly change the nature/content of established courses.
2. *To encourage employer input into both the teaching and the curriculum content of courses (is course content and delivery appropriate?).* There already exists widespread involvement of employers in developing curriculum content. With regard to involvement in course delivery it can be difficult for employers to sustain the input required and to agree to contribute to one university but not to another.
3. *To identify future needs of employers* and allow these to be met bearing in mind the significant lag time involved in the course change process and the production of new graduates (how is the market likely to change?);
4. *To comply with government policy and direction and to enhance institutional income* through involvement with initiatives funded by government or employers
5. *To ensure that graduates are properly informed about employment*, about the factors influencing the transition from university to work and the variety of employment opportunities available to them (what's work like and what's available?);
6. *To transfer some of the resource requirement of education* and some of the work load of teaching from the institution/academic staff to the employer;
7. *To enhance research work and to aid knowledge transfer* with regard to the business of the employer;
8. *To develop work-related learning experiences and placements* which will enhance the student learning experience. Work-related-learning can of course be provided in universities or the workplace and may involve large or small employer input. Placements are hugely beneficial to students and are increasingly recognised as such by them. Short term placements may provide little pay-back for the employer since the student is barely trained before they leave. Placements for 1-6 months may be difficult to fit into an existing curriculum. There is strong national competition for one year placements and employers are not often prepared to allocate placements long-term to a single institution.
9. *To provide learning experiences which will appropriately up-skill an employer's existing workforce*, including the provision of PDP opportunities. Issues around appropriateness, quality and value for money are obviously important to employers. Bioscience units need to develop a strong customer focus if education is to be funded by employers in the institution or the workplace. Some large employers (e.g. AstraZeneca) have developed their own training courses while this may not be a financially viable option for SMEs.

None of these reasons for engagement operates in isolation and there is obvious interaction and interplay to a greater or lesser extent between all these drivers.

The term 'market' (1) may need some qualification since the 'market' is not just about employers buying graduates but is also about students buying courses at an institution and about institutions selling their ability to meet student and employer needs in exchange for extra grant/fee income from funding councils and employers.

With regard to (3) and (4), these are subject to the vagaries both of scientific discovery/developments and government policy.

With regard to (6), this is usually a minor factor but it is noted that, for example, institutions do charge significant fees to students even while they are on placement which may involve large or small amounts of institutional supervision.

Currently, the need to increase the numbers of science graduates against a demographic downturn in numbers and the recommendations of the Leitch Report, to enhance the qualifications of employees while in the workplace (9), are very important drivers towards employer involvement.

The third question is

'What spectrum of employers should be engaged?'

While related and interactive, the above purposes are distinct and may require a different type of engagement and/or engagement with a different group of employers to best address the particular issues involved. For example, a bioscience unit wishing to develop training courses to enhance abilities of employees may wish to engage only with local employers if the course is to be tailored to a specific need and delivered by attendance on campus.

Alternatively, engagement at national level may be appropriate if a distance learning mode of delivery is adopted. It is also worth noting that bioscience employers are very diverse, ranging from the very large (Big Pharma e.g. AstraZeneca, Pfizer, GSK) through established or new SMEs to entrepreneurial start-ups at very early stages of development. There is also significant regional variation in the types of local employers. Bioscience units in large conurbations often have easy access to several representatives of Big Pharma, while those within more rural areas may be limited locally to much smaller companies. In the land based subjects many students will be returning to work in small family businesses or in Government institutions such as the Environment Agency, Scottish Environmental Protection Agency (SEPA), DEFRA, the Scottish Crop Research Institute or Natural England. It is also worth re-emphasising that universities are themselves major employers of bioscience graduates either directly (research assistants) or indirectly as research students.

The fourth question is

'What type of engagement is required?'

While each of the above purposes may be best served by a particular type of engagement, most often there will be multiple purposes for engagement and several engagement strategies may be utilised to best address the various requirements involved. For example, identifying a need for specific training in a particular discrete skill at a national level may need only a transient engagement. This is very different from the long-term type of engagement required for a sustained input into course delivery at a single institution or that required to influence course content at a national level.

The fifth question is

'In what institutional environment is engagement taking place?'

While bioscientists are used to operating in a fairly autonomous environment it is important to note that within an institution many diverse units will be initiating and continuing engagements with employers. It is not helpful for bioscience units to engage with employers in a manner completely divorced from engagements already taking place with other units on the same campus. It is important therefore that bioscience units are aware of the spectrum of

engagement taking place within an institution and any institutional activity, policy or procedure that is in place regarding employer engagement.

The preceding 5 questions should have made it apparent that a variety of different types of engagements would be appropriate depending on the outcomes desired from the engagement and the type of relationship which is required. There are several ways of going about establishing such relationships.

Factors influencing engagement with employers

Successful and continuing engagement with employers basically comes down, at both national and local levels, to personal relationships between academics and employees based on a shared vision of there being mutual benefit to both individuals and to both organisations. One sided relationships, where for example the university wants the relationship but the employer is less enthusiastic (or vice-versa) are very hard to sustain. The view among academics that employers are a milch cow and among employers that many of the academic stereotypes are an accurate reflection is also not a tenable basis for a relationship. It is helpful if there is mutual understanding of problems on both sides. It is reasonable for an employer to cancel a meeting because they have just been informed that the president of the company arrives from the States tomorrow. Similarly, an academic cannot cancel a lecture simply because it is convenient for an employer to set up a meeting at that time.

Issues are around:

- the right level of involvement in terms of seniority (on both sides);
- autonomy with regard to actually making firm decisions (e.g. to commit finance);
- time availability and flexibility, both at an instant and over a period of involvement;
- demonstrable value for money (including time resource invested) from the employer's perspective as well as from the institution's;
- whether engagement is best, for the particular purpose it is being undertaken, on a national, regional, local or individual basis;
- appreciation of process in universities and the time required for things to progress through the quality and governance structures;
- the fact that students can be taken to water but not necessarily made to drink;
- having a single and responsive point of contact in both organisations to take matters forward;
- an appreciation that requirements, interests and personnel may change considerably within a short period.

Some routes to effective engagement, bearing in mind the purpose of the engagement, are listed below. It should also be noted there are some 120+ bioscience units in the UK. Each attempting to engage individually with a major employer is not a recipe for efficiency or productivity and the granularity of engagement is a critical aspect. Finally it is worth making the point that engagement is about building an evolving relationship and should not be viewed as necessarily static or constant.

Methods of engaging with employers

1. **Through existing research links.** Many bioscience units will already have research links with employers. Extending these to teaching areas is usually easy as employers have a vested interest in the quality of the graduates from whom they receive applications. The research link is also a good way of getting to the employer's Human Resources department who are more likely to be responsive to needs expressed and supported through one of their own research units.
2. **Through ex-students now in high places in industry.** Alumni are (nearly!) always happy to help progress engagement and this can be very fruitful as there is enthusiasm and involvement from within the company.
3. **Through cold calling.** Probably best by letter initially with a realistic proposal which has clear evidence of good knowledge of the company and its needs. Usually best directed to Human Resources or the managing director in smaller firms. The most important points to get over at the start is that the proposal can meet the company's needs and is realistic.
4. **Through existing institutional links.** Most institutions already have relations with employers and work with sympathetic and interested employees. Links exist for example through employers' involvement in employability events, employment fairs, university court and council, degree validations, ethics committees, the donation/sponsorship of prizes, careers service and graduate recruitment fairs to name but a few.
5. **Through professional/trade organisations.** Many specific industries have employer organisations (e.g. [Association of the British Pharmaceutical Industry](#)) which may themselves be interested in developing links or may be prepared to put bioscience units in touch with particular companies. Some may have a periodic magazine which can be used to stimulate debate and make contacts.
6. **Through learned societies.** Many learned societies already have strong relationships with employers in their discipline and may be prepared to act as brokers to facilitate engagement. This is particularly the case where the learned society has an education committee on which employers with commitment to education may be represented. Learned Societies in the Bioscience area include:

[Association for the Study of Animal Behaviour](#)
[Biochemical Society](#)
[British Andrology Society](#)
[British Association for Psychopharmacology](#)
[British Biophysical Society](#)
[British Ecological Society](#)
[British Lichen Society](#)
[British Mycological Society](#)
[British Neuroscience Association](#)
[British Pharmacological Society](#)
[British Phycological Society](#)
[British Society of Animal Science](#)
[British Society for Developmental Biology](#)
[British Society for Immunology](#)
[British Society for Matrix Biology](#)
[British Society for Medical Mycology](#)
[British Society for Neuroendocrinology](#)

[British Society for Plant Pathology](#)
[British Society for Proteome Research](#)
[British Toxicology Society](#)
[Experimental Psychology Society](#)
[Genetics Society](#)
[Linnean Society](#)
[Nutrition Society](#)
[Physiological Society](#)
[Royal Microscopical Society](#)
[Society for Applied Microbiology](#)
[Society for Endocrinology](#)
[Society for Experimental Biology](#)
[Society for General Microbiology](#)
[Zoological Society of London](#)
[Scottish Microbiology Society](#)
[Institute of Biomedical Sciences](#)

7. **Through Chambers of Commerce.** A local Chamber of Commerce may be prepared to broker relationships at the local level but are less able to operate at a national level.

8. **Through invitations to events.** It is possible to establish relationships through invitations to employers to attend various events e.g. student presentations in final year. This is often a good way of establishing new local engagements.
9. **Through student projects, placements and work experience.** Initial contacts, often initiated by a student in search of e.g. a summer placement, can often be utilised as starting points on which to build more extensive and more varied relationships.
10. **Skills Councils.** The Sector Skills Councils are in close contact with employers nationally within their sector remit and a list is available at www.ssda.org.uk/
Regarding alignment with biosciences:
SEMTA (Science, engineering and manufacturing) www.semta.org.uk/ and LANTRA (Environmental and Land based sector) www.lantra.co.uk/ are the most appropriate within the discipline area.
The Learning and Skills Councils exists to make England better skilled and more competitive and have good links with employers. www.lsc.gov.uk/
11. **Regional/national skills/workforce and employers' organisations.**
A number of regional employer organisations exist which may be very good at providing local employer contacts. For example:
Yorkshire Forward:
web site www.yorkshire-forward.com/
email info@yorkshire-forward.com

In Wales, responsibility for economic and business development lies within the Welsh Assembly Government's Department for the Economy and Transport. <http://wales.gov.uk/about/departments/dein/?lang=en>. Similarly there are national organisations e.g. the Association of the British Pharmaceutical Industry which represent employers nationally.

12. **Centres for excellence in teaching and learning (CETLs).** A variety of CETLs have been funded in England and some work closely with employers. A list of Bioscience related CETLs is below. For more information on CETLs in other disciplines see the Higher Education Academy (<http://www.heacademy.ac.uk/ourwork/networks/cetls>).

Advancing Skills for Professionals in the Rural Economy - *Aspire*

Harper Adams University College
Rural economy / Agriculture
www.harper-adams.ac.uk/aspire

AIMS Centre - Applied and Integrated Medical Sciences

University of Bristol
Medical sciences - including clinical skills, anatomy, physiology, pharmacology, histology and pathology, clinical anatomy and surgical training.
www.bris.ac.uk/cetl/aims/

Applied Undergraduate Research Skills - AURS

University of Reading
Linking sciences and humanities, initially developing from the core disciplinary areas of Agriculture, Zoology, Typography and Archaeology, working closely with the Museum of English Rural Life and the Cole Museum of Zoology.
www.rdg.ac.uk/cdotl/cetl-aurs

Centre for Effective Learning in Science - CELS

Nottingham Trent University
Science and outreach – often physical sciences and biosciences
www.ntu.ac.uk/cels/

Centre for Excellence in Leadership and Professional Learning to enhance students' vocational, leadership and entrepreneurial skills. Also work with Education and Science students.

<http://www.ljmu.ac.uk/cetl/>

Experiential Learning in Environmental and Natural Sciences

University of Plymouth

Enhance provision in fieldwork, lab work and work-based learning, applying inter-disciplinarity and embedding the skills associated with employability and entrepreneurship more firmly in the experiential curriculum.

www.plymouth.ac.uk/cetl/el

Genetics Education Networking for Innovation and Excellence - GENIE

Genetics

www.le.ac.uk/genetics/genie/

Inter-Disciplinary Ethics Applied - IDEA

University of Leeds

Biological sciences among others.

www.idea.leeds.ac.uk/

Ian Hughes,
June 2007