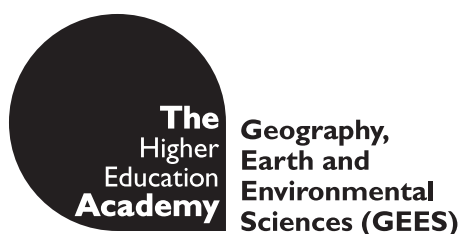


**Enterprise, Skills and Entrepreneurship**  
***Enhancing the curriculum in Geography,  
Earth and Environmental Sciences***

**Compiled and edited by Helen King**



**July 2006**

**<http://www.gees.ac.uk/projtheme/entrep/entrep.htm>**

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**Contents**

|           |  |     |
|-----------|--|-----|
| <b>1)</b> | <b>Introduction</b>  |     |
|           | (a) Project overview   | 7   |
|           | (b) Go on, persuade me: the GEES 'Elevator Pitch'                                  | 9   |
|           | (c) What does enterprise/entrepreneurship mean to the GEES disciplines?            | 11  |
|           | (d) Enterprise or entrepreneurship? some definitions                               | 13  |
|           | (e) How can enterprise/entrepreneurship be supported through the curriculum?       | 15  |
|           | (f) Student interest in enterprise/entrepreneurship skills                         | 17  |
|           | (g) What support do students need?   | 29  |
| <b>2)</b> | <b>Information/Papers</b>  |     |
|           | (a) Embedding business start-up in the university curriculum                       | 33  |
|           | (b) Considerations for embedding enterprise in the curriculum                      | 37  |
|           | (c) Exploring gender issues in entrepreneurship                                    | 43  |
|           | (d) Examples of enterprise in the curriculum                                       | 45  |
|           | (e) A few useful web-sites   | 53  |
|           | (f) Higher Education Academy (generic) resources                                   | 55  |
|           | (g) University enterprise/entrepreneurship support units                           | 57  |
|           | (h) Glossary of terms  | 65  |
| <b>3)</b> | <b>Examples of practice</b>  |     |
|           | (a) Enterprise and employability   | 75  |
|           | (b) Verbal business card icebreaker  | 79  |
|           | (c) You are on your own icebreaker   | 85  |
|           | (d) Two lectures to introduce the concepts of intrapreneurship                     | 87  |
|           | (e) Developing understanding of intrapreneurship and the links to entrepreneurship | 89  |
|           | (f) Entrepreneurship assessment opportunities                                      | 91  |
|           | (g) Exploring the motivation and skills of entrepreneurs                           | 95  |
|           | (h) Selling ideas, an enterprising activity for many modules: the elevator pitch   | 103 |
|           | (i) Communicating science  | 107 |
|           | (j) An environmental impact assessment of a brownfield site                        | 109 |
|           | (k) Outline scope for a commercial practice module                                 | 111 |
|           | (l) Students as consultants  | 113 |
|           | (m) Aberdeen Oil Game  | 115 |
| <b>4)</b> | <b>Case studies of GEES entrepreneurs</b>  |     |
|           | (a) Colin Deady: Ethical WebSites  | 119 |
|           | (b) Ben Malin: Terraqueous Ltd., Environmental Consultancy                         | 123 |
|           | (c) Nick Russill: TerraDat Geophysics  | 129 |
|           | (d) Emma Smith: Fairfield Materials Management                                     | 133 |



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**Section I: Introduction**

- (a) Project overview
- (b) Go on, persuade me: the GEES 'Elevator Pitch'
- (c) What does enterprise/entrepreneurship mean to the GEES disciplines?
- (d) Enterprise or entrepreneurship? some definitions
- (e) How can enterprise/entrepreneurship be supported through the curriculum?
- (f) Student interest in enterprise/entrepreneurship skills
- (g) What support do students need?



## I(a) Project overview

### Enterprise, Skills and Entrepreneurship Project 2005

As you may be aware, entrepreneurship is high on the agenda and the education sector is being encouraged to support students in developing their skills in this area. In 2005, the Higher Education Academy Subject Centre for Geography, Earth and Environmental Sciences (GEES) was awarded funding from the DfES to support entrepreneurship in our disciplines in HE. We see 'entrepreneurship' as a very broad term encompassing a set of skills that includes creativity, opportunism, taking risks, problem-solving, research and enquiry, and team working. The funding provided an opportunity for the GEES disciplines to showcase and build on their good level of support in the area of key skills, employability and work-related learning (including dissertation, mapping and other 'real-life' projects). The project identified existing resources and expertise and provided materials for staff to integrate into their curriculum specifically in the area of entrepreneurship.

### What is this resource?

This Resource Pack provides a collection of information, ideas, examples of practice and case studies which is intended to provide a starting point for colleagues interested in including elements of enterprise / entrepreneurship within their modules or courses in geography, earth or environmental sciences.

It is by no means a definitive or complete collection but is intended as a starting point for curriculum development. Hopefully it will provide some food for thought, hints and tips, and practical ideas. This Resource Pack is also available on-line at:

<http://www.gees.ac.uk/projtheme/entrep/entrep.htm>

Many more generic resources can be found at the Higher Education Academy website at:

<http://www.heacademy.ac.uk/Enterprise.htm>

### How were these materials developed?

The GEES Subject Centre developed these subject-specific curriculum materials through a one-year project which involved:

- Collating existing examples of practice from staff in the three subjects;
- Gathering case studies from GEES graduate entrepreneurs;
- Piloting the materials at a pioneering two-day residential event for both staff and students.

The materials were developed collaboratively by working with GEES staff throughout the UK to share existing practice, adapt generic materials for the disciplines, and to discuss and articulate relevant issues.

Students were also involved in the project through participation and feedback at a two-day residential event intended to provide a taster of entrepreneurship skills. As well as supporting skills development, the event gave the students an opportunity to network and learn from peers, staff and entrepreneurs with similar interests.

## **What did the project tell us – what did we learn?**

The project has provided a solid base of resources and information on which the GEES Subject Centre can develop further opportunities for supporting the embedding of entrepreneurial skills within the curriculum. In particular the project told us that:

- There are people out there doing this in higher education in the GEES disciplines.
- Some staff are really interested in including these types of skills in the curriculum both to enhance their students employability and to provide more creative ways of teaching.
- Many students are very keen to learn more about setting up their own businesses;
- Using enterprise as a curriculum development tool can create a real sense of enthusiasm, buzz, motivation and creativity, and can offer exciting ways to engage students in learning about our disciplines, enjoying the learning and wanting to apply it to their future work.
- We as a Subject Centre might work in more ‘enterprising’ ways and apply these curriculum tools to our own events and activities – it’s given us a desire to be more creative.

## **Want to know more?**

More information is available from Helen King at the GEES Subject Centre:

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## **I(b) Go on, persuade me: the GEES ‘Elevator Pitch’**

### **What is an Elevator Pitch?**

In the United States during the 1980s a new concept – the elevator pitch - emerged. Sales staff who were eager to ‘climb up the ladder’ discovered that the only chance of gaining the attention of the boss was in the lift. A decade later, the same technique became popular among entrepreneurs. Unable to get past the secretaries, they turned to ‘elevators’ in the fight to get venture capital and financing for their business ideas. Entrepreneurs would ride up and down elevators in New York’s skyscrapers waiting to meet the right person and the chance to get their foot in the door.

Elevator pitches have now moved outside of the ‘elevator’ and have infiltrated all areas of business life. They are used to motivate employees, they appear in print form on company websites, and there are people who organise ‘elevator pitch’ contests.

The ‘traditional’ orally-presented version falls into the three categories, which reflect the various possible uses for an elevator pitch today. The first is the ten second pitch. This might come in useful when speaking to an answerphone or being presented to a dignitary. The thirty second pitch is used for round table introductions or during networking events. And the three-minute pitch is used for presentations, at job interviews, sales meetings or recruitment fairs.

The following three minute pitch was developed for and delivered at the Higher Education Academy / SEDA ‘Enterprising Educator’ Workshop (March 2005). It is based on research conducted by Professor Brian Chalkley as part of his National Teaching Fellowship into employability in Geography, and on feedback gathered at the GEES Subject Centre’s event for students and staff on ‘Enterprise, Skills and Entrepreneurship’ in January 2005.

## The GEES ‘Pitch’: why include enterprise skills in GEES curricula?

With fees coming on line in 2006, student recruitment is going to get trickier and the students will be more demanding of a course to get them a good job at the end of it. So, each department is going to need its own big selling point to make it distinctive in the sector particularly if there are other institutions nearby in the region.

Talking of jobs, did you know that 90% of geography students say that their prime motive for doing geography is to get a good job? And 50% of geography undergraduates aspire to run their own business? So, departments could get a real competitive edge and get those bums on seats by developing their skills provision to include creativity, risk-taking, idea generation and other enterprise skills. But don't just take my word for it, here are some quotes from some current lecturers in geography and environmental science:

*“I recognise that most of our Masters students will quite possibly develop their own businesses at some stage in their career”*

*“[The development of enterprise skills is] an obvious gap in the curriculum and would work well in partnership with employability within my home department.”*

*“[we want to support] more opportunities for students to get employed.”*

Including these new skills in the curriculum is not that difficult to do and, to quote an earth science colleague, “You can teach all this without resorting to jargon.” Rather than having to cram even more into the timetable you can drop this skills development into existing modules as a tool for teaching aspects such as economic geography, exploration geology, environmental tourism and so on. And the added bonus of including enterprise skills in the curriculum is that it will also help develop excellent research skills for those budding academics.

There is currently only a small handful of departments in the UK that have some elements of enterprise in the curriculum, and yet, when the GEES Subject Centre ran an event on this theme, we had participation from geography, earth and environmental science students from all over the country – so there is a real demand from students out there but only a very few departments can provide for it. What did the students think about this workshop on enterprise? Here are a few typical comments...

*“Thank you for a wonderfully entertaining and enlightening few days. I learnt such a lot... I admit my feet still haven't touched the ground. I still feel really motivated and keen to take this further.”*

*“[the workshop] was really valuable. I circulated the materials here at Oxford to my tutors and lecturers.”*

*“Like the interactive-ness rather than constant lecturing. Uni courses should be more like this. Learning rather than Education!”*

Enterprise and entrepreneurship are to this decade what key skills were to the last, and I wouldn't be surprised if in 10 years time it will be similarly embedded into subject curricula. Any department getting involved now will have a competitive advantage not to mention the academic kudos of being at the leading edge of curriculum innovation. External examiners for those few departments already doing this are really enthusiastic. So, can departments afford not to take this on?

If you are interested, help is very much at hand. Following on from its enterprise event run for staff and students in geography, earth and environmental sciences, the GEES Subject Centre has developed a free resource pack to support curriculum development. This pack includes discipline-specific curriculum examples, case studies of graduate entrepreneurs and notes, comments and information from staff and students.

## **I(c) What does enterprise/entrepreneurship mean to the GEES disciplines?**

The following quotes are from Geography, Earth and Environmental Sciences staff and students who attended the GEES Subject Centre 'Enterprise, Skills and Entrepreneurship' event in January 2005. They were asked to write notes on 'What is entrepreneurship?' Their answers follow common themes including:

- Ideas
- Inspiration
- Motivation
- Innovation
- Risk

There is also occasional reference to business skills and knowledge but largely the GEES 'definition' of entrepreneurship relates to personal attitudes and aptitudes. This view of entrepreneurship matches the support needs of students as discussed in the 'Student Interest' section (I(f)), in that they require support to boost their skills, confidence and idea-generation.

### **What is entrepreneurship? Students' responses**

*"Innovative ideas leading to an independent business venture."*

*"Developing ideas for and running a successful business – innovation in business, making most of scope to grow the business."*

*"Having your own ideas on how something should be done and the motivation and ability to put it into practice. Not toeing the line – being narcissistic."*

*"Starting up your own business, with innovative ideas and goals."*

*"Being inspired/motivated to initiate plans for your own business, to sell your ideas - seeing an opportunity to fill."*

*"Developing ideas and exploiting them."*

*"The use of business and academic skills for personal as well as social benefit."*

*"A relationship in business, skills to develop your own career."*

*"Way to cooperate and encourage people working in teams."*

*"Materialise your business ideas – creating your own business."*

*"Help to solve a problem or satisfy a business need."*

*"Self employment – owning own business. Being able to develop ideas with reality of a successful business, creating own opportunities with and for others and self."*

*"[Before workshop] Initiative/originality in the line of business. Individual development of ideas/plans. Riddled with risk."*

*"[After workshop] Taking a chance and being able to convince those around you that it really can change things."*

## What is entrepreneurship? Staff responses

*“Innovation to achieve a specific goal, allows risk taking.”*

*“Business initiation that has a higher than normal risk associated with it (i.e. not all business development is necessarily a result of entrepreneurship). It’s also your risk, mainly.”*

*“Innovation. Determination. Leadership. Risk-taking. Resilience. Vision. Ability”*

*“To have or develop the skills to establish a business oriented mind set.*

*“Thinking out of the box.”*

*“Creativity.”*

*“Ability to take ideas, own or others, and convert into a product or service which is profitable.”*

*“A serial assembler of bits and pieces into a previously unconsidered commercial whole.”*

*“Skills, attributes and competencies associated with entrepreneurs applied in the environment helps to foster ‘entrepreneurial’ approach by staff and students for development of: transferable skills; employability skills; creating and building for a successful future”*

## Examples of GEES-graduate entrepreneurs

Studying Geography, Earth or Environmental Sciences in higher education provides a thorough knowledge and understanding of the Earth, its people and environment. Through team projects, simulations, field courses, lab work and a variety of other learning experiences, students also have the opportunity to develop a range of work-related skills. Thus GEES graduates are well equipped to pursue a wide variety of careers both in these subject areas and beyond. During this project we have identified many entrepreneurs who have graduated from the GEES disciplines. The types of businesses they have set up include:

Subject-related, for example:

- Environmental consultancy e.g. <http://www.terraqueousltd.co.uk/>
- Geophysical site investigation services e.g. <http://www.terradat.co.uk/>
- Geological surveying
- Field equipment design and manufacture e.g. <http://www.cambridge-insitu.com/>
- (eco tourism, geological tours) e.g. <http://www.fossilwalks.com/>
- Recycling e.g. <http://home.btconnect.com/fairfield/fairfield/fcomposting.htm>
- Marine conservation

And beyond, for example:

- Web development e.g. <http://www.ethicalwebsites.com>
- IT training e.g. <http://www.compu-train.co.uk>
- Retail
- Freelancing (tv production; filming; science journalism)

Four case studies of GEES graduate entrepreneurs are available in Section 4.

## I(d) Enterprise or entrepreneurship? Some definitions

There was some debate at the January workshop over the definition of entrepreneurship. It was agreed that a true 'entrepreneur' might be seen as "A serial assembler of bits and pieces into a previously unconsidered commercial whole", as one colleague put in his definition. By this definition, the majority of GEES students are less likely to be 'entrepreneurial' than 'enterprising' and 'interested in running their own business'. Whichever definition we personally prefer and whatever types of students we have, the basic skills and knowledge development needs are the same.

The following definitions have been offered as part of the Higher Education Academy's generic work in this area (see <http://www.heacademy.ac.uk/951.htm>):

**Enterprise** involves measures to encourage individuals to become entrepreneurs and equip them with the necessary skills to make a business successful (Mason, 2000). In essence, enterprise is about spotting opportunities, creating new ideas and having the confidence and capabilities to turn these ideas into working realities (Nixon, 2004).

**Entrepreneurship** is an activity which leads to the creation and management of a new organisation designed to pursue a unique, innovative opportunity (Hindle & Rushworth, 2000). Fundamentally, it is about using enterprise to create new business, new businesses and 'can-do' organisations and services (Nixon, 2004).

**Intrapreneurship** is the art of working within an organisation to effect change, by developing new ideas, procedures or products, by innovating practice and thereby enhancing the business (Kneale, 2002).

**Social entrepreneurship** involves using entrepreneurial skills for the public good rather than for private profit, that is using imagination to identify new opportunities and determination to bring them to fruition (School for Social Entrepreneurs). Social entrepreneurship is used to describe forms of activity and people who are socially innovative, or 'enterprising' in the non-economic sense of the word. Hence, the label 'social entrepreneur' has come to apply to any individual seeking to effect social change through creative and innovative ways (National Council for Voluntary Organisations (NCVO)).

The Higher Education Academy (and the GEES Subject Centre) has a very holistic view of enterprise, entrepreneurship and intrapreneurship which is encompassed in the following definition:

"Enterprise is an inclusive concept which provides both the context in which subject disciplines can be explored, as well as an approach, through skill development, which can be taken to the exploration and discovery of a discipline. In these respects, it can provide a challenging environment within which to explore a variety of teaching areas (the small business context) as well as provide a dimension to learning, that of developing the skills of being enterprising, which provide students with an attitude towards learning, which rewards and supports innovation, change and development.

Enterprise supports the recognition of new market opportunities as well as develops the opportunity to change and develop at the individual, business and industry/sector levels. This includes the exploration of new ideas and developments from a corporate perspective (as intrapreneurship) as well as the creation of new ventures, social programmes and the exploration of new opportunities." (Price, 2004)

Definitions of further terms relating to enterprise and entrepreneurship can be found in the Glossary in Section 2.



## **I(e) How can enterprise/entrepreneurship be supported through the curriculum?**

Including these skills in the curriculum need **not be an added burden but can provide an opportunity to:**

- Be more creative within the curriculum
- Teach content with more relevance to real-life scenarios.

Examples of modules, projects and short tutorial exercises from geography, earth and environmental sciences are provided in the body of this resource pack, together with more discursive papers on embedding enterprise/entrepreneurship in the curriculum.

Discussions with staff in the GEES disciplines and with colleagues involved in supporting graduate start-ups, has suggested that higher education can support entrepreneurship in two ways.

### **Developing and enhancing skills, aptitudes and attitudes**

This includes providing students with the opportunities and motivation to:

- work creatively and independently;
- develop research, analysis and critical thinking skills;
- practice time, project, risk and people management skills;
- be able to work in unfamiliar environments and respond to unexpected events;
- better understand their own capabilities and traits and to enhance their confidence in their own abilities.

This dimension of entrepreneurship sits well with current skills development within the GEES disciplines and is often manifest within team projects, dissertations, field and lab work. Such skills are invaluable to all graduates whether they wish to set up their own businesses, work for an employer or research/teach in secondary or higher education.

The resources developed by this project will provide additional support to higher education staff looking to include entrepreneurial skills more explicitly within their curricula. (See also student support in Section I(g) – this is what they want too.)

### **Business and financial knowledge and understanding**

Many staff in the GEES disciplines are less well equipped to provide detailed information on the business and financial knowledge required to set up a business. However, supporting the students in the above skills areas empowers them to seek out and take advantage of other sources of information. Many, if not all, higher education institutions offer resources (e.g. booklets, workshops, courses, guidance and advice) to support entrepreneurship through careers services, enterprise units and business schools. In addition, several universities now have graduate start-up facilities, including incubator units, which can directly support new ventures.





## I(f) Student interest in entrepreneurship skills

Fifteen students attended the GEES Subject Centre's two-day residential workshop on 'Enterprise, Skills and Entrepreneurship' in January 2005. In order to win a free place on the workshop, each student was required to write a short statement detailing why they wished to attend and what benefits they hoped to gain from it. These statements provide a revealing insight into the practical and 'blue skies' motivations behind student career choices.

Some of their statements are available in this pack and make very interesting reading. These students come from a variety of universities and it's not unlikely that there'll be some just like them in your department. If you only have five minutes to spare, just pick one at random or have a look at the quotes below for some inspiration:

Despite the impact of student loans and an increasingly consumer-driven society, the main motivations for these students to set up their own business are environmental concerns and the desire to 'make a difference'; that is, social/environmental entrepreneurship. For example:

*"I want to reduce fossil fuel dependence and see starting business/social enterprises as the best way to achieve this through supplying affordable alternatives to the inadequate services available."*

*"[To] contribute to solving some environmental problems with a realistic market friendly way."*

*"I believe that 'we' can make business more sustainable or 'green' and I think that there are spaces in the market place for ideas of mine."*

*"I would like to set up a global natural hazards consultancy or join an existing consultancy...It would combine my interest in earth sciences with my ambition of setting up a business. I would like to make a difference by hopefully helping people, communities and governments."*

*"...my long range goal is to start an environmental consultancy...Additionally, one of my greatest concerns is to develop educational programs for Vietnamese people at all ages. I realise that improving human awareness of the significance of the ecosystem and its function is the best way to prevent the nature from being exhausted and polluted, so as to obtain sustainability."*

*"...my interests lie fundamentally in the developing world and the challenges they face, but also in the attitudes and understanding of the developed world to these challenges. I see myself as a freelance researcher and spokesperson, working alongside charities and political agencies to challenge people's perceptions and promote a greater understanding, not only of the differences in our cultures, but also in the similarities of the challenges that we all face."*

*"I am also very interested in socially/ethically driven businesses, as I believe that businesses and entrepreneurs have a responsibility to the communities they serve."*

*"My goal is to set up an Outdoor Education centre, providing young people with the opportunity to participate in a wide range of outdoor pursuits. I would also like to provide high quality facilities to ensure an unforgettable and invaluable learning experience...to youngsters regardless of their race, background or class, at an affordable price that is accessible to all."*

Of course, they also have practical reasons for considering self-employment as a career option:

*"[I want to] take control of my life, being independent financially and work wise. Hoping to achieve better work life balance as well as improvement in quality of life."*

*"I would like the freedom/flexibility of running my own business."*

*"Like the idea of having my own business – alternative lifestyle."*

## **Student application statement**

### **Rosie Stephens, School of Earth Sciences, University of Leeds**

As part of my PhD research, I had the opportunity to attend a conference in Argentina in March. The conference fieldtrip was a botanical transect across the Andes. Whilst on this trip, I was struck by an idea for a potential business opportunity: to develop and organise botanical holidays, rather like the companies who run climbing trips in Nepal, or cookery schools in France but instead, running trips to visit regions of particular botanical interest. Small parties of tourists could visit the region accompanied by a knowledgeable, preferably local, guide, with pleasant walks into the field each day, good hotels, etc... promising regions include the Andes, New Caledonia, New Zealand, and even parts of the UK. This would be the perfect holiday for gardening fanatics and naturalists, and would be of interest to professional botanists, palaeontologists, and ecologists too.

Even if this dream doesn't ever happen I realise that, although it develops academic knowledge, a PhD like mine will not really give me scope to learn the day-to-day practical, creative, and business sides of life. As I do not wish to remain in academia after I graduate, I feel that I need to improve these kinds of skills to increase my employability. My first degree and subsequent PhD work taught me to think logically, develop an enquiring mind, and to enjoy solving problems. I have played small-team sports for many years and I work well as a team member. However, having been a team leader in the past, I'm aware that I have difficulty in delegating tasks and am prone to panic if things start going wrong. I enjoy giving carefully structured presentations and participating in small group discussions, but I find it difficult to talk to/in large groups, especially when giving an impromptu presentation or fielding questions; these are key skills for academic seminars, future job interviews and getting started in a business. I have lots of disjointed fragments of entrepreneurial skills, but I have little experience of, and few opportunities to learn about, good business sense, being creative and inventive in a non-scientific way, and taking risks. This course would be a perfect opportunity for me to both learn new skills, and to bring together my existing skills, to present a more business-like, entrepreneurial, employable individual.

## **Student application statement**

### **Armen Asyran, School of Earth Sciences & Geography, Kingston University**

Nowadays, we witness the convergence of science, technology and business. All of the parties recognise the vital role of synergy across the disciplines. For science and technology it has become imperative to look beyond its circles reaching out for business models of development in the highly competitive world. For instance, commercialisation of science & technology cannot be effectively implemented without a direct participation of the R&D centres, Universities and individual researchers involved in the creation of knowledge. In the meantime, to facilitate this processes, the above-mentioned institutions as well as the students should possess the certain set of business skills to ensure better understanding between the private sector and educational institutions. Needless to say, these developments channel additional funds for the R&D institutions enabling them to continue quality research and therefore motivate more young people into the science and technology related education.

This is why I consider this event to be of paramount importance for the Higher Education. I am interested in this event primarily because it represents a true challenge of introducing business skills into the science curricula. But the benefits will be colossal. Being a student myself, I see the impact that the lack of these basic career management skills has on the science students' self-confidence and readiness to plunge into the real-life. This is where we need change.

#### ***How do you think you will benefit from the event (why do you want to attend)?***

Most importantly, (being a participant in a number of entrepreneurship training sessions) I would like to learn about the experience of the higher institutions i.e. customisation of training materials for the field of earth sciences and geography. Also, I am willing to learn about the current approaches and plans of instilling the entrepreneurial spirit into students who oftentimes have very diverse backgrounds and professional skills.

#### ***What skills or attributes will you bring to the event (why would we want you there)?***

I have gained substantial experience of starting a IT company from scratch, going through all the processes i.e. market research, business development, projects management and operations. Yes, there were failures. And my team and me have worked hard to learn from all those mistakes and to build the knowledge base of the company and the set of best practices.

It is hard to start one's own business... It requires outstanding dedication and commitment and exceptional teamwork, plus business skills.

Now I am doing MSc in Applied GIS. The market for GIS services is rapidly growing and it is a great opportunity for young graduates (including me when I complete my current studies) to utilise their knowledge to the best of their benefit.

I will present my case of starting a company, and will share with participants our failures and successes of a 'business DIY'. I plan for my company to introduce GIS services in 1 – 2 years. There a lot of background work that needs to be done here, including planning, market analysis and a host of other things. This is what I would like to contribute to the event in the forms of presentations, discussions on GIS business opportunities, in the UK and worldwide.

#### ***How might this event complement other aspects of employability that you have already covered (or might cover in the future) in your course (e.g. key skills, career management)?***

I believe in the idea of creating new knowledge through human synergy. No matter how much I learn in the course, there is always more to learn from other people. Basically it's an endless process of learning. I plan to discover new knowledge on a variety of aspects through the discussions and brainstorming, and I expect to be surprised by the diversity of opinions and approaches on the subject.

## **Student application statement**

### **Dr. Victor Olugbemiga Olumekun, Liverpool Hope University College**

The workshop on 'Enterprise, Skills and Entrepreneurship: Enhancing the GEES Curriculum' aimed at providing an intensive training programme for people in geography, environment and related disciplines has been brought to my notice.

In response to the offer of free subsistence and training allowance for a selected few that could provide adequate justification for inclusion in the programme, I wish to indicate my strong interest to be offered the opportunity for a number of reasons.

Firstly, I wish to submit that I am a trained Plant/Crop Physiologist with a PhD in Plant Physiology, an MSc in Crop Physiology and a Bachelor of Science in Botany. I have been a university lecturer since 1987 and I have risen to the position of Associate Professor. In spite of these modest qualifications/achievements, my burning desire is to be directly involved in environmental management particularly as a consultant.

In search of this goal, I have developed keen interest in the environmental aspects of plant physiology so as to be relevant when environmental issues are being considered, since this is an emerging area particularly in the third world. Sadly, in spite of my knowledge of the issues involved in the field, I cannot respectably lay claim to competence since I was neither trained nor certificated in environmental management.

In order to remove such constraints I decided to take a year off my current job to register at Liverpool Hope University College for an MSc in Ecology and Environmental Management in preparation for a career in consultancy. It is my hope that as soon as possible I will set up an environmental consultancy outfit. I therefore believe that attendance of the workshop will present the best opportunity for me to progress in this direction, which I have chosen for myself.

It is my belief that the success of any enterprise lies in the foundation laid in course of its development. In view of the fact that this workshop offers superb training and enterprise development skills I believe this will be most beneficial in the establishment of an environmental consultancy. It therefore an opportunity that should not be allowed to pass by unexplored.

Unfortunately, I do not have sufficient means of assuring my attendance of the workshop if this opportunity is not offered to me. As a self funded student, without any other source of funding besides my personal savings, there is considerable pressure on my finances and I have had to seek odd jobs, far beneath my profile, in order to subsist, otherwise I would have opted to pay my way through.

A generous support will therefore serve in no small way to help me realise my desired goal, make me more relevant in the emerging scheme of things while relieving a lot of pressure that would have weighed me down. I therefore strongly appeal that consideration be offered to me in the award of the sponsorship.

## **Student application statement**

***Pratik Shah, Department of Geography, University of Cambridge***

Thanks for taking the time to consider my application to win a place at the forthcoming entrepreneurial weekend. I hope to hear from you soon!

My interest in this event is driven by me wanting to learn more about entrepreneurship and business opportunities. I have some basic business ideas, one of which I hope to start after graduation. Although I already have lots of working experience (12 months with National Air Traffic Services, 3 summers with a medium-sized company that develops property), I am always interested in learning more and keeping my options open for the future. For this reason, I have been attending since the start of this academic year, a course run by Cambridge University (<http://www.entrepreneurs.jims.cam.ac.uk/>).

I will benefit by continuing my business, personal and social development amongst people that also have the same desire as I do to start and run a successful business. I am also very interested in socially/ethically driven businesses, as I believe that businesses and entrepreneurs have a responsibility to the communities they serve. The course and attendees will benefit from my growing knowledge of business and finance, my broad geographical studies (I specialize in the human/social/economic side of geography), and my highly ambitious and enthusiastic nature.

I sincerely believe that as a geographer I am very well placed to be one of the most successful people in industry. The simultaneous width and depth of the course allows me both freedom to study various interlinked topics, but at an expert level. With this model in mind, my motivation is to be the best in the various areas that I enter. The course will extend my ideas and should help me integrate with like-minded students and teachers to help encourage and develop expertise in required fields. I am both a very co-operative team player, but also have the ability to work individually when necessary (references from employers available if requires). I want the course, but the course needs me!

## **Student application statement**

**Scot Devlin, Department of Earth Sciences, University of Leeds**

***What has prompted your interest in the event (e.g. you've got a business idea, you think you might want to start a business when you graduate, you want to keep your future employment options open etc.)?***

Setting up my own business has always been a passion. I started selling sweets and yo-yo's in the playground when I was 10 years old. I was also involved in a business during A-level (Youth Enterprise Scheme). I have helped a small company promote skis, skiboards and roller hockey equipment (Triple Air Productions).

One of the reasons that I chose to study geophysics was because of a business idea. I would like to set up a global natural hazards consultancy or join an existing consultancy. I envisage a company, that governments/local agencies could consult for advice on possible natural hazards. Some areas of advice could be as follows:

- The likelihood of occurrence of a natural disaster
- Measures to avoid or reduce risk of environmental damage
- Best possible course of action to avoid loss of life and resources, i.e. when/if evacuation is necessary
- Monitoring of risk factors
- Help dealing with natural disasters after occurrence

I'd like to be able to analyse a range of natural hazards; earthquakes, typhoons, flooding, volcanoes etc. I hope to fulfil this dream. It would combine my interest in earth sciences with my ambition of setting up a business. I would like to make a difference by hopefully helping people, communities, and governments.

***How do you think you will benefit from the event (why do you want to attend)?***

I am really impressed with the content of the website and the information about this event. I would love to attend and develop skills such as problem solving and negotiating skills, and gain entrepreneurial knowledge. It will be really interesting with a mix of students and lecturers. It will be an great opportunity. I would also like to enhance my teambuilding skills. I feel this this course would benefit and compliment my studies at university.

***What skills or attributes will you bring to the event (why would we want you there)?***

I am enthusiastic and creative. I would help to contribute to an exciting team environment. I believe my best attribute is the ability to get on with all types of people. I have recently read various entrepreneurial books. I would bring some knowledge and experience which I gained working with Triple Air.

***How might this event complement other aspects of employability that you have already covered (or might cover in the future) in your course (e.g. key skills, career management)?***

The geophysics degree will give me scientific knowledge, but I also want to learn business skills during my 4 years at university. This event would definitely help with all the skills and knowledge needed in starting my own business or joining a business.

## **Student application statement**

### **Melise Harland, School of Earth Sciences, University of Leeds**

My reason for wishing to participate in this event is that I am interested in starting a specialist consultancy in forensic wood identification on completion of my PhD. This would allow me to use the specialist research, enquiry and problem-solving techniques acquired during my PhD, whilst at the same time allowing me the freedom and creativity to grasp opportunities and take risks that are not available by being employed within a large organisation. Having already made enquires there is a demand for this service from the police, auctioneers etc but only one specialist unit carrying out this work in the UK.

I feel I will benefit from this event by being able to discuss with others the problems I have had gaining information on starting a small business and what information I would have found useful to have been given during skills classes. It would also allow me to see specific examples of skills I would need to consider e.g. business plan writing and hopefully provide information on where I can obtain further advice.

I have recently been presenting with a Science Communicators Award by the Research Council UK therefore I will be able to bring an ability to discuss issues clearly to the event. As a mature student I have the benefit of having worked within industry before undertaking my studies therefore I could also bring with me experiences from both education and employment.

Within the School of Earth Sciences at the Leeds employability skills are high on the agenda, mainly focussing on employment within companies or large organisations. There are several transferable skills covered that are applicable to self-employment such as 'real life projects,' report writing and giving presentations. I feel that this event will complement these general employability skills already gained within skills classes and general work by giving more focus to self employment. I hope this will be achieved by providing information on issues that do not affect you if employed within a company e.g. dealing with tax, business planning and accounting. It is also hoped that the event will boost my enthusiasm and give me greater confidence to take this project forward whilst helping to create programmes that will benefit future students interested in self-employment.

## **Student application statement**

**Dawn Robins, Geography Department, University College Chichester**

I believe myself to be a highly self-motivating, enthusiastic and innovative individual with a passion for our planet and the cultural diversity of all those who inhabit it. I have strong communication skills and the ability to motivate and inspire others to challenge and succeed. I am focused and determined and able to channel my abundant energy into the task in hand to maintain momentum and see it through to a successful conclusion.

Yet sadly, I appreciate that I lack the clear direction for a strong career plan and also the confidence in my ability as a strategic manager to ultimately succeed, and hopefully, make a difference. That is why, when my Head of Department, Dr. Clegg, suggested I enter this competition, I saw the potential in what you are offering and the chance it would give me to build upon my strengths and enable me to gain confidence in my abilities as a future entrepreneur.

Although I have, as yet, no definite career plan, my interests lie fundamentally in the developing world and the challenges they face, but also in the attitudes and understanding of the developed world to these challenges. I see myself as a freelance researcher and spokesperson, working alongside charities and political agencies to challenge peoples perceptions and promote a greater understanding, not only of the differences in our cultures, but also in the similarities of the challenges that we all face.

By giving me this chance to improve my skills you will also be helping others within my department. As discussed with Dr. Clegg, I intend to disseminate the information gained from the seminar to my peers and enable them to benefit from what is clearly a unique opportunity to strengthen personal skills. As an almost defunct department (closure due in 2005 and less than 20 students remaining), our resources are limited, and yet we have a strong sense of unity and share experiences and knowledge to help develop the entire group.

I hope to start on a Masters course next year and feel that this workshop will enable me to focus my research and future learning more directly and effectively. I hope you are able to consider my application favourably and look forward to seeing you in January.



## **Student application statement**

### **Jan Nicholson, Sociology, Lancaster University**

I feel I should be chosen to attend as I am going to start up my own business after completing my MA in Travel and Tourism and I feel I will benefit greatly from attending this event.

I choose late in life to change career as I realised I wanted to pursue my hobby as a career. To do this I had to leave secure employment and complete a one year Travel and Tourism course at Furness College. This then allowed me to apply for a MA place at Lancaster University which I have just started in September. To fund my placement I am working as a part-time travel agent which is not the career I envisage being in in three years' time. I hope to use my first degree and work experience in the agricultural field to start up farm study tours in Cumbria mainly providing for the overseas market.

I feel attendance at the event will have tremendous networking potential to meet like minded students and staff. I also feel as a mature student I would have great expertise to bring to the event. In the past I have run my own outdoor business from home which fitted in well with my work as a mother. I realise now the skills I need to set up and run my own business in a travel fields may be different than those I used running my last business.

Last year I also completed my Certificate of Education which would help me be a better tour leader and I feel able to take part in any discussion which was being undertaken at the event.

My final reason for wanting to attend the event that it is being held in my old university city and it would be interesting to see how it has changed over the years.

## **Student application statement**

### **Nick Stantz, Environmental Change Institute, Oxford University**

Businesses are often regarded as part of the problem of environmental degradation rather than part of the solution. However, I believe that the relationship between business and sustainable development is not an oxymoron. From my experience in the renewable energy industry and the waste management sector, I realised that through pioneering research work, solutions to environmental problems could be found with high entrepreneurial potential.

As part of my degree in Environmental Sciences at the University of Brighton, I did an industrial placement in one of the biggest renewable energy companies in the UK. My most important achievement there was the introduction of Geographic Information Systems (GIS) for the identification of suitable sites for wind farm development. Before the application of GIS, crucial information about wind farm development such as wind speed and access to distribution network was in different, incompatible and paper-based formats. I used the unique analytic abilities of GIS to integrate all this information into a single, flexible digital map model which revolutionised the site selection process. My work there made me realise the potential of GIS as a strategic decision making tool but also that many organisations are not aware of this potential. From an innovation point of view, the above GIS model could be itself a marketable consulting service product offered to other interested organisations.

The other area that stimulated my interest was waste management, where there are numerous opportunities for innovation through reuse and recycling of materials. As a research assistant in the Waste and Energy Research Group at the University of Brighton, I worked on how to make automotive shredder residue (ASR) more suitable for commercial use, especially in the cement industry, and how to use the plastics component of ASR for developing new products (plastic flower pots).

Currently, as a postgraduate at the University of Oxford, I work on a project to install photovoltaic panels in my college buildings. This offers a good insight on how to deal with government agencies, prepare grants applications and identify funding opportunities, all of them useful skills for business development.

The above described examples demonstrate that I have developed some initial skills like the ability to identify where an improvement could be made in an organisation, provide an innovative alternative solution and persuade people to adapt to change. However, there are many other areas that I need to increase my understanding such as raising capital, negotiating skills, creating business plans, understanding financial control. I am confident that the GEES workshop will help me to acquire the necessary background on these business skills. As environmental entrepreneurship will play an important development role in the future, I would value the opportunity to participate in the GEES workshop as a preparation for this future.

## **Student application statement**

### **Uyen To Nguyen, Department of Environment, University of York**

I am a Vietnamese student doing a MSc at the University of York. I also have a Graduate Diploma in Environmental Sciences certificated by the University of East Anglia, Norwich. The reason why I address my interests to environmental sciences came from the severe environmental degradation in my country. Like other developing countries, Vietnamese economy is crucially based on natural resource extraction (mostly timber, oil and coal). This has led to the over-exploitation of resources which, in turn, has resulted in the mass destruction of the natural ecosystems. Having seriously concern about this issue, my purpose of studying in the UK is to further my knowledge in both theory and practice in environmental field so as to contribute to the protection activities in Vietnam.

After graduation, I will work firstly as a researcher for an NGO in Vietnam. However, my long range goal is to start an environmental consultancy. Its objectives would be: (i) to advise enterprises and individuals on environmental problems; (ii) to consult and assist the government in resource evaluation, EIAs and the like; (iii) to provide domestic and foreign investors with useful guidelines about the current environmental situation in Vietnam and the related regulations and legislations so as to reduce human impacts on the environment. Additionally, one of my greatest concerns is to develop educational programs for Vietnamese people at all ages. I realise that improving human awareness of the significance of the ecosystem and its function is the best way to prevent the nature from being exhausted and polluted, so as to obtain sustainability. To achieve these goals, one of the determined factors is how to work effectively and prove to be convincing. This is what draws my attention to this Entrepreneurship workshop.

What I expect to attain from this workshop is to improve my creativity and research skills, and to gain helpful guidelines in problem-solving. I also expect to develop my ability to co-operate and co-ordinate in business and communication. I wish to complete my existing skills and to find out my strengths and weaknesses in practice through this course. I strongly believe that this workshop is a great opportunity for me to perceive full comprehension before actually working in the field of environmental sciences.

What I expect to contribute to this event is a combination of knowledge of environmental sciences and various economic techniques that can be applied in economic analysis and market research. By participating in this workshop, I hope to bring forward real evidences from my country about the typical portrait of environmental depletion. I am willing to do my best to make the workshop successful with my enthusiasm to learn. As one of the first students studying environment in Vietnam, I wish to have as many opportunities as possible to absorb knowledge in this field. By choosing me as a candidate you will not only offer the precious opportunity to me myself but there would also be a chance for this knowledge to be propagated in my country.

## I(g) What support do students need?

It is sometimes argued that ‘true entrepreneurs’ will not need additional support as they will ‘naturally’ have the drive and motivation to find their own way. For a very small minority of students this may be the case. However, there are also other students out there who are fully capable of setting up their own businesses and have some great, enterprising ideas but who need a little guidance and confidence-boosting to get them started.

At the beginning of the GEES Enterprise, Skills and Entrepreneurship workshop, the participants were asked to note down what they wanted to get from the event. Their notes, together with their application statements, suggest that their main reasons for wishing to attend the event related to **enhancing their general skills base** and **developing self-confidence**.

These quotes are from some of the students’ application statements:

*“...although it develops academic knowledge, a PhD like mine will not really give me scope to learn the day-to-day practical, creative and business sides of life...I feel I need to improve these kinds of skills to increase my employability.”*

*“I am a motivated person. I want to learn as much as I can and whenever and wherever I can so that I am able to apply those skills that I have learned in the future, to contribute to society.”*

*“I am now looking to develop my personal and creative skills with a particular focus within the environmental sector. I also aim to develop my social entrepreneurial skills on the basis that I am managing an increasing number of charity co-ordinators.”*

*“I want to find out about support available. I hope to be able to leave with even more enthusiasm and confidence and some proper direction about my next steps. Meet new people and exchange ideas, have discussions, maybe keep in touch for morale etc.!”*

These are some relevant quotes from the students’ notes at the beginning of the workshop:

*“[I need] the confidence to take what ideas I have and give them a go, rather than just becoming another slave to the system.”*

*“[I want] methods of communication – practicalities – inspiration, motivation and most of all the belief that I can do it!”*

*“[I want] ideas for innovation and ways of thinking. See behind business – is it viable for me to get involved as a self-employed business entrepreneur? Do I really want to set up my own business?”*

*“[I need] more inspiration and enthusiasm to start. Know where to get help when problems arise.”*



**Enterprise, Skills and Entrepreneurship**  
***Enhancing the curriculum in Geography, Earth and***  
***Environmental Sciences***

## **Section 2: Information/Papers**

- (a) Embedding business start-up in the university curriculum
- (b) Considerations for embedding enterprise in the curriculum
- (c) Exploring gender issues in entrepreneurship
- (d) Examples of enterprise in the curriculum
- (e) A few useful websites
- (f) Higher Education Academy (generic) resources
- (g) University enterprise/entrepreneurship support units
- (h) Glossary of terms



## 2(a) Embedding business start-up in the university curriculum

**Pauline Kneale, University of Leeds**

### Introduction

Embedding Business Start-Up learning opportunities in the university curriculum presents a serious challenge because:

- There is limited room in the curriculum.
- Most academics want to teach their own research materials.
- There is no clear fit to the more traditional 'academic' subjects.
- Some students are clear that they are not interested in being self-employed.

On the positive side:

- The skills associated with start-ups are graduate skills that can enhance students' academic approaches.
- In the sciences and applied subjects (design, media) there are clear market links.
- Many students have experienced 'Young Enterprise' in their school days. They have already had the experience of setting up a small business, selling a product and closing it down. Their university experience can build on that.

### The whole module

The 'Business Start-Up' module, taught through group work, is established in a range of Business and Management degrees and may be accessed as an elective by students from other subjects. It appears in various guises: Entrepreneurship, Entrepreneurship in Business, Student Enterprise, Enterprise Management, Managing the Growing Business, and Innovation and Enterprise.

Such modules, although available through elective systems, are unlikely to be noticed by a student in film studies or textile design unless heavily advertised and tailored to their needs. Where I have asked students why they do not take it, comments include: *'this is really for business students'*; *'I don't have their theory background'*; and *'I can get better marks by staying with my own School's modules'*.

In my experience, the take up of elective modules across campus will be very small until such modules are called: Entrepreneurship for Earth Scientists, Entrepreneurship in the Music Business, Student Enterprise for Classicists, Enterprise Management in Politics, Managing the Growing History Business, and Innovation and Enterprise for Philosophers. This gives students a sense of ownership and a feeling that the module is for them, focussed at an appropriate level for their degree, background and skills. Such tailoring is extremely important. Teaching geographers for example the concept of CBA (Cost Benefit Analysis) will be already understood. A class of Fine Art or Hellenic Studies students would deserve a fuller explanation.

In tailoring start-up modules to specific academic subjects ideally one would envisage an enthusiastic Business Start-Up specialist academic sharing the teaching with staff from the departments involved so that there is a real link to the subject curriculum; the module is grounded in subject-based examples and the students see that their School values the module. A School specialist is in an excellent position to ask School alumni to contribute to sessions. The Business Start-Up specialist will be involved with, or at least aware of, colleagues in Careers and Innovation, the University third arm activity and current campus start-ups bringing a real feel of excitement to the process.

This type of module is probably best taught at level 2 of the undergraduate curriculum when level 1 skills are in place and group work at HE level is understood, but is early enough to influence employment applications and choices made in the final year. It could also influence students' choice of final year dissertation topic. In my view this is an option module.



## **Integrating into modules**

Business Start-Up is potentially one theme in the 'skills, careers and employability' element of curriculum planning. Where either staff or students are reluctant to commit to whole module then a more subtle approach is to integrate materials. This approach has the attraction of capturing students for whom a Business Start-Up is 'too scary,' 'not me at all,' 'something I want to do in the future, but not now.' It is arguable that students benefit from the skills involved and some people will move to start-up their business sooner.

I would argue that all university degrees have a real world aspect. It is the approach in teaching that may root them entirely in intellectual discussion and erudite debate. Twenty years ago archaeology might have been in this group but the BBC Time Team changed all that. Simon Scharma and the History Channel have recently revitalised history. The Discovery Channel brings botany, zoology, geography, earth sciences and many other technical subjects to the table. There is enormous scope for setting a module around 'Popularising Hebrew Studies' or 'Doing a Time Team for Sociologists' or 'Creativity in Solid State Physics' which challenges students to work in teams, to be creative in developing approaches to taking their subject to a wider audience. The aim is to attract school pupils so that your University department has a future, and to capture the general public so that awareness is raised, capacity is built and there is increased scope for you to continue to work within your subject area later in life. Links can be made to employability issues more broadly through, for example, intrapreneurship and entrepreneurship skills and abilities. There is an opportunity to let students use their creativity to make, for example, Hispanic Studies relevant at a local or regional scale, and to think of organisations that are voluntary as well as money-making. Social entrepreneurship, starting up a voluntary, support organisation, will appeal more to some students.

More prosaically there is a great deal of benefit in making sure that present day students are introduced to alumni in their subject who are involved in both new and more established organisations. Students need to understand more about the culture of organisations and realise that they do have skills and attributes to offer. Inviting such role models to contribute in relevant lectures, careers modules and school seminar series has the potential to bring the real world closer to non-business students.

Embedding within modules will depend on current course structures. It is important that there is alignment in the curriculum design so that a student does not, for example, end up doing a business plan in each year. The following represent some possible scenarios although elements under each heading might also contribute to other headings.

### ***Within skills modules***

Activities from Business Start-Up curricula in preparing students to be better organised in their degrees could include those based around the skills agenda - time, management, flexibility, networking, negotiations, discussion, group report writing, problem solving and leadership. Enhancing all these skills is important in developing our students. During such sessions, and especially in the debriefing stage, students should be made aware that these are also graduate skills, and ones which will enhance their effectiveness in business and in starting businesses.

***Within careers modules***

Where there are modules that expressly address career opportunities, as in the Leeds University modules taught by Careers Centre staff, there is room in ten sessions to take two or three of these to raise awareness of start-up opportunities and related skills. Activities from Business Start-Up curricula in preparing students could include:

- Using entrepreneurship and intrapreneurship case studies to enhance skills such as networking and time management as well as business awareness.
- The advocacy of alumni and local start-up staff emphasising the role of graduate skills.
- Sharing learning from schools' Young Enterprise would be a useful link here.
- Some students will have worked in small companies and some will have parents who are entrepreneurs, capturing some of their reflections can be illuminating.
- Emphasise social entrepreneurship opportunities.
- Assessment activities as a group or individually might include researching: an enterprise, commercial opportunities; the changing nature of the workplace through interviews with employers and employees; or the workplace culture of different organisations, sources of business start up funding.

***Within introduction to research and introduction to dissertation modules***

The learning outcomes for the final year or taught Masters degrees may include, amongst others, to:

- Develop students' ability to complete an independent project.
- Develop skills involving research and analysis, critique of scientific papers, presentation of data, and report writing.
- Develop self-motivation, time management skills and hence and ability to work to a deadline.

These are also the main skills for independent business start ups. Where a curriculum makes reference to business applications and includes contributions from alumni, the enhancement of awareness should help students to identify issues around start ups as a topic for research. The use of entrepreneurship and intrapreneurship case studies as part of preparation will help students to engage with the appropriate skills agenda.

***Within tutorials***

Activities might include work around their Progress Files, researching a local start up company, working on entrepreneurship and intrapreneurship case studies, cases around creativity and innovation, raising awareness of work placement and internship opportunities in level 1 and 2, and many other topics as listed here.

***Within work placement, year in industry, work experience modules***

In this type of module students are expected to apply their degree-related knowledge and use a wide range of skills while working in a non-academic environment. Preparation for the experience could include:

- Asking a School graduate to present in the research seminar series.
- Using entrepreneurship and intrapreneurship case studies to bring out skills such as networking and time management as well as business awareness. The aim here is to broaden students' understanding of the experience they are embarking on, and to appreciate the broader workplace experiences than their immediate placement offers.

Assessment methods here could include taking and passing the Licentiate of the City and Guilds Institute.

***Within a personal study, research seminar, independent study type module:***

This is generally a final year undergraduate module which allows a student to research and write one or two essays on an approved topic, or in relation to a topic presented at a research seminar. Activities from Business Start-Up curricula in preparing students for this type of work could include asking a School graduate to present in the research seminar series. The suggestions under dissertation preparation and work placement modules are also relevant to this type of module.

**Useful sources of teaching and stimulus materials**

Activities around motivating student Personal Development Planning  
<http://www.geog.leeds.ac.uk/courses/other/performance/pdpindex.html>

Intrapreneurship Context case materials  
<http://www.geog.leeds.ac.uk/courses/other/casestudies/>

Context case studies  
<http://www.heacademy.ac.uk/938.htm>

Entrepreneurship skills for graduates  
<http://www.heacademy.ac.uk/Enterprise.htm>

Resources in the Imaginative Curriculum project  
<http://www.heacademy.ac.uk/853.htm>

White Rose Centre for Enterprise case materials  
<http://www.wrce.org.uk/>

**Contact details**

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## 2(b) Considerations for embedding enterprise in the curriculum

Extracted from the Higher Education Academy's resources

<http://www.heacademy.ac.uk/Enterprise.htm>

### What skills do we need to develop in future graduate entrepreneurs?

According to the business support development community, the graduate entrepreneur should have the following:

| KNOWLEDGE                              | ATTRIBUTES  | QUALITIES                |
|--|---|--------------------------|
| Marketing principles                   | Vision  | Conviction               |
| Company law                            | Has had to fit in with wide mix of people at university | Determination to succeed |
| Strategy                               | Creative  | Inventive                |
| Basic cost accounting                  | Specialist knowledge on a particular subject            | Flexible                 |
| Product or service                     | 'Workaholic'  | Energetic                |
| People skills                          | Smart appearance  | Staying power            |
| Specialist knowledge                   | Planning and organisation                               | Thoughtful               |
| Networking                             | Risk taker  | Transferable skills      |
| Microsoft Office Pro                   | Creative  | Resilient                |
| Budgetary principles                   | Leadership  | Stamina                  |
| Basic business acumen                  | Enterprising  | Sense of humour          |
| Product                                | Determination   | Flexibility              |
| Communication skills                   |   | New ideas                |
| Technical skills                       |   | Energy                   |
| Youth market                           |   | Listener                 |
| Know your market                       |   | Commitment               |
| Know your self                         |   | Vision                   |
| Knowing where to find help and support |   | Resourceful              |
|  |   | Be able to ASK           |
|  |   | Loyalty                  |
|  |   | Confidence               |
|  |   | Ambition                 |
|  |   | Outgoing                 |

Source: 2004 LTSN 'Professions' Event (views captured from lawyers, accountants, bankers and business support and development professionals).

### How does this impact upon course development?

- How does this match the skills development and personal development planning within your course aims?
- How can you adjust your course delivery to develop graduates with these essential attributes and qualities?
- How can you incorporate the required knowledge into your current course delivery?
- Or do you know where to 'signpost' your students to, in order to fill the gaps between HEI delivery and their needs?

## Thematic analysis of the module descriptors suggests the following approaches to developing enterprise skills (stand alone modules)

| Module Title   |  | Content   |
|--|--|---|
| General –<br>Conceptual                                | <b>Enterprise Theory</b>   | Historical context and importance of enterprise<br>Entrepreneurial trait analysis   |
| General –<br>Conceptual                                | <b>Entrepreneurial<br/>Strategies<br/>Enterprise in<br/>Business<br/>Developing<br/>Entrepreneurial<br/>Practice</b> | Exploring notions of enterprise, innovation<br>and creativity<br>Exploring entrepreneurial traits<br>Intrapreneurship (in corporations)<br>Models of enterprise |
| Policy   | <b>Enterprise –<br/>Context, Process<br/>and Policy</b>  | Economic contribution<br>US-UK comparisons<br>Hard and soft policy developments   |
| Personal   | <b>Career<br/>Development</b>  | Self development<br>Social role<br>Leadership   |
| Business<br>Start Up                                   | <b>Creativity and<br/>Innovation for/in<br/>Business</b>   | Innovation<br>Creativity<br>Idea generation/recognition<br>Recognising opportunity  |
| Business<br>Start Up                                   | <b>Commercialisation</b>   | Recognising (science based) opportunity<br>Viability and feasibility of idea /venture   |
| Business<br>Start Up -<br>Specialised<br>(High Growth) | <b>Financing an SME</b>  | Valuation techniques<br>Raising capital / venture capital<br>Multiple financing rounds<br>Exit strategies   |
| Business<br>Start Up –<br>Mature                       | <b>Running an SME</b>  | Team-working/negotiating and softer skills<br>Experience interlinking business functions<br>Run own operation (not for profit / profit)                         |
| Specialised  | <b>Knowledge<br/>Management</b>  | Understanding of knowledge as resource<br>Knowledge enterprise models<br>Integrate knowledge flow   |
| Conceptual   | <b>Enterprise<br/>Development</b>  | Enterprise culture<br>Entrepreneurial structures  |
| Practical  | <b>Growing an SME</b>  | Building a team<br>Crises of growth<br>Succession planning<br>Failure – symptoms and management   |
| Social<br>Entrepreneur-<br>ship                        | <b>Social Enterprise</b>   | Understanding of the social sector<br>Identify gaps and needs<br>History / future trends<br>Finance for social ventures<br>Planning – social modelling          |
| Specific   | <b>Consultancy</b>   | Consultancy skills  |
| Specific Elements                                      | <b>Design Enterprise</b>   | Applying for funding<br>Gaining premises  |
| Specific Elements                                      | <b>E Commerce</b>  | Business start up with internet emphasis  |

## Typical assessment options

| Content Area                    | Assessment  | Discipline origins of delivery methods |
|---------------------------------|---|--|
| General – Conceptual            | Exam<br>Essay   | Traditional                            |
| Policy                          | Exam<br>Essay   | Traditional                            |
| Personal                        | Panel debate<br>CV / Business plan                    | Careers models of delivery             |
| Business Start Up               | Business plan<br>Group presentation<br>Essay          | Business School modes                  |
| Business Start Up - Specialised | Critique of business plan<br>Group presentation       | Business School modes                  |
| Business Start Up – Mature      | Individual case summary<br>Business plan continuation | Business School modes                  |
| Additional % from               | Class participation                                   |  |
| <i>EMERGING</i>                 | <i>Personal Development Plan</i>                      | <i>New initiative</i>                  |

## Learning modes

Gibb (1993) found that the learning mode for enterprise was the opposite of the didactic approach commonly used within higher education institutions.

| Didactic  | Enterprising   |
|---|--|
| Learning from teacher alone<br>Passive role as listener<br>Learning from written texts<br>Learning from 'expert' frameworks of teacher<br>Learning from feedback from one key person (the teacher)<br>Learning in well-organised, timetabled environment<br>Learning without pressure of immediate goals<br>Copying from others discouraged<br>Mistakes feared<br>Learning by notes | Learning from each other<br>Learning by doing<br>Learning from personal exchange and debate<br>Learning by discovering (under guidance)<br>Learning from reactions of many people<br>Learning in flexible, informal environment<br>Learning under pressure to achieve goals<br>Learning by borrowing from others<br>Mistakes learned from<br>Learning by problem solving |

Source: Gibb (1993), Didactic and Enterprising Learning Modes

- How does this link with your existing delivery?
- What changes might you easily make?
- What support/materials/advice to you need to make those changes?

**What do you need most to get teaching in enterprise and/or to stimulate enterprise learning?**

|  |   |
|--|---|
| Please rank these in one of three categories - either: |   |
| <u>“Y”</u>   | <i>“Yes - I want this!”</i>   |
| <u>“?”</u>   | <i>I am unsure why I would want this / what this is for!</i>                            |
| <u>“X”</u>   | <i>I do not want this</i>   |
|  |   |
|  | Understanding of the subject area (business start up) itself                            |
|  | Understanding of what students will need to set up a business themselves                |
|  | Understanding of skills required (to develop within existing course)                    |
|  | Overheads on specific business topics ( <i>indicate which</i> )                         |
|  | A ‘toolkit’ to dip in and out of  |
|  | Examples of businesses which have started up (in my subject area)                       |
|  | An ‘ethos’ for delivery   |
|  | Techniques to inspire and motivate  |
|  | Module descriptors/outlines   |
|  | Subject specific information for your discipline  |
|  | Role models   |
|  | Games and simulations   |
|  | Sources of support – academic   |
|  | Sources of support – for students wanting to start up                                   |
|  | Examples of how this has been achieved within my subject area                           |
|  | Guest speakers – where do I get them from?  |
|  | Advice for determining quality of guest lecturer  |
|  | Checklist to determine quality of materials in the future                               |
|  | Signposting for staff to advise interested students where to go for professional advice |
|  | Assessment advice/options   |
|  | Assessment examples   |
|  | Videos  |
|  | Enterprise learning through placements / work experience                                |
|  | Problem-solving enterprise tasks  |

## Options for the incorporation of enterprise skills into the course curriculum

|               | Stand Alone Modules  | Embedded Input  | Extra Curricula Activities  | Young Enterprise / Graduate Enterprise  | 'Live Wire' Model   | SFEDI*  |
|---------------|--|---|---|---|---|---|
| <i>Detail</i> | Accredited module<br>Dedicated learning<br>Quality assurance   | Experience enterprise within subject discipline / through content   | Activities ('bar wars'; S.U events; clubs and society events)   | Developed from school model – to set up and run a business, then close it down<br>In 2 <sup>nd</sup> Year<br>Can be embedded or stand alone   | 'Start up' focused<br>25 years experience<br>Reputation             | Set of externally accredited, Possible NVQ /Edexcel award                       |
| <i>Pros</i>   | Control<br>Track students<br>Attract 'interested' students<br>Potential start ups?   | 'By stealth'<br>Creates discipline focused application of enterprise  | Self selected<br>Cross subject engagement<br>Opportunity to re-engage with enterprise   | Experience all aspects of business development<br>Ability to incorporate into assessment  | Can be developed for HEIs Generic programme                         | Clear pathway<br>Externally-recognised criteria<br>Generic programme            |
| <i>Cons</i>   | Appropriate staffing<br>Internal HEI models of finance limit cross university<br>Opportunities for uptake. Requires buy in from other depts<br>Can perpetuate 'not-time' myth<br>Assessment issues<br>Alignment issues | Appropriate staff development and support<br>Difficult to create developmental learning (alignment within award)<br>Assessment issues | Minority of students<br>Difficulty in determining quality of experience<br>Enterprise element and learning not explicit<br>Variety in quality of experience | £200 to register for the programme<br>Liability (insurance) for business start up – needs exploring at HEI within own regulations<br>Students have increasingly experienced this at school – limited learning and development | Requires dedicated course development (resources implications)      | Requires dedicated course development (resources implications)                  |
| <i>Use</i>    | Increasing   | Developing  | Varies – quality/standard/ level of enterprise  | 37 universities<br><a href="http://www.graduateprogramme.org.uk">http://www.graduateprogramme.org.uk</a>  | <a href="http://www.livewire.org.uk">http://www.livewire.org.uk</a> | New - developing<br><a href="http://www.sfedi.co.uk">http://www.sfedi.co.uk</a> |

\* Small Firms Enterprise Development Initiative



## Notes

HEI experience indicates two types of embedding: (a) embedding enterprise materials/content/coverage within the module or programme at the time of development; and (b) embedding 'by the back door' through 'adding in' enterprise elements into a module that has been around for some time. The difficulty with the latter is that, because the content is not documented within module/programme descriptors, it is difficult to 'police' in terms of quality and internal alignment of courses.

Extra-curricula activities are a useful way of moving towards embedding materials into the mainstream of programmes/modules. For example, the University of Newcastle supported extra-curricula activities that, through student demand, now form part of their mainstream provision in certain areas. For extra-curricula activities to become 'cemented' into the mainstream provision requires a commitment from schools/departments that activities will be accredited or valued in some way towards the final award.

## 2(c) Exploring gender issues in entrepreneurship

### Pauline Kneale, University of Leeds

#### Introduction

This is a short briefing to raise the issue and offer some suggestions. It is difficult to address gender and class, especially as research suggests that amongst students there are no gender differences in aspirations and expectations. They are equally as likely to be considering setting up a business and the areas they consider are broad. The difference in uptake comes later in life. However it is worth raising the basic facts and is a potential research/essay topic. The Prowess web site, and Heilman and Chen (2003) are good starting points.

#### Some background to the issues

These materials are taken from various parts of the Prowess Site: <http://www.prowess.org.uk>

#### ***Entrepreneurship is male dominated***

Men are still twice as likely as women to be involved in entrepreneurial activity or to be thinking about it, according to a new report from the Small Business Service. 'The SBS Household Survey of Entrepreneurship' is based on a survey of over 10,000 people, looking at UK attitudes towards self-employment. See <http://www.sbs.gov.uk/default.php?page=/analytical/default.php>

The UK Global Entrepreneurship Report (GEM UK 2001) found that:

- Men are around two and a half times more likely to be an entrepreneur than women
- The peak age group at which people start businesses is 35-44 for men and 45-54 for women – which suggests that having children may be a factor
- Women are relatively more likely than men to believe that they will create no jobs in the next five years
- Men are nearly twice as likely to think that they have the skills to start a business as a woman

All these facts indicate some clear differences in factors which affect the attitudes and motivations of women – and therefore clear implications for the type of support and funding which women require to get started. See <http://www.gemconsortium.org/>

Extract from 'Female entrepreneurship rises – but barriers to entry remain':

*Compared to our global competitors the UK ranks 7th behind countries including the US, Canada, Greece and Spain. For every ten male entrepreneurs in the UK there are four female entrepreneurs – a gap that is wider than Canada, the US, Germany, the Netherlands, Belgium and Italy.*

Press release 8 June 2004 [http://www.chamberonline.co.uk/press\\_centre/press\\_08062004/view](http://www.chamberonline.co.uk/press_centre/press_08062004/view)

#### Student research suggestions

A mini project/essay could cover the following themes:

- Explore the literature on the barriers to practical entrepreneurship.
- Exemplify the factors that encourage and discourage a business start up?
- To what extent is there a level playing field in entrepreneurship?
- Are there gender/ethnic aspects to entrepreneurship?
- For every ten male entrepreneurs in the UK there are just four female entrepreneurs. Explore the reasons behind this imbalance in start ups.

## Sources to check include

Small Business Service <http://www.sbs.gov.uk/default.php?page=/analytical/default.php>

Prowess <http://www.prowess.org.uk> an organisation that supports women entrepreneurs, log into their research area

Global Entrepreneurship Monitor <http://www.gemconsortium.org/>

Center for Women's Business Research <http://www.nfwbo.org/>

## Some references to start with

Anna, A.L., Chandler, G.N., Jansen, E. and Mero, N.P. (2000). Women business owners in traditional and non-traditional industries, *Journal of Business Venturing*, 15: 3, 279-303

Carter, S Tagg, S., Ennis, S. and Webb, J. (2002). *Lifting the Barriers to Growth in UK Small Businesses* Report to the Federation of Small Businesses online  
<http://www.sbs.gov.uk/default.php?page=/analytical/default.php>

Gundry, L.K. and Welsch, H.P. (2001). The ambitious entrepreneur: High growth strategies of women-owned enterprises, *Journal of Business Venturing*, 16: 5, 453-470

Harding, R. Cowling, M. and Ream, M. (2004). *Achieving the Vision - Female Entrepreneurship Report for Learning Skills Council on line*. [http://www.chamberonline.co.uk/policy/issues/women/womens\\_entrepreneurship.pdf](http://www.chamberonline.co.uk/policy/issues/women/womens_entrepreneurship.pdf)

Heilman M.E. and Chen, J.J. (2003). Entrepreneurship as a solution: the allure of self-employment for women and minorities, *Human Resource Management Review*, 13: 2, 347-364

Stroh, L.K., and Reilly, A.H. (1999). Gender and careers: present experiences and emerging trends. In Powell, G.N. (Ed.), *Handbook of Gender and Work* pp. 307-324 Thousand Oaks, CA: Sage.

Watson, J. and Robinson, S. (2003). Adjusting for risk in comparing the performances of male- and female-controlled SMEs, *Journal of Business Venturing*, 18: 6, 773-788

## On the ethnic front start with

Clark, K. and Drinkwater, S. (2002). Enclaves, neighbourhood effects and employment outcomes: Ethnic minorities in England and Wales, *Journal of Population Economics*, 5: 1, 5-29

Jones, T, and Ram, M. (2003). South Asian businesses in retreat? The case of the UK, *Journal of Ethnic and Migration Studies*, 29: 3, 485-500

Ram, M. and Smallbone, D. (2003). Policies to support ethnic minority enterprise: the English experience, *Entrepreneurship and Regional Development*, 15: 2, 151-166

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## 2(d) Examples of enterprise in the curriculum

This resource is collated from a variety of UK websites presenting examples of enterprise in the curriculum. It is offered without comment as a resource to stimulate GEES readers thinking about developing their own activities.

~/~/

### **Scottish Institute for Enterprise Who wants to be an entrepreneur?**

<http://www.sie.ac.uk/sie/emm.html>

All you ever wanted to know about entrepreneurship but have been too busy to find out! These interactive multimedia modules are designed to help you to be entrepreneurial in whatever career you choose to follow. They will help provide skills for work and skills for life.

The Entrepreneurship Multimedia Modules suite comprises of four core modules (1, 2, 3 and 4) and four support modules (5, 6, 7 and 8):

Module 1: Reference EMM1 - Recognising business opportunities

Module 2: Reference EMM2 - Resourcing new businesses

Module 3: Reference EMM3 - Managing business growth

Module 4: Reference EMM4 - New frontiers in entrepreneurship

Module 5: Reference EMM5 - Personal effectiveness and creativity

Module 6: Reference EMM6 - Entrepreneurial finance

Module 7: Reference EMM7 - Entrepreneurial marketing

Module 8: Reference EMM8 - Intellectual property

The suite of modules is targeted primarily at undergraduates new to the subject of entrepreneurship. However, the learning materials are available and suitable for use by all students, lecturers, alumni and commercialisation practitioners involved in the teaching and learning of entrepreneurship and enterprise in Scotland's universities.

The modules have been developed by the Scottish Institute for Enterprise (SIE) in collaboration with Scottish-based academics to enhance, encourage and develop entrepreneurship education in Scotland's universities.

### **Brief description of modules**

**Module 1: Recognising business opportunities.** This module concentrates on the concept and nature of entrepreneurship and the sources of entrepreneurial opportunities. The module introduces the student to the basic principles of designing an entrepreneurial organisation and helps him/her focus and reflect upon the entrepreneurial ambitions he or she might hold.

**Module 2: Resourcing new businesses.** This module concentrates on enhancing the student's capacity to determine the resource needs of a new business, to understand how to access these resources and assess these resources in order to exploit a business opportunity.

**Module 3: Managing business growth.** This module concentrates on contributing to the student's knowledge and understanding of strategies used for managing growth ventures and growing firms. Students are introduced to the basic models of growth and the growth strategies commonly employed by firms, as well as basic management techniques important to the growing venture.

**Module 4: New frontiers in entrepreneurship.** This module concentrates on showing why entrepreneurship can be successful in organisational settings other than independent business ventures and why this matters. It helps the student apply his or her entrepreneurial knowledge and skills to these settings and review his or her entrepreneurial ambitions.

**Module 5: Personal effectiveness and creativity.** This module concentrates on examining the personal skills required by the entrepreneur to be successful within the context of a start-up organisation and the particular skills involved in enhancing creativity both within themselves and others. It also examines the process of creativity and the factors that may promote creativity within the organisation.

**Module 6: Entrepreneurial finance.** This module concentrates on introducing the student to the most important financial reports required to be understood and utilised in a typical start-up business situation.

**Module 7: Entrepreneurial marketing.** This module concentrates on examining the key market concepts, methods and strategic issues required by the entrepreneur to be successful within the context of a start-up business and the particular skills involved in marketing new products and services and selling to new customers.

**Module 8: Intellectual property.** This module concentrates on examining the nature, role and function of intellectual property in the commercialisation process. It introduces the student to entrepreneurial Intellectual Property Rights (IPR) strategies and aspects of corporate IPR.

### **How can I access the modules?**

To access the modules and to discuss how best to study these learning materials please contact either the SIE Education Manager [t.douglas@sie.ac.uk](mailto:t.douglas@sie.ac.uk) or the SIE contact at your local university.

## University of Ulster Informatics Entrepreneurship

<http://www.infm.ulst.ac.uk/%7Escis/modules/com418ml.htm>

**Module Code:** COM418M1

**Module Level:** 2

**Credit Points:** 0

### Summary description

This module deals with issues relating to the identification, exploitation and development of new venture opportunities. The module aims to increase the students' understanding of entrepreneurship and develop his/her competencies in applying entrepreneurial skills in enterprise development. The module is divided into four distinct areas covering: the entrepreneurial process; identifying and exploiting the entrepreneurial opportunity; managing the resources necessary for the process; and finally the transition from idea to launch. Students also develop essential skills such as writing business plans, managing financial resources and team development.

### Rationale

Rapid changes in technology, political structures and lifestyles are creating new products, new markets and many more opportunities for new venture creation than ever before. Within established, seemingly successful businesses too, the need to maintain the entrepreneurial effort that characterised early beginnings remains a constant challenge. If a student is to be effective in this increasingly competitive employment market for graduates there is a need:

- To increase his/her level of understanding of entrepreneurship
- To develop his/her attitudes and behaviours as well as competencies in applying entrepreneurship in enterprise development

### Aims

- To build the students' awareness of entrepreneurship
- To provide them with a basic framework for assessing the viability of any innovative project or new venture or the development of an existing one.
- To give the student basic insights to the problems and issues associated with establishing and managing the development of a new or existing venture.
- To give students an opportunity to audit their personal entrepreneurial potential

### Learning outcomes

Upon the successful completion of this module a student should be able to:

- (i) Understand entrepreneurship, the entrepreneur and the entrepreneurial process.
- (ii) Understand the central role of creativity and innovation in entrepreneurship and the challenges of protecting new ideas.
- (iii) Identify steps required to research the potential for a new venture opportunity or innovation.
- (iv) Understand the components of a business/project plan and aspects of the planning process.
- (v) Identify the key resources, including finance, available for new venture creation.
- (vi) Identify the steps required in setting up a new venture.

## Content

**The entrepreneurial process.** The entrepreneurial process; The entrepreneur; The entrepreneurial environment.

**The entrepreneurial opportunity.** Opportunity identification; Analysing an opportunity; Exploiting the opportunity.

**The entrepreneurial resources.** Developing a business plan; Managing financial resources; The entrepreneurial team.

**After the launch.** The entrepreneurial transition; Entrepreneurial management; Further issues and concepts of life after the launch; Strategies for diversification.

## Learning and teaching methods

The module will be delivered almost exclusively via WebCT. An introductory lecture will be given at the start of the module to provide the students with a detailed overview of the module. Additional lectures may be scheduled as required. Additional lectures should ideally include a number of guest lecturers from an industrial background.

The module material will be presented online. The material will consist of a comprehensive set of notes, practice tests, individual and group exercises and links to relevant further reading. The practice tests will be provided to assist learners assessing their own knowledge of each subject area. Students will be directed to relevant materials and case studies both in the prescribed text books and on-line articles.

## Assessment

### Coursework Assignments: 100%

Students will undertake two computer-based assessments (in weeks 6 and 11) to enable them to measure their own understanding and ability in this module. Upon completion of the assessments, and within 24 hours, students will receive results and may attempt to correct their work by comparing their submissions with the correct results.

This assignment will measure the student's achievement of learning outcomes (i), (ii), (iii), (v) and (iv).

## Reading list

### Recommended:

Bott, F. et al. (2000). *Professional Issues in Software Engineering*, UCL Press. ISBN 0-74-840-9513

### Indicative:

BCS Code of Conduct. [www.bcs.org](http://www.bcs.org)

Joint Task Force of IEEE Computer Society and ACM. *Software Engineering Code of Ethics*, at <http://www.computer.org/tab/seprof/code.htm>

Myers, C. (Ed) (1995). *Professional Awareness in Software Engineering*, McGraw-Hill. ISBN 0-07-707837-3

Myers, C. et al (Eds) (1997). *The Responsible Software Engineer: Selected Readings in IT Professionalism*, Springer, ISBN 3-540-76041-5

**University of Aberdeen**  
**Master of Arts in Entrepreneurship**  
**Geography (01In8c70)**

<http://www.abdn.ac.uk/registry/courses03/contents.php>

This programme includes the following modules:

**MS 3016 Conceptual approaches to enterprise - 30 Credits**

*Course co-ordinator:* Dr A Anderson

*Pre-requisite(s):* MS 1502 and MS 2505

*Note:* Offered every alternate year starting 2002/03.

This course introduces students to theories of entrepreneurial development, concentrating on the four main contemporary departments of thought:

- (1) Sociological models: class, gender, ethnicity and life patterns.
- (2) Trait theories: psychological, psychodynamic and behaviourist models.
- (3) Business process approaches: stage models, process models, knowledge.
- (4) Business population theories: Schumpeterian models, population ecology.

Two 2-hour lectures per week.

Examination (80%) and course work (20%)

**MS 3024 New venture creation - 30 Credits**

*Course Co-ordinator:* To be arranged

*Pre-requisite(s):* Available only to students in programme year 3 or above.

*Note(s):* Offered in alternate years.

The essence of the course is that the students will develop a business plan for a new venture. This plan is intended to be the basis of an application for external finance for the new business and will include the following elements:

- The Business Idea (showing how new value will be generated)
- The Operational Plan (showing how the different elements of the business will operate, including premises, plant and personnel)
- The Financial Requirements (a statement of projected income etc)
- The Marketing Plan (demonstrating the market potential and how this might be realised)

While the plan will be a group project, the necessary elements will be taught in lecture/ seminar format.

Two 3-hour seminars per week.

(1) Group project presented by the student (20%); (2) Formal written business plan (group) (20%); (3) individual 3 hour examination based on a case study (60%). Parts 1 and 2 will include an element of peer group assessment; the group will be allocated a mark by the examiners, students will then allocate this mark amongst the group.



**MS 3523 Business Development - 30 Credits**

*Course co-ordinator:* Dr S Jack

*Pre-requisite(s):* Available only to students in programme year 3 or above who have passed at least 50 credit points in Management Studies at levels 1 and 2.

*Note:* Offered every alternate year.

This course will provide students with a knowledge and understanding of business development, from the start-up stages, through growth and internationalisation. A combination of case studies, group activities and lectures will be used. The case studies will involve looking at real business situations and how companies have developed, including local firms and non-UK firms. Students will analyse these case studies interactively to develop an understanding of the problems which were encountered and how these were overcome. The importance of personal, cultural and environmental factors and their interactions will be assessed.

Two 2-hour lectures per week.

Examination (80%) and course work (20%)

**MS 3522 Managing Creativity - Credits 30**

*Course co-ordinator:* To be arranged

*Pre-requisite(s):* Available only to students in programme year 3 or above.

*Note:* Offered every alternate year starting 2002/03.

This course introduces students to the concept of creative management at both an individual and organisational level. The course covers (a) individual creativity: different perceptions and values, styles and development, reflectivity and networking (b) organisational creativity: role of organisational creativity, approaches to fostering organisational creativity, the management of innovation, organisational renewal. Alongside enhancing student understanding creativity at the organisational level, the course involves significant skill development in terms of developing reflective skills, problem solving, and use of exploratory to develop creative approaches to strategy development.

Two 1-hour lectures and one 2-hour seminar per week.

Examination (80%), course work (20%).

**MS 3525 Innovation And Entrepreneurship – Credits 30**

*Course co-ordinator:* Mr M Freel

*Pre-requisite(s):* Available only to students in programme year 3 or above.

*Note:* Offered every alternate year starting 2001/02.

The course addresses the role of industrial innovation in economic progress generally, while placing particular emphasis on the place of Entrepreneurship and small firms within the process. After discussing the historical context, the course considers contemporary issues at the level of the firm, the industry and national and international economies. Whilst strongly grounded in theory the course enjoys considerable practical relevance.

Three 1-hour lectures and one 1-hour tutorial per week.

Examination (80%), continuous assessment (20%).

**University of Manchester**  
**Master of Enterprise in Environmental Innovation**  
**The School of Earth, Atmospheric and Environmental Sciences**

<http://www.seaes.manchester.ac.uk/ProspectivePostgraduates/TaughtMastersProgrammes/Programmes/MasterofEnterpriseinEnvironmentalInnovation/>

## **Rationale**

The environmental science and technology sector ranges from the fast-moving competitive marketplace for energy efficiency and effective solutions to air, water and land pollution, to the variably-paced greening of every other facet of human activity in the region. This programme represents an innovative approach to meeting these rapidly evolving needs in the context of environmental science and technology, through a partnership between the University of Manchester Environment Centre (UMEC) and the Manchester Science and Enterprise Centre (MSEC). This full-time, one-year programme has been designed to appeal to scientists and engineers who would like to develop their entrepreneurial skills and go on to either develop their own business or work for a company where enterprise and entrepreneurship is valued. It will also appeal to companies who want to use the course to develop their staff for more entrepreneurial roles, for example where an in-company project is ready for commercial development/exploitation.

## **Structure**

The programme focuses on an enterprise project, which is an exercise in technology transfer, combining scientific research and development, performed in a research group, with commercial work performed in the Centre's Enterprise Laboratories. Its taught element includes three science- or technology-based modules drawn from existing environment-related postgraduate programmes and three commercially orientated modules (the enterprise modules) that develop the student's knowledge and capability in technology transfer - knowledge that feeds directly into their enterprise project.

## **Aims**

The programme will advance the scientific understanding and technical skills of its students within an entrepreneurial framework of teaching and training in business skills. The programme will produce a stream of science students with awareness and experience of the technology transfer process, well prepared for work in entrepreneurial high-technology companies. Graduates will understand the nature of enterprise, its growth and development. They will also have developed entrepreneurial skills and have knowledge of the business development process from inception to establishment and long-term management.

**University of Leeds**  
**MA Environmental Enterprise and Innovation**  
**School of Environment**

<http://www.env.leeds.ac.uk/teaching/postgraduate4.htm>

Exploit the business opportunities in the environmental arena by setting up an environmental company selling innovative products or services.

- An innovative blend of environmental science, business know-how and enterprise experience in a one year taught Masters programme.
- Training in the skills and expertise for business entrepreneurship and environmental innovation.
- Experience in developing a product or service and setting up a company on environmental terms.

This new and exciting MA in Environmental Enterprise and Innovation is a one-year taught postgraduate programme with a chance to set up a company in the Environmental Enterprise Project (part-time option available). It is aimed at U.K. and overseas candidates who wish to become an environmental entrepreneur developing their own environmental products and services.

The MA will equip students with market analysis skills, the tools to develop an innovative product or service, and training in setting up a company. Students will acquire knowledge of environmental and sustainable development entrepreneurs as well as products and services. They have the skills to operate a company such as marketing, accounting and contract development. By the end of this programme, students will have the basis for starting and operating an environmentally innovative company.

### **Programme structure**

Students are required to take 180 credits during the MA, consisting of:

- 95 compulsory credits on core environmental enterprise and innovation issues;
- 15 optional credit module chosen from a range of subjects to suit the students' needs and interests; and,
- 60 compulsory credits project on setting up an environmentally innovative company.

### **Core modules**

- Environmental enterprise training
- Environmental market analysis and related business-environment innovation tools
- The environment, business and sustainable development
- Case studies in environment and business
- Environmental contract development and management
- Accounting for managers
- Marketing for managers
- Environmental enterprise project

### **Optional modules**

- ICT and environmental information and management
- Evolutionary economics
- Environmental law 1: the regulation of pollution
- Environmental law 2: key challenges in environmental pollution control
- European environmental law
- Pollution sampling and analysis
- GIS and the environment

## 2(e) A few useful websites

### **The Higher Education Academy Enterprise and Entrepreneurship Web Pages**

<http://www.heacademy.ac.uk/Enterprise.htm>

Contains generic resources to support embedding enterprise and entrepreneurship in the curriculum.

### **DTI: Knowledge Transfer Partnerships**

<http://www.ktponline.org.uk/>

Information for research organisations, HEIs, FE colleges, companies and graduates. Knowledge Transfer Partnerships enable HEIs to apply their wealth of knowledge and expertise to important business problems. For graduates: business-based training and personal and professional development, whilst managing a project within a company.

### **Scottish Enterprise**

<http://www.scottish-enterprise.com/>

Scottish Enterprise is Scotland's main economic development agency, funded by the Scottish Executive: "Our mission is to help the people and businesses of Scotland succeed. In doing so, we aim to build a world-class economy."

[http://www.scottish-enterprise.com/sedotcom\\_home/sig/academics/proofofconceptfund.htm](http://www.scottish-enterprise.com/sedotcom_home/sig/academics/proofofconceptfund.htm)

The Scottish Enterprise Proof of Concept Fund supports the pre-commercialisation of leading-edge technologies emerging from Scotland's universities, research institutes and NHS Trusts. It helps researchers to export their ideas and inventions from the lab to the global marketplace.

### **Invest Northern Ireland**

<http://www.investni.com/>

Invest Northern Ireland was formed in April 2002 by the Northern Ireland Government as the main economic development organisation: "As well as companies and individuals, we work with universities, FE colleges, local councils and other public sector organisations to achieve [our] objectives."

### **Go Wales: Self-Employment and Entrepreneurship**

[http://gwserver.bangor.ac.uk/e/guidance/new/student/self-employment\\_entrepreneurship.php](http://gwserver.bangor.ac.uk/e/guidance/new/student/self-employment_entrepreneurship.php)

These web pages provide an annotated list of really useful websites with information and resources on starting up your own business in Wales.

### **Shell LiveWIRE**

<http://www.shell-livewire.org/>

"Shell LiveWIRE helps 16-30 year olds to start and develop their own business and hosts a national competition for new business start-ups."

### **Channel 4: The REAL DEAL**

<http://www.channel4.com/life/microsites/R/realdeal/>

The REAL DEAL is: "the place where people with great ideas can find out how to stand on their own two business feet. If you already have a great idea or just want to know how to get an idea off the ground, we're here to help you work out how to do it. When you've got an idea, we'll show you how to put a formal business plan together, what kind of investment is out there and we'll help you pitch to potential investors."

**BBC 2: Dragon's Den**

<http://www.bbc.co.uk/dragonsden/>

“High drama meets big business with nail-biting results in Dragons’ Den, the new show that pits ambitious entrepreneurs against the Dragons – the crème of business talent. Watch as wannabe millionaires from all walks of life try to persuade the super-successful dragons to part with their cash.” This website also includes links to information on pitching and other entrepreneurial skills.

**Small Firms Enterprise Development Initiative (SFEDI)**

<http://www.sfedi.co.uk/>

“SFEDI is a Government-recognised body responsible for researching and disseminating what works best for small businesses.”

## 2(f) Higher Education Academy (generic) resources

The main (generic) resources for entrepreneurship are at <http://www.heacademy.ac.uk/enterprise.htm>

This is the front page of the HEA site which is the main resource for Teaching materials around Entrepreneurship:

The screenshot shows the HEA website interface. At the top, there is a navigation bar with links for Home, About Us, SiteMap, Contact Us, Vacancies, Search, Basic Search, and Advanced Search. Below this is a breadcrumb trail: Home >> Thematic work >> Employability >> Enterprise and entrepreneurship. The main content area is titled 'Thematic work' and features a section for 'Entrepreneurial Skills for Graduates'. This section describes a programme managed by the HEA (formerly LTSN) aimed at encouraging entrepreneurial skills among undergraduates through curriculum development. It includes a bolded statement: 'to facilitate the development of the undergraduate curriculum by putting in place the background information and materials needed to equip universities to teach the skills required to start and grow a business and contribute effectively to an organisation.' Below this, there are several questions designed to help users find relevant parts of the site, such as 'How can I integrate entrepreneurial skills into my curriculum?' and 'What is the difference between Entrepreneurship, Enterprise and Intrapreneurship, and where does social enterprise fit in?'. A sidebar on the right contains a menu for 'Enterprise and entrepreneurship' with sub-links like 'Teaching entrepreneurial skills', 'Defining the terms', 'Case studies of graduate entrepreneurs', 'Useful links', 'Discipline approaches', 'About the programme', 'Promoting entrepreneurship', 'Employability and enterprise home', and 'enterprise home'. The footer includes 'Copyright 2004' and 'Legal disclaimer'.



## 2(g) University Enterprise/Entrepreneurship Support Units

The information below was gathered from publicly available websites during December 2004. There may be more information on your institution's intranet site or via your careers service. Information was gathered only on the HEI's represented by participants at the GEES Subject Centre Enterprise, Skills and Entrepreneurship event in January 2005.

### University of Abertay Dundee

**Embreonix** is one of the country's most innovative graduate enterprise training and support programmes, designed to help students and graduates get their business idea off the ground - from initial idea to trading. Students and graduates who have a business idea they wish to develop and exploit will be supported to create their business in an action learning environment. The programme is undertaken for one full year, from September to September and we are open to all graduates from any University.

Contact name: Jackie McKenzie  
Tel: 01382 308920  
Email: [j.mckenzie@abertay.ac.uk](mailto:j.mckenzie@abertay.ac.uk)  
Website: <http://www.embreonix.com>

### University of Brighton

**Brighton Ideas:** a business ideas and entrepreneurs forum for staff and students.

Contact Name: Jennifer Wells (Business Services)  
Tel: 01273 643222  
Email: [business.services@brighton.ac.uk](mailto:business.services@brighton.ac.uk)  
Website: <http://www.brighton.ac.uk/audience/bus/entrepreneur.htm>

New Business Idea? **GRIST – Great Ideas in Science and Technology:** The GRIST scheme will give you a chance to turn your idea into a solid business proposal with a generous financial loan and regular access to a business mentor and advisor and university expertise. Brighton Vizion Accelerator – Creative and Media: If your idea is more media orientated, then access to the Brighton Vizion Accelerator can provide you with a fully funded and supported space in the Brighton Media Centre for six months, courtesy of the University of Brighton.

Contact Name: Peter Rock (Business Services)  
Tel: 01273 642602  
Email: [p.rock@brighton.ac.uk](mailto:p.rock@brighton.ac.uk)

### University of Cambridge

**The Centre for Entrepreneurial Learning (CfEL)** delivers a range of educational activities on the practise of Entrepreneurship, to inspire and build skills and 'spread the spirit of enterprise' within the University of Cambridge and beyond.

Address: 2nd Floor, Keynes House, 24a Trumpington Street, Cambridge CB2 1QA  
Tel: 01223 766900  
Fax: 01223 766922  
E-mail: [entrepreneurs@jims.cam.ac.uk](mailto:entrepreneurs@jims.cam.ac.uk)  
Website: <http://www.entrepreneurs.jims.cam.ac.uk/>



**Cambridge Enterprise**, part of the University's Research Services Division, exists to help University of Cambridge inventors, innovators and entrepreneurs make their ideas and concepts more commercially successful for the benefit of society, the UK economy, the inventors and the University.

Address: 2nd Floor, 16 Mill Lane, Cambridge, CB2 1SB  
Tel: 01223 760339  
Fax: 01223 332988  
Email: [enquiries@enterprise.cam.ac.uk](mailto:enquiries@enterprise.cam.ac.uk)  
Website: <http://www.enterprise.cam.ac.uk/>

## University College Chester

**Centre for Work Related Studies (CWRS)**: through The Enterprise Centre support is provided for student entrepreneurship and business skills.

Mail address: Parkgate Road, Chester, CH1 4BJ  
Visitor address: Blue Coat School, Upper Northgate Street, CHESTER  
Tel: 01244 392878  
Fax: 01244 403713  
Email: [cwrs@chester.ac.uk](mailto:cwrs@chester.ac.uk)  
Website: <http://www.chester.ac.uk/cwrs/index.html>

## University College Chichester

### Careers and Training Shop (CATS)

Address: Westgate Fields, Chichester, PO19 1SB  
Tel: 01243 786321 ext 2340  
Fax: 01243 539481  
Website: <http://www.chichester.ac.uk/facilities/careers.htm>

## Coventry University

**Careers Service / Enterprise**: information on courses, workshops and seminars to learn how to become enterprising and the invaluable steps required to develop your ideas. Attend the University's Skills and Jobs Fest 2004 and the Enterprise Fest 2005 for help and advice identifying ways in which you can gain enterprising skills and support.

Address: 1st Floor, Alma Building, Alma Street, Coventry CV1 5QA  
Tel: 024 7688 7323  
Fax: 024 7688 7321  
Email: [enterprise.ss@coventry.ac.uk](mailto:enterprise.ss@coventry.ac.uk)  
Website: <http://www.coventry.ac.uk/cms/jsp/polopoly.jsp?d=1193>

## University of Durham

**North East Centre for Scientific Enterprise (NECSE):** The Centre was established in early 2001 and is one of a number created nationally under the Science Enterprise Challenge initiative. This aims to raise awareness of the importance of business enterprise at all levels within Universities, including both students and staff. Assistance available includes intellectual property and legal services, sourcing of finance and venture capital, business development advice and mentoring, market assessments, and business incubation space.

Address: Block 2 (Ground Floor), Mountjoy Research Centre, Stockton Road, Durham  
DH1 3UP  
Tel: 0191 334 3210 / 0191 334 3208  
Fax: 0191 334 3211  
Email: [scientific.enterprise@durham.ac.uk](mailto:scientific.enterprise@durham.ac.uk)  
Website: <http://www.dur.ac.uk/scientific.enterprise/>

## Kingston University

Part of The Enterprise Exchange, **WestFocus** is an integrated innovation programme that aims to realise the commercial and social potential of a large, collaborative knowledge base and to ensure that higher education engages fully with business and the local community.

Contact Name: Jenny Ilsley (WestFocus Administrator)  
Address: River House, Swan Wing, 53-57 High St., Kingston-upon-Thames KT1 1LQ  
Website: <http://www.kingston.ac.uk/business-services/index.htm>

## Lancaster University

**Institute for Entrepreneurship and Enterprise Development:** Lancaster has a well established tradition of teaching entrepreneurship. They have run modules in this area since the late 1980s. Many students choose to include an element of entrepreneurship within their undergraduate degrees - each year they register around 500-600 students on to their various electives which are designed for second and final year students. Many are studying for degrees in business and management, but the modules are open to students from all faculties of the University.

Contact name: Julie Plank  
Address: Lancaster University Management School, Bailrigg, Lancaster LA1 4YX  
Tel: 01524 594743  
Fax: 01524 594743  
Email: [j.plank@lancaster.ac.uk](mailto:j.plank@lancaster.ac.uk)  
Website: <http://www.lums.lancs.ac.uk/Departments/Entrep/>

The **Lancaster Business Creation (LBC)** project is funded by the European Union and Lancaster University and seeks to assist University staff and entrepreneurs in the Lancaster and Blackpool area to launch their business ideas into operating companies.

Address: Business Enterprise Centre, Enterprise and Commercialisation Division, Bowland  
Tower South, Lancaster University Lancaster LA1 4YT  
Tel: 01524 593230  
Email: [psu@lancaster.ac.uk](mailto:psu@lancaster.ac.uk)  
Website: <http://www.bec.lancs.ac.uk/pages/showpage.php?id=26>

## University of Leeds

**Spark: University of Leeds 4 Graduate Start Ups:** A new initiative at the University of Leeds supporting self-employment and graduate business startup.

Contact name: Joel McKay,  
 Address: University of Leeds Careers Centre, 5-7 Cromer Terrace, University of Leeds, LS2 9JT  
 Tel: 0113 343 5028  
 Mobile: 07710 033 447  
 Email: [info@spark.leeds.ac.uk](mailto:info@spark.leeds.ac.uk)  
 Website: <http://www.spark.leeds.ac.uk>

**Knowledge Transfer:** support offered by the staff and departmental development unit (SDDU) through:

- offering a commercial awareness programme for academic and related staff who have an interest in commercialising the output of their research or other activities.
- offering an enhanced programme of courses for University staff who are, or might soon become, directors of University spin-out companies.

Contact name: Jim Baxter  
 Tel: 0113 343 2205  
 Email: [J.E.Baxter@adm.leeds.ac.uk](mailto:J.E.Baxter@adm.leeds.ac.uk)  
 Website: <http://www.leeds.ac.uk/sddu/Knowledge.htm>

**White Rose Centre for Enterprise** is based at the University of Sheffield and has staff at Leeds and York. The key aims of White Rose Centre for Enterprise are to increase the entrepreneurial skills and competency of graduates, postgraduates and research staff, and to give encouragement and support to technology transfer, particularly via the formation of new companies.

Contact name: Samantha Aspinall  
 Tel: 0113 343 3326  
 Email: [saspinall@postmaster.co.uk](mailto:saspinall@postmaster.co.uk)  
 Website: <http://www.wrce.org.uk/>

## University of Leicester

**Enterprise Learning:** At the University, there are many learning opportunities provided over the course of the academic year, including competitions and workshops. There is also a FREE joint University of Leicester / DMU student enterprise club 'Tuesdays on the Terrace' which gives you the chance to see what it is like to run your own business from those have done it themselves. They also work closely with the University Careers Service who give advice, and organise events and learning programmes on developing your enterprise and employability skills.

'Tuesdays on the Terrace' and the Enterprise Forum are open to staff and students. Enterprise Learning also provides resources and support to academic staff interested in including entrepreneurship skills in the curriculum.

Contact name: Anne Newman  
 Address: Institute of Lifelong Learning, 128 Regent Road, Leicester LE1 7PA  
 Tel: 0116 252 5926  
 Email: [sec@le.ac.uk](mailto:sec@le.ac.uk)

## Liverpool Hope University

### Career Development

Tel: 0151 291 3417  
E-mail: [careers@hope.ac.uk](mailto:careers@hope.ac.uk)

## Manchester Metropolitan University

### Careers

Email: [careers@mmu.ac.uk](mailto:careers@mmu.ac.uk)  
Website: <http://www.mmu.ac.uk/careers/>

**The Centre for Enterprise** has been developed mainly to allow local small businesses to take advantage of the knowledge and skills within the MMU Business School.

Website: <http://www.business.mmu.ac.uk/centreforenterprise/>

## Oxford University

**Isis Innovation** supports undergraduates and postgraduates with regular seminars on new business formation and a brochure on 'Starting a New Company'.

Address: Ewert House, Ewert Place, Summertown, Oxford OX2 7SG  
Tel: 01865 280830  
Fax: 01865 280831  
Email: [innovation@isis.ox.ac.uk](mailto:innovation@isis.ox.ac.uk)  
Website: <http://www.isis-innovation.com/>

**The Oxford Science Enterprise Centre**, based at the Saïd Business School, encourages entrepreneurship by giving staff, students and members of the local community the vision and skills to deal with the reality of business. Its eight-week, free 'Building a Business' seminars are regularly attended by more than 200 people. The Centre works closely with the student society, Oxford Entrepreneurs.

Address: Saïd Business School, Park End Street, Oxford OX1 1HP  
Tel: 01865 288800 (Switchboard)  
Fax: 01865 288805  
Website: <http://www.science-enterprise.ox.ac.uk/>

## University of Plymouth

**University of Plymouth Enterprise:** The Entrepreneurship Programme is practical and innovative, structured around the following levels of involvement:

- Teaching entrepreneurship - workshops equipping students and staff with practical entrepreneurial and enterprise skills
- Practical entrepreneurship - the opportunity to set up a business in practice, in a safe environment with private sector mentor support
- On-line support - a website of resource materials featuring fact sheets, success stories, events and points of contact
- Annual business plan competition

The University provides funding to support staff and students in developing their business ideas, with the potential of being made available to support entrepreneurial individuals from the wider business community. Currently this funding supports Proof of Concept Ideas and the Enterprise Fellowship Awards.

Contact Name: Dr Susan Boulton  
Tel: 01752 233556  
mail: sboulton@plymouth.ac.uk  
Website: <http://www.plymouth.ac.uk/entrepreneur>

## Queen's University Belfast

**Northern Ireland Centre for Entrepreneurship (NICENT).** The aim of the Northern Ireland Centre for Entrepreneurship (NICENT) in its widest context is to embed a culture of entrepreneurship within the universities. (NICENT) was established in October 2000 as a partnership between Queen's University Belfast and the University of Ulster and has more recently been joined by Loughry Campus (CAFRE). There is a particular emphasis on the delivery of modules and programmes for students and academic staff in entrepreneurship, idea development and business planning.

Website: <http://www.qub.ac.uk/rrs/webpages/nicent.htm>

## University of Southampton

**Institute for Entrepreneurship (IfE),** School of Management, has a number of key aims including to simulate an entrepreneurial experience in the teaching of entrepreneurship, innovation and small business; and to reach out to practitioners and to involve them in the development and delivery of knowledge about and for entrepreneurship. The IfE offers a range of flexible learning opportunities designed to help students maximise their potential whilst simultaneously providing an enjoyable and valuable experience.

Address: Building 25, Level 3 (Penthouse), Highfield, Southampton SO17 1BJ  
Tel: 023 8059 8899  
Fax: 023 8059 8981  
Email: [ife@soton.ac.uk](mailto:ife@soton.ac.uk)  
Website: <http://www.ife.soton.ac.uk/about-us/>

## University of Stirling

**The Centre for Entrepreneurship** at Stirling University was established in April 2001. The Centre's aims include to: promote entrepreneurship education to equip students to confidently face uncertain labour markets and the entrepreneurial opportunities and challenges of the modern economy; and to create new value both social and commercial from academic activities.

Website: <http://www.entrepreneurship.stir.ac.uk/index.html>

## University of Ulster

The aim of **The Northern Ireland Centre for Entrepreneurship (NICENT)** in its widest context is to embed a culture of entrepreneurship within the universities. There is a particular emphasis on the delivery of modules and programmes for students and academic staff in entrepreneurship, idea development and business planning.

Contact name: Dr Pauric McGowan  
Tel: 028 9036 8864  
Fax: 028 9036 6015  
Email: [p.mcgowan@ulster.ac.uk](mailto:p.mcgowan@ulster.ac.uk)  
Website: <http://www.nicent.ulster.ac.uk>

## University of Wales Bangor

**The Centre for Careers** and opportunities is committed to helping students and graduates to be more enterprising whether they want to be self-employed, freelance consultants or in regular employment. Whatever your employment preference, developing your entrepreneurial skills will put you ahead of the game.

Tel: 01248 382071  
Fax: 01248 383644  
Email: [careersopps@bangor.ac.uk](mailto:careersopps@bangor.ac.uk)  
Address: <http://www.bangor.ac.uk/careers/enterprise.html>

**University of Bangor Innovation:** The stimulation of entrepreneurship and new business ventures is crucial to the future of the Welsh economy and to ensuring that Wales becomes one of the most enterprising nations in Europe. In order to support the growth of entrepreneurship in Wales, a major role of University Innovation Bangor (UIB) is to help new ventures develop and expand.

Address: 9th Floor, Alun Roberts Building, Deiniol Road, Bangor LL57 2UW  
Tel: 01248 382501  
Fax: 01248 383657  
E-mail: [innovation-enquiries@bangor.ac.uk](mailto:innovation-enquiries@bangor.ac.uk)  
Website: <http://www.bangor.ac.uk/innovation/>

## University of Wolverhampton

Offers undergraduate BA(Hons) in Entrepreneurship but otherwise advice can be obtained from the **Careers and Employment Services:**

Tel: 01902 321414  
Email: [careers@wlv.ac.uk](mailto:careers@wlv.ac.uk)  
Website: <http://asp.wlv.ac.uk/Level2.asp?UserType=11&Subsection=499>

## **University of York**

Workshops for undergraduate students;

<http://www.york.ac.uk/admin/ssdu/ya/courses/courseyes.html>

and postgraduates:

<http://www.york.ac.uk/admin/ssdu/gradstudents/pgrsenterprise.html>

## **White Rose Centre for Enterprise**

The White Rose Centre for Enterprise is based at the University of Sheffield and has staff at Leeds and York. Its key aims are to increase the entrepreneurial skills and competency of graduates, postgraduates and research staff, and to give encouragement and support to technology transfer, particularly via the formation of new companies.

Contact Name: Andrew Ferguson

Tel: 01904 433329

Email: [arf4@york.ac.uk](mailto:arf4@york.ac.uk)

Website: <http://www.wrce.org.uk/>

## 2(h) Glossary of entrepreneurship-related terms

**Source: The Higher Education Academy**

<http://www.heacademy.ac.uk/Enterprise.htm> (accessed October 2005)

**Enterprise** involves measures to encourage individuals to become entrepreneurs and equip them with the necessary skills to make a business successful (Mason, 2000). In essence enterprise is about spotting opportunities, creating new ideas and having the confidence and capabilities to turn these ideas into working realities (Nixon, 2004)

**Entrepreneurship** is an activity which leads to the creation and management of a new organisation designed to pursue a unique, innovative opportunity (Hindle & Rushworth, 2000). Fundamentally, it is about using enterprise to create new business, new businesses and 'can-do' organisations and services (Nixon, 2004).

**Intrapreneurship** is the art of working within an organisation to effect change, by developing new ideas, procedures or products, by innovating practice and thereby enhancing the business (Kneale, 2002).

**Social entrepreneurship** involves using entrepreneurial skills for the public good rather than for private profit, that is using imagination to identify new opportunities and determination to bring them to fruition (School for Social Entrepreneurs).

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The following terms relate to entrepreneurship and in particular, business start-up:

### **Account**

Record of a business transaction. When you buy something on credit, the company you are dealing with will set up an 'account'. This means that they set up a record of what you buy and what you pay. You should do the same thing with any customers to whom you give credit.

### **Accounts**

A generic term for the financial documents that companies in the UK are required to file each year. Most companies filing will include a Profit and Loss account, a Balance Sheet, a Director's Report and Auditor's Statement.

### **Adding value**

Providing something extra, over and above your competitors, which makes your proposition more attractive than theirs, e.g. personal service.

### **Asset**

Anything of worth that is owned by the business. The assets of a business are money in the bank, accounts receivable, securities held in the name of the business, equipment, fixtures, property or buildings, merchandise for sale or being made, supplies and all things of value that the business owns.



**Audit**

A process carried out by an accountant (auditor) on all limited companies each year to check that the financial records are correct. The auditor cannot be the company's own accountant. Sole traders and partnerships do not need to have their accounts audited.

**Balance sheet**

A statement of the assets and liabilities of the business at any given time.

**Benchmarking**

A method used to compare the relative performance ranges of different businesses. It is an effective way of identifying areas for business improvement.

**Best practice**

Best performance of a function or process or methods that lead to exceptional performance.

**Brainstorming**

A technique of solving problems in which members of a group put forward ideas to resolve the issues raised.

**Break even**

Break-even point represents the volume of sales at which total revenue equals total costs.

**Budget**

A plan, usually expressed in monetary terms, which projects the operation of a business over a period of time.

**Business angel**

An individual investing in businesses, especially start-up businesses.

**Business plan**

A document, which analyses your business activities in detail and predicts the expenditures of the business for at least the coming year. Usually presented to the bank to support a request for a loan and/or overdraft facilities.

**Capital**

This has several meanings, but usually refers to the amount of money in the business belonging to the proprietors or shareholders.

**Capital expenditure**

Money spent on the purchase of an asset.

**Cash book**

A daily record of payments and receipts.

**Cash flow**

The difference between total cash coming in and going out of a business over a period of time.

**Companies**

A Company is a type of business structure created and regulated by state law. What sets the company apart from all other types of businesses is that a company is an independent legal entity, separate from the people who own, control and manage it.

**Conditions of payment**

The written terms under which one must make payment or could seek payment if it was due to him/her.

**Cost of sales**

A term used in a trading account representing the cost of the materials used which, when taken from the sales figures, gives the gross profit.

**Cost plus pricing**

Selling a range of products/services by setting the price on the basis of adding a fixed mark-up to the total costs of production and associated costs.

**Credit**

The period allowed, or taken, to pay for goods or services.

**Credit account**

An agreement made with a trusted customer so that he or she can buy goods or services and pay for them later.

**Creditor**

A party to whom money is owed by the business.

**Current asset**

A cash balance and other assets intended for conversion in cash.

**Current liability**

A temporary debt which is capable of being paid off within one year, for example, creditors, bank overdraft and short term loans.

**Debtors**

A party who owes money to the business.

**Depreciation**

A way of measuring the cost of using an asset which decreases in value with time and/or use.

**Differentiation**

To make one's product/service different from others in the market place.

**Direct (Variable) costs**

Expenses, such as materials, which vary according to the number of goods produced or services offered.

**Drawings**

Money taken out of the business by the owner for personal purposes (sole trader and partnership only).

**E-Commerce**

Conducting business over electronic networks, usually via the Internet.

**Economics of scale**

Rationalising a business operation to maximise the use of each individual resource so that each is cost effective; to ensure there is no competition or waste of activities.

**Exit route**

How the company plans to leave the market and possibility, sell up.

**Expenditure**

Expenditure is money that is spent in the course of the business.

**Facility**

Usually a loan or overdraft offered to the business by a bank.

**Financial Year**

The accounting year of a business, the period covered by the accountant.

**Fire fighting**

Having so much work and so few resources we can only react to events and hence 'fire fight' rather than working to plan.

**Fixed assets**

Assets such as machinery, land and buildings which the company do not intend to sell and which are intended for use within the business.

**Focus groups**

A professionally moderated discussion among a group (four or more participants) of individuals whose opinions are thought to reflect those of the product's intended purchasers.

**Franchise**

The right to use the name of another company, and to sell its products or services in exchange for a royalty. The franchisee agrees to abide by the conditions set out in the franchiser's agreement.

**Gearing**

Gearing is an indicator of a company's ability to service its debt. The higher the proportion of debt to equity, the higher the gearing.

**Gross profit (also Gross margin)**

Difference between sales and direct costs.

**Guerrilla marketing approach**

Highly aggressive marketing intended to get maximum results from minimal resources.

**Hedging**

An insurance policy designed to protect individuals or companies from major market movements. Hedging involves buying two investments that will move in opposite ways as markets move, leaving investors unaffected by major movements. Companies typically hedge against exchange rate movements.

**ICT**

Information and Communications Technology. Includes computers, telecommunications, internet, etc.

**IIP**

The guardians of the Investors in People Standard are responsible for the quality assurance arrangements for the assessment and recognition of staff within an organisation.

**Intangible assets**

Assets which have no material existence, i.e. goodwill.

**Intellectual Property Rights (IPR)**

A state granted right to protect a form of intellectual property, (property such as an idea, a design, etc, which has been created by an individual but doesn't exist in physical form) for e.g. a patent right, design right, trade mark right or copyright.

**Kickback**

An illegal, secret payment made in return for a referral which resulted in a transaction or contract.

**Liquid assets**

An asset which can be converted into cash very easily, for example debtors.

**Long-term liability**

A debt, such as a secured loan extending over 1 year.

**Market segmentation**

The process of looking at the different customer needs within a market and dividing them into different segments based on these needs.

**Market proposition**

Your unique offering to a particular market or part of a market.

**Mortgage**

A mortgage is a secured charge for which the lender has stipulated property (real estate) as security.

**Net profit**

The figure remaining after direct cost and overheads have been deducted from sales revenue.

**Net worth**

Indicates an owner's equity in a business, calculated by deducting total liabilities from total assets. Similarly, the net worth of an individual is calculated by deducting all personal liabilities from personal assets.

**Niche markets**

A small or little explored market which mass market corporate may miss, giving smaller companies the opportunity to design their offering to fit its particular requirements.

**Overdraft**

The amount which a bank is prepared to extend as credit on a current account.

**Overheads (indirect or fixed costs)**

Expenses which do not vary with the level of production or number of employees and which cannot be attributed to production costs, e.g. lighting, rent, rates.

**Partners**

More than one person owns and manages a business. All have equal responsibility.

**Patent**

The exclusive legal rights to make and sell an invention or new product.

**PAYE**

Pay As You Earn. A scheme that every small business employing people must set up and administer to pay income tax and National Insurance contributions to the Inland Revenue.

**Positioning**

Positioning is how a product appears in relation to other products in the same market.

**Pre-selling campaigns**

Marketing activities prior to product launch.

**Profit and loss account**

Statement showing sales costs, expenses and profit (or loss) for an accounting period, normally one year.

**Profit margin**

The ratio by which a company's income exceeds its outgoings.

**Purchases**

The materials or stock that a business buys over a given period.

**Profiling**

To increase the public image of an individual, or ones business.

**Quality systems (ISOs)**

The process within an organisation which ensures that work is carried out to the highest standard and documented as such.

**Receiver**

A person appointed to collect and manage the assets of a company, or partnership in serious financial difficulties. In the case of bankruptcy, the assets may be sold and distributed by a receiver to creditors.

**Registered office**

The address where a company is officially registered with the Register of Companies. (Not necessarily the trading address).

**Revenue expenditure**

Money spent in the running costs of the business.

**Segmentation**

See 'Market Segmentation'.

**Shareholder**

A person or entity that owns shares of stock in a company or mutual fund.

**SME**

Small and Medium-sized Enterprise. The technical definition covers companies that have less than 250 employees, (50 for a small business) and are less than 25% foreign owned.

**Social enterprise**

An enterprise whose primary aim is to meet some social rather than business need. Examples include charities, co-operatives and community businesses. Although generally run as not-for-profit enterprises, their success usually depends on application of the sound business practices described on this website.

**Socio-economic background**

Social class (grade A to E) which is of course related to one's income, is used to identify the kinds of people who buy your product and hence to target more of them.

**Sole trader**

An individual running a business. All revenues and payments from the business are incorporated within the individual's personal financial and tax affairs.

**Statement of account**

The record you receive, from your bank or a company with which you have been dealing, which shows all the relevant transactions and finishes with the amount you owe or are owed.

**Stock**

Goods-whether finished, in production or raw materials.

**Supply chain**

The name given to the overall system that covers the flow of material and information from a business's sources of supply to its customer. It includes intermediaries such as wholesalers and distribution logistics.

**Top line**

Sales or turnover.

**Trading account**

A summary of your sales for a period, usually a year, together with the cost of sales for the same period, showing the resulting gross profit.

**Turnover**

Total invoiced sales net of VAT.

**Unique Selling Point (USP)**

An unusual or unique feature of a product or service that no other product has. Or: The thing about the product that makes consumers buy it.

**VAT**

Value Added Tax is a sales tax set at 17.5% of value within the UK. Most goods and services supplied within the UK are liable to VAT.

**Working capital**

The capital which is used for the day-to-day running of the business.



**Enterprise, Skills and Entrepreneurship**  
***Enhancing the curriculum in Geography, Earth and***  
***Environmental Sciences***

## **Section 3: Examples of practice**

- (a) Enterprise and employability
- (b) Verbal business card icebreaker
- (c) Two lectures to introduce the concepts of intrapreneurship
- (d) Developing understanding of intrapreneurship and the links to entrepreneurship
- (e) Entrepreneurship assessment opportunities
- (f) Exploring the motivation and skills of entrepreneurs
- (g) Selling ideas, an enterprising activity for many modules: the elevator pitch
- (h) Science communication
- (i) An environmental impact assessment of a brownfield site
- (j) Outline scope for a commercial practice module
- (k) Students as consultants
- (l) Aberdeen Oil Game





## **Example A: Enterprise and employability**

### **Sarah Maguire, University of Ulster**

**Level:** 2  
**Number of Students:** ~30  
**Type of Exercise:** 10 credit point module (100 hours student effort)

### **Summary**

This is an optional module within the BSc (Hons) Environmental Science and BSc (Hons) Geography programmes at the University of Ulster. It is compulsory for all students undertaking an intercalary industrial placement. There is a need for students to understand how businesses can exploit scientific practices and how they can lead such exploitation through entrepreneurial activity. It is also important for students to develop skills and business awareness when approaching work experience and graduate employment. This module aims to provide students with a range of environmentally orientated business and management skills and practices in order that they can integrate more successfully into a particular company or set up their own business. In particular, recognition of future business opportunities is an important goal. This module assists students in the development of their own career paths.

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### **Aims and learning outcomes**

The aims of the module are to provide students with a range of environmentally orientated business and management skills and practices in order that they can integrate more successfully into a particular company or set up their own business. In particular, recognition of future business opportunities is an important goal. This module will also assist students in the development of their own career paths.

By the end of this module, the students will:

1. Have developed a knowledge of important areas of business and management with respect to the new product development process and the entrepreneurial business plan, including key sources of business support and finance, the steps required to research a market and protect the intellectual property for a business opportunity, the management of people and operations, and financial forecasts.
2. Understand the context in which new products or services are developed within Environmental Science and Geography.
3. Have developed an awareness of a range of environmental and geographical career opportunities.
4. Have reflected on their own career choices and developed action plans to support these.
5. Have developed the skills necessary for applying for work placements and employment.

This module will further develop the following skills:

1. Innovative thinking and creativity skills through the formulation of a business proposition based on a market need.
2. Intellectual skills will be achieved through the evaluation and analysis of a business proposition
3. Communication skills through the preparation of written reports, oral presentation and interview experience.
4. Group working skills achieved through class discussion, and group development from forming to performing within the group feasibility study assignment.
5. Project planning and management skills through the development of the group feasibility study for a business proposition.
6. Self management skills through meeting deadlines and working independently on assessments.

## Design and operation

Teaching takes the form of lectures, workshops and tutorials where students are expected to engage in active discussions. A core of materials is delivered by the Faculty of Life and Health Sciences, Co-ordinator of Academic-Enterprise who has over five years experience in enterprise training. The three teaching staff mentor groups in the creation and development of their business ideas. Field work and guest speakers are used to enhance the real world context of the students' learning experience. Private study is supported by extensive study notes and sign posting to the web-sites of organisations involved in aspects of business planning. Students are expected to work independently as individuals and groups. The module is organised into two sections, both of which have six two-hour workshops.

The enterprise section covers topics such as:

- Introducing enterprise
  - What is it? Why should you study it? Its context within your subject
  - Finding business ideas
  - Business support networks
  - Business planning
  - Feasibility study assignment
- Visit to a Science Innovation Centre
- Innovation and technology transfer
- Marketing
- Operations
- Managing People
- Managing Finance
- Group work on the feasibility study

The employability section covers:

- Introducing employability
- Graduate destinations and skills review
- Employer presentations
- CVs and applications
- Interview techniques

## Assessment

### I. Job application and interview (50%)

Students are provided with a number of job scenarios. This assessment requires them to select one, to research what the job entails and to submit an application for it by Week 4 (25%). They also undergo a simulated interview for this job during Week 6 (25%). Interviews are assessed using the following criteria relating to their ability to answer the interview questions –

| Mark range | Criteria  |
|------------|---|
| 7+         | A highly relevant and full answer illustrated by examples to demonstrate your knowledge/skills/experience/awareness of current issues |
| 5-6        | A reasonable answer largely relevant with some examples   |
| 4-5        | A weak answer, may be less relevant or brief with few illustrative examples   |
| fail       | An inadequate answer of little relevance or with no examples  |

This assessment tests learning outcomes 3-5

## 2. Group feasibility study report and presentation (50%)

Each group of 4 or 5 students produces and submits an outline plan (feasibility study) on Week 6 (35%), which summarises, in simple terms, the nature of their business idea within the context of Environmental Science. The feasibility study should cover the main features of the business, and should be as specific as possible. The feasibility study needs to be clear to the readers, persuasive and as convincing as possible. In addition, each group is required to give a presentation of their feasibility study lasting 6 to 8 minutes, and to answer questions for 3 to 4 minutes on their business proposition (15%). This assessment tests learning outcomes 1-2.

### Support materials

These included:

- Careers guidance materials and videos accessible through any HEI's Careers Department.
- Career destination data for the courses were also used.
- Job pages and websites

A more detailed description and evaluation of the module is available in: Maguire S and Guyer C (2004). 'Preparing GEES students for employment in the enterprise culture' *Journal of Geography in Higher Education*, 28:3; 369-379

### Evaluation

The module has been extensively evaluated through:

- An analysis of student motivations for selecting the module
- Analysis of module performance data
- Conducting end of module evaluations
- Tutor feedback

A number of key elements can be identified as having worked together positively:

- The module was designed with cognisance of pedagogic theory for course design and student learning.
- The teaching staff had confidence in their knowledge and ability to deliver the employability section. This had been developed through participation in subject-centre staff development and close working relationships with the Institution's careers department.
- The Institution had made available expert staff and resources for teaching the enterprise section. It would be easy to deliver a generic course to students from all disciplines. However, experience from skills courses has demonstrated that student learning is optimised when courses are fully embedded within the subject rather than appearing to be 'bolt-on'. Therefore this input was further supported and enhanced by the School teaching staff supplying appropriate subject orientated examples and case studies.
- Teaching staff had maintained links with past graduates and were able to set up a career convention reflecting a range of opportunities.
- The majority of students valued the syllabus as relevant and appropriate and were intrinsically motivated to attend and learn. However, it was necessary to convince a small minority that this was not an easy escape from chemistry or computer-based modules.

However, a number of challenges were faced during the development of this module, some of which continue to cause difficulty:

- Although academic colleagues recognise and accept the Institutional requirement for entrepreneurship, the module is still perceived by many to be lightweight and superfluous to the needs of the subject. These attitudes impact upon students when they are seeking advice regarding module choices. It is anticipated though that the student grapevine will prove effective with feedback from previous cohorts providing a balance to this.

- Staffing on the module is an ongoing concern. As entrepreneurship rolls out across the faculty it is unlikely that the faculty co-ordinator for academic enterprise will be able to commit so much time to teaching on individual modules. At this stage web-based resources are being developed that will provide an alternative to classroom teaching.

### **Advice**

Colleagues in other institutions may not be in a position, as we were, to include an entire module focused on enterprise and employability issues within their curricula and may wish to consider the following alternatives:

- Provide opportunities within subject-based modules for students to engage in real world scenarios e.g. problem-solving case studies
- Use students' personal development plans to identify and work towards career goals
- Ask visiting speakers to discuss their careers with students and the skills required for them.

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## **Example B: Verbal business card icebreaker**

### **Pauline Kneale, University of Leeds**

**Level:** All  
**Number of Students:** Any  
**Type of Exercise:** As an ice breaker before a lecture / workshop

### **Summary**

The Power Point slides introduce some issues that raise student awareness of the importance of networking. The whole session takes about 20 minutes but just using slides 11-13 'creating a verbal business card' makes a great starter to a session.

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### **Aims and learning outcomes**

To raise awareness of how you can create a positive impression in a very short space of time.

### **Design and operation**

In the slides, 11-13 people design and practice their opening lines that really makes someone want to talk to them. You may want to distribute blank business cards to the group so they really get the point of creating a statement that is short and punchy enough to go on a business card.

### **Support materials**

See Power Point slides and notes below (the PowerPoint presentation is available on-line at <http://www.gees.ac.uk/projtheme/entrep/entrepres.htm>)

### **Evaluation**

The students, class of 160, found it a little intimidating at first and 'felt really silly' standing up and shaking hands. But as they introduced themselves to the third person they began to get the idea: 'I was using different words with the third person, it made me think more about what I really wanted to say;' 'Good fun.'

It is worth letting them take the time to introduce themselves to 4/5 people and get to feel more comfortable with the process

### **Advice**

Be enthusiastic, up beat but take it seriously. This is a worthwhile exercise. Have your own version ready as an example. Be funny about needing different versions for different situations

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**Networking- a starter session**

**A short session to cover:**

- Why bother?
- How to get organised
- How to start in meetings / social sessions

At one level this is about getting your act together so you have the self confidence to do really well.

**Why bother now and in first years at work?**

Ok give me your ideas:

Get better known? Increase your reputation?

Find people that will help you progress

Build up contacts

So other people think of you when they need someone like you

Helps to get a job

Shows you are sociable and have social skills

Some people see this as a tacky activity and start losing confidence and don't want to exploit people. Just be a bit American and remember there are people competing for your job/position who have no such scruples.

**Is there a gender issue here?**

- Generally men network naturally at work and after work with colleagues through sport and social activities
- Generally women network naturally outside work with their friends

**Networking has a personal benefit but is also a business skill.**

- Effective teams will be knowledge-sharing. They use their collective memory. They know the capabilities of colleagues, and can make the most of each others' expertise.
- Networking can help you to understand the big picture and help to make wise decisions quickly.
- Knowing the big picture can help you make more mature suggestions and tackle more senior assignments effectively.

- Internally in an organisation, networking is key to:
  - Creating teams and communities built on trust and real commitment
  - Extracting valuable intelligence. With increasing data-overload, the need for networking increases
- Externally, networking is the key to:
  - Understanding and acting on market trends. As the world changes at a faster pace, the need for networking increases. Integrating with third parties – customers, suppliers and partners
  - It is important to most business functions, not just obvious ones like sales & marketing.

**What is networking about?**

- Visibility
- Being remembered

**Research evidence for the effectiveness of networking**

- John P. Kotter (1999) *What Leaders Really Do*, Harvard Business School Press, Mass.

'Good managers are good networkers. They make/take the time in the schedule to meet people'

'Networking is a key skill of successful managers and is often overlooked'



- Kanter, R.M. (1985) *The Change Masters*, Jossey Bass Wiley, New York.

‘Networking is an effective source of power and influence’

### Activity

At a group two-day interview

- Why should you network?
- Who should you aim to network with?
- What can you offer as you network?

*Make some notes of your answers – 3 minutes.*

Get their feedback.

Before you go to a meeting of any sort take some time to work out who you may meet / what you have to offer them / how you can be seen as approachable and worth talking to. Remember people are more likely to offer you something if you are giving them something. This is not the time for lame impressions.

### How will you introduce yourself?

*Hi, I’m Jimmy from Wigan, who are you?*

OK but:

- What do you want to get across to people?
- What do you tell them so that they say ‘*Hey that is really cool, can you tell me more about ...*’
- How can you be really clear?

### A verbal business card

- *Hi, I’m Jim a geography student at Leeds but I have got really interested in .... and I want to ... so that ...*
- Asked about what you do as a part-time job:  
*I’m a bar person at weekends.*  
Or  
*You know how some bars you go in are really dull & boring, well my job involves making sure the place has a welcome feel and is a pleasure to visit. It’s so important in the pub business to make people want to come back.*

*Task: write a verbal business card for you – 3 minutes.*

You may want to distribute blank business cards to the group so they really get the point of creating a statement that is short and punchy enough to go on a business card.

### Task

- Pick a partner
- Stand up and introduce yourself to your partner. Shake hands, be positive and enthusiastic
- Partner: listen carefully and respond. Then suggest ways to improve the introduction
- Then swap roles

- 6 minutes

Ask/introduce in the expectation of a positive reply. Cheerful positive outgoing body language.

Then try with some other people.

The students, a class of 160, found it a little intimidating at first and 'felt really silly' standing up and shaking hands. But as they introduced themselves to the third person they began to get the idea. *'I was using different words ..., it made me think more about what I really wanted to say.'* 'Good fun' It is worth letting them take the time to introduce themselves to four or five people and get to feel more comfortable with the process.

### Managing a first meeting

Ok you have arrived at the interview and people are gathering with /without a drink

- Put your name label on your right hand lapel
- How do you feel walking into a room knowing no one?
- Approach who?
  - People standing alone
  - Group
- Introduce yourself: use your prepared card
- Ask the first questions – easy ones

Right hand lapel, so seen when you shake hands.

98% of people going into a room are nervous.

Spot people who are pleased to see you – those alone, along the wall, etc.

### Starter questions

- Where do you come from?
- How is life at university of ....?
- What is Leeds like?
- I couldn't help admiring your jacket, can I ask where you found it?
- Is this your first interview?

**Networking needs small talk**

- You need people to be on your side, interested and 'comfortable' with you
- Small talk builds up the comfort zone
- Be interested in what others have to offer

Talk topics: sport; hobbies; work; holidays; family; books; news; music; films; ...

You don't have to do all the talking. Show that you are a good listener too. Don't:

- Keep looking for more interesting people or move on every 5 minutes. Take the time to have a relaxed conversation with whoever you meet.
- Appear to target the room like a piranha – for only the attractive men/women or the company reps. At an interview, the people running the session will notice if you ignore the other candidates. They might conclude that you are focused and driven, but also that you are not a team player with social skills. Oh and the rest of the candidates will notice and not want you on their team!

Escaping people: I want a drink can I get you one? I need a breath of fresh air do you want to come? I have just spotted x, have you met her? Let me introduce you.

**Create appropriate introductions**

- You need different introductions for yourself in different situations

Homework: Create 3 introductions that cause people to say '*Hey that is really cool, can you tell me more about ...*'

- For an interview / someone meeting you at work / an aunt / someone on the bus / at a club / someone meeting you in the uni / ...

**Go for it!**

- Networking is a real business and social activity
- Have a plan
- Keep the contact list of attendees if available
- Follow up people
- Keep track of contacts
- Find ways of keeping up with people
- Enjoy meeting people

## **Example C: You are on your own - ice breaker**

### **Pauline Kneale, University of Leeds**

|                            |  |
|----------------------------|--|
| <b>Level:</b>              | Any  |
| <b>Number of Students:</b> | Any in groups of 2-4   |
| <b>Type of Exercise:</b>   | A useful ice breaker or start to a session for those not yet introduced to the idea of starting a business |

### **Summary**

The aim of this activity is for the participants to realise they have resources and skills that they could use if they were pushed into starting a business.

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### **Aims and learning outcomes**

The objectives for the participants are

- to have a fuller understanding of their own enterprising skills
- to start discussing enterprising ideas, get comfortable with group discussions

### **Design and operation**

1. Pose the question: 'If you were out of work/University tomorrow and no one, NO ONE would employ you, how would you make a living? You have three minutes to develop a list – on your own'.
2. At the end of 3 minutes ask for a quick feedback on their ideas, which will bring out the diversity of their ideas, 'oh yes I could do that too' comments.
3. Then ask students to share their ideas with their neighbour and create a list of the skills they already have to support their ambition to start this new enterprise.
4. After 5 minutes ask them to work out what they would need to do in the first week and first month to get the business going. Put the main points on a OHP/Poster.
5. Do a group show and tell of the mini posters. With people moving around the room to look at a variety of opportunities.

Students discuss, staff encourage. No formal assessment.

### **Support materials**

Flip chart/poster paper, pens, blu-tac,

### **Evaluation**

This is a fun session that takes about 20 minutes and gets the students to realise they could go down this route. It pulls out the skills. In debriefing be positive and enthusiastic no matter how whacky the idea. The later sessions in a course can address some of the realities of starting a business. In my experience a class of 60 has about 130 ideas between them. Some students do list posters – but most create elaborate spiders' webs of people with links.

## Student comments

*I really found this difficult at the start, but once I heard what the girls behind me were doing I realised that there are things that I can do. I am very involved with the junior school some of her each year and this showed me that I do enjoy getting good together for the store and I really enjoy selling and talking to people.*

*Gruber had so many I feared it was hard to choose one to plan which was really surprising. I sell on eBay quite a lot, developing an idea around a web site and selling is something I realise I could do.*

*Lots of fun to hear everyone's ideas, they were all so different.*

*Sharing ideas at the start really helped me to understand what be enterprising can be. It was much harder to make a plan for the first week and first month.*

## Advice

Be cheerful and enthusiastic. Encourage discussion and creative thinking. Give examples – dog walking service; gardening; serious car boot trader; meals from home; writing web pages; tutoring; teaching yoga; ...

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## **Example D: Two lectures to introduce the concepts of intrapreneurship**

### **Pauline Kneale, University of Leeds**

**Level:** Any  
**Number of Students:** Any - has been used with 15 and 120  
**Type of Exercise:** Lecture 50 minute or 20 minute

### **Summary**

These two fully scripted lectures are designed to introduce the concepts of intrapreneurship to a class at any level. Each is a scripted Powerpoint presentation with a number of activities. The lecturer will need to decide which activities to include to suit the class.

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### **Aims and learning outcomes**

- To introduce the concept of intrapreneurship
- The class will have an understanding of the nature of intrapreneurship, the literature it is based on, and an insight into what this means in the workplace.

### **Design and operation**

A lecture with activities. No direct assessment but could lead to an essay - see Assessment opportunities file.

### **Support materials**

<http://www.geog.leeds.ac.uk/courses/other/casestudies/>

See the section under Lectures half way down the page. Customise the materials for your use. i.e. start by replacing your name for mine on slide 1.

### **Evaluation**

The students have found this a positive experience. 'I liked the exercises, it was good to do something instead of just listening'. 'I hadn't thought about what I was doing at work as being important for getting a job'. 'I can see that you can be positive from the start if that's what you want, I am not sure I have the confidence to be like that' 'It is good to see that businesses want people to be having ideas and telling them. Interesting to see how organisations work'. 'Liked the examples'

### **Advice**

Try to get an example from a recent graduate from your School you can quote to help students see that being intrapreneurial at work does relate to them and their subject.

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**Example E: Developing understanding of intrapreneurship and the links to entrepreneurship. An intrapreneur's story: Education Officer and Senior Ranger. Pauline Kneale, University of Leeds**

**Level:** Any  
**Number of Students:** Ideally a small / tutorial group of maximum 6, but larger groups can discuss the case in groups of 5-6  
**Type of Exercise:** Pre reading for a tutorial / seminar discussion

### Summary

A case example of a Park Ranger working for a local authority is used to let students draw out ideas about how people can influence their workplace, put new ideas in place and develop both their business, their job and their career. While this is an example of enterprise within a business the tutor can get students to draw parallels with the skills for entrepreneurship.

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### Aims and learning outcomes

To understand the enterprising role someone can play in a business. Develop an understanding of business practices

### Design and operation

The case is fully documented. Students are asked to read the Park Rangers story in advance and come to the tutorial ready to discuss the case..

### Support materials

See <http://www.geog.leeds.ac.uk/courses/other/casestudies/> the materials are under the Context Case Materials section; or

<http://www.geog.leeds.ac.uk/courses/other/casestudies/intra/IntrapreneurStoryEducationOfficerAndSeniorRanger.doc>

### Evaluation

This case has evolved following a couple of runs. Student comments 'It is not obvious until you read about real people that you can actually make changes to what you do at work. I had not realised people act like this.' 'It was really interesting to read about a person doing a job and someone that works in a park. It is not a job I had thought of but (I) can see that it could be really interesting'. 'I had decided I would be a teacher but this case shows you can be doing teaching in a different way'. 'The different challenges that she has to face are a bit difficult but you can see how it is possible to do differently (sic)'.

### Advice

Make sure students are really encouraged to pre-read otherwise they waste time reading at the start. I ask them to come with notes and points threatening a mini presentation!

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## Example F: Entrepreneurship assessment opportunities

### Sharon Gedye, GEES Subject Centre

| Assessment                            | Explanation  |
|---------------------------------------|--|
| Business Plan                         | A business plan may typically contain an executive summary, an outline of the business opportunity, a marketing and sales strategy, management team and personnel details, operations information and a financial forecast. Business plans can be individually or group assessed. For group presentations you might like to request that students submit minutes of meetings as evidence of their teamwork, which is a key business skill. |
| Feasibility Study                     | A written or oral presentation detailing the feasibility of a business concept. The presentation should critically examine the business product/service, the market, competitors, costs and personnel/management requirements.   |
| Business 'Pitch'                      | An oral presentation selling a business concept to a potential backer. This type of presentation concentrates on the unique selling point of the business idea. Assessment will need to take into account how convincing, confident and professional the student is in presenting the concept.   |
| Critique of a Business Plan           | Students may be required to critically examine a real business plan selected by the module tutor or one chosen for them-self. Alternatively, they may peer evaluate mock business plans.   |
| Business / Business Person Case Study | Students are required to present a report on a business or a business person/entrepreneur. The case study can be tutor or student selected. This type of assessment could be desk-based or may involve site visits to a business and/or interviews with an entrepreneur and their personnel.   |
| Personal Development Plan             | The development of a personal development plan (PDP) that focuses on entrepreneurial skills and competencies. The enterprise PDP may involve action planning and reflection around the students business idea.   |
| Essay/Examination                     | Traditional essays and examinations are widely used in assessing entrepreneurship/enterprise courses. See example overleaf.  |

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## **An essay that for good marks needs some personal research**

### **Pauline Kneale, University of Leeds**

#### **Introduction**

The following titles build around a common theme. The essay title does not direct a student towards interviewing an intrapreneur or an entrepreneur but the support materials encourage students to use that route. The references below are deliberately 'dated' so the good students can prove to me they have the research skills to find the more recent examples and get appropriate credit. These titles have been used with level 2 students for a number of years. Most students do research an employment sector and their answers are very diverse. Good answers include mini interview reports and an understanding of the sector and literature. Despite the instructions below less good answers waffle randomly about work in many sectors with little grounding in fact.

#### **The essay**

For a particular occupational sector discuss the ways in which the workplace has changed in the last ten years and how it can be expected to change in the next five years.

*Or*

Discuss the role of intrapreneurs in a particular occupational sector. How might an employee in their first years at work act in an intrapreneurial role?

*Or*

Discuss the role of entrepreneurs in a particular occupational sector. Explore the facets and attributes that lead to success in entrepreneurship.

Your essay should build on the module sessions and reading, together with the information you gain from discussing the nature of the workplace with people you meet over the next few months.

Each of these essays will benefit from your using your geographical research skills to find some one to talk to so that your comments are grounded in the real workplace. Occupational sectors you might choose include voluntary organisations, public service sector, public utilities, blue chip companies, SME's (small and medium sized enterprises), or international corporations. Why not choose a sector you might like to work in?

Each essay needs equal weight given to each of its sections to gain high marks. A general waffle around multiple sectors will get few marks. An essay that is not grounded in the literature is unlikely to score above 45%. Evidence of relevant research with someone from your chosen sector is good dissertation practice and likely to score well.

#### **Selected references**

**Journals to check include:** *Journal of Business Venturing*; *People Management*; *Capability: Journal of Autonomous Learning for Life and Work*; *Journal of Graduate Education*; *Personnel Management*

#### **The changing workplace**

Cusumano, M.A. (1997). How Microsoft Makes Large Teams Work Like Small Teams, *Sloan Management Review*, Fall, 9-20

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## **Example G: Exploring the motivation and skills of entrepreneurs**

**Pauline Kneale, University of Leeds**

|                            |  |
|----------------------------|--|
| <b>Level:</b>              | Any  |
| <b>Number of Students:</b> | Any in groups of 5-6   |
| <b>Type of Exercise:</b>   | Two hours comfortably, but could be done in an hour if students have pre read the materials. |

### **Summary**

The aim of this case activity is for the participants to try to understand how entrepreneurs operate, what motivates entrepreneurs and how they behave in certain circumstances. What were the challenges, what are their personal qualities?

The outcome is a presentation which needs to be clear, concise and enthusiastic. The presentation is created under considerable time pressure.

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### **Aims and learning outcomes**

The objectives for the participants are:

- to have a fuller understanding of 'entrepreneurial behaviour';
- to give a persuasive and convincing presentation to their peers.

### **Design and operation**

Students discuss, staff facilitate, The materials suggest a variety of sources for examples so tutors can choose the type of entrepreneur to suit their class. We have run this using the UK examples which students find more accessible than the Starbucks or Dell examples which 'are beyond our reach'. Using a range of examples with a large class makes for more interesting feed back. I suggest that you have a different case for every two groups

### **Support materials**

See tutor and students' notes below.

Entrepreneur Case Studies: <http://www.gees.ac.uk/projects/entrep.htm>

### **Advice**

Be cheerful and enthusiastic. Encourage discussion and creative thinking.

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## Tutor notes

The aim of this case activity is for the participants to try to understand how entrepreneurs operate, what motivates entrepreneurs and how they behave in certain circumstances. What were the challenges, what are their personal qualities?

The outcome is a presentation which needs to be clear, concise and enthusiastic. The presentation is created under considerable time pressure.

The objectives for the participants are

- to have a fuller understanding of 'entrepreneurial behaviour'
- to give a persuasive and convincing presentation to their peers

There are a range of examples of entrepreneurship that tutors can call on. These make excellent examples in lectures but students gain considerable understanding from working with the cases themselves to draw out the motivations, skills and challenges of real entrepreneurs. While many cases are available at a price (a Google search will find them), example cases are available to download free from:

Entrepreneurship Case Studies, UK <http://www.heacademy.ac.uk/thematic/950.htm>

A range of US examples is at <http://entrepreneurs.about.com/od/casestudies/>

See also <http://www.zeromillion.com/entrepreneurship> for extracts that include: Howard Schultz, Starbucks; Michael Dell, Dell Computer Corporation; Robert L. Johnson, BET Holdings; Black Entertainment Television; and many others

You may wish to select one case, but we suggest each group works on a different case to enrich the presentation and sharing session.

The cases you choose will need to be printed off with either a copy for each participant, or two per group. Restricting the number of copies forces the group to start talking to share the case information. They are also annoyed at not having one each which initiates some bonding in the group.

Some universities run incubators for graduates starting their own companies. Asking one of these entrepreneurs to talk to the group about the process to date is potentially inspiring. You might ask him/her to set the scene, or to listen to and to comment on the presentations and to tell their own story as part of the debriefing session. Follow-up activities could include asking students to research their own case examples with entrepreneurs in the university or locally. These data can be used to expand the case study list. Local entrepreneurs really help students to understand the realities and see it is possible for 'someone like me'.

## Running the case study

The participants need to be in groups, maximum six people. Please try not to run this in a tiered lecture theatre where group work is more constrained. The participants remain in their groups throughout the case.

## Handouts

Each group needs one copy of the Participant's Brief. They also need presentation material, of your choice (flipcharts/pens/OHTs etc).

**Timing (OHT 1)** please complete with your own start/finish times (e.g. 9.00-9.10).

- 10 minutes: Introduction - handout 1 plus the case study chosen
- 45 minutes: Planning and preparing presentation
- 20 minutes: Presentations (circa 5 minutes per group) – handout 2
- 30 minutes: Collecting the overarching points and de-brief – handout 3

## Tasks

The participants need to read through the entrepreneurship case example, discuss the information and prepare a presentation which explores the motivations and skills of their entrepreneur. Emphasise that the groups are not competing, they are all trying to give the best presentation they possibly can. If they all have different examples they will also need to say a little about what their entrepreneur has done.

If you have a large number of groups, you may want to split it into streams for the presentations; four presentations is probably plenty for each subset. If you do choose this option, then you will need to co-opt someone else to hear the parallel groups presentation.

Before the presentation give everyone the comment sheet below to guide their listening.

At the end of the presentations ask the groups to collate their comments and focus on what they find are the collective learning points to share.

Go through the debrief, picking up on both preparing and delivering presentations under pressure and the entrepreneurial points.

Follow up work includes reference to the literature on the entrepreneurial skill set. See for example:

Bolton, B. and Thompson, J. (2000). *Entrepreneurs Talent, Temperament, Technique*, Oxford: Butterworth Heinemann.

Wickham, P.A. (2001). *Strategic Entrepreneurship*, 3<sup>rd</sup> Edition, Harlow: Pearson Education.

## Suggested introduction

*This session will let you explore the motivations and skills that young entrepreneurs meet in practice. Each group is being given a case study about an entrepreneur. They are different so that we get a broad view of entrepreneurial activities. Quoting from the HEA web site:*

*'Entrepreneurship is an activity which leads to the creation and management of a new organisation designed to pursue a unique, innovative opportunity (Hindle & Rushworth, 2000) Fundamentally, it is about using enterprise to create new business, new businesses and 'can-do' organisations and services (Nixon, 2004).*

*Entrepreneurs start all kinds of businesses. In a few minutes you will be given a brief which gives you information about one business and a task to complete in your groups. You do not have a lot of time, so you really need to think about the situation and the outcome that you want from your group presentation.*

*A good presentation is essential. Any questions?*

*You have 45 minutes to get to grips with your brief and prepare your presentation.*



**Presentations (c. 20 minutes for 4 groups)**

- Ask participants to listen for the good and less good techniques used by the presenters and to be ready to comment on the presentation style as well as content.
- Before the presentation give everyone the comment sheet below to guide their listening.
- At the end of the presentations ask the groups to collate their comments and focus on what they find are the collective learning points to share. Give them 3 minutes to do this and then collect ideas on a flipchart, asking for an idea/comment from each group in turn.

**The de-brief (allow at least 15 minutes)**

Reflect on the presentations, ones that stood out. Example questions –

*How did it feel to be doing this?*

*What were the best parts of the presentation? What could be improved?*

*Have any of you had to give a presentation previously that meant a lot to you – what happened?*

*What were the key things to remember?*

*What skills were you using?*

*Did you 'own' the project?*

*How did it feel to act as an interpreter of motivation and challenges?*

*What would have made it easier for you?*

*How has your understanding of entrepreneurship developed through hearing about the cases?*

## **Exploring the motivation and skills of entrepreneur**

### **Handout 1: Participant's brief**

Attached is a case example of an entrepreneur for consideration by your group. Your group task is to develop an understanding of the skills and motivations of the individuals involved. How do entrepreneurs operate, what motivates entrepreneurs, how do they meet challenges, what were their personal qualities?

You will need to discuss these aspects and prepare a short presentation that highlights these issues to the other groups. Each group is looking at a different example, therefore you will need to take 30-60 seconds to outline the business context.

Your challenge is to work together as a group to come up with the most persuasive presentation you possibly can. Each presentation is 5 minutes – please make it look as professional as possible.

This means that your presentation will need to be:

- Clear - stating and evidencing motivations and skills
- Concise - you only have five minutes to present
- Enthusiastic - your audience need to see that you believe in what you are doing.

**OHT 1**

|  |            |
|--|------------|
| Introduction                           | 10 minutes |
| Planning and preparing presentation    | 45 minutes |
| Presentations (five minutes per group) | 20 minutes |
| Collection of summary points           | 15 minutes |
| De-brief                               | 15 minutes |

## **Exploring the motivation and skills of entrepreneurs**

### **Handout 2**

A framework to help when listening to the presentations:

- Listen actively to the presentations.
- Do not think about your own presentation to come.
- Concentrate on the speakers: What are they telling you that is new? What is reinforcing the ideas your group had? Is there something you don't understand?
- What are the good presentation techniques you can use in future?

### **New points**

### **Points that are reinforcing/restating/developing previous thinking**

### **Questions that arise**

### **Presentation techniques I can learn**



## **Example H: Selling ideas, an enterprising activity for many modules - the elevator pitch**

### **Pauline Kneale, University of Leeds**

|                            |  |
|----------------------------|--|
| <b>Level:</b>              | All  |
| <b>Number of Students:</b> | Any, can be done as an individual or group activity  |
| <b>Type of Exercise:</b>   | This depends on how it is set up. It might be 15 minutes within a module with individuals or groups making pitches to two or three other groups, or it might be a tutorial activity. |

### **Summary**

In order to get ideas across to inaccessible bosses, American staff discovered that they could find the right boss in the elevator and pitch their ideas in the short time the elevator was in motion. Hence the concept of the 'elevator pitch'. This concept can be used by students in many different learning scenarios. Essentially participants are asked to create and present either a 30-second, or a one-minute or three-minute presentation. For example, students in a tutorial group might be asked to give one-minute presentations of their proposed dissertation methodology and main argument for an essay, or a three-minute pitch to persuade a member of staff to grant them a work placement or year in industry position. This has the potential for activities within group work when individuals within groups put forward the ideas to progress the task in hand, and in giving updates to tutors on the progress so far. With a large class, the two-minute pitch to technicians for equipment can be helpful in getting through requests from large numbers of groups.

Essentially, the process requires the participants to really focus on the message they want to get across to be precise, and to be confident and enthusiastic. Wherever this process is used, it is important in debriefing the students to point out that this kind of pitch is extremely useful at job interviews, recruitment fairs, in telephone interviews. Preparing yourself to persuade someone of your case in a short and sharp manner is a good technique to have at your command. We are not in this case suggesting that students should be riding up and down in lifts waiting to find the right person, but they may find cross-referencing to 'elevator pitch competitions' both amusing and a way of making the participants take this activity seriously. Type 'elevator pitch' into Google, and you will find pages and pages of links.

As an entrepreneurial activity it has its original place in the curriculum in persuading the boss to take on board and possibly fund your idea. The US examples tend to be dominated by marketing people.

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### **Aims and learning outcomes**

To develop students skills in making short and pointed presentations. To give them practice in selling their ideas.

### **Support materials**

*Adapt the following for a student handout:*

Elevator pitches are used as a way of getting essential information across to people in a very short space of time. The name derives from American business people making pitches to the bosses, whom they could only catch in the company elevator. This activity is now recognized as a management technique and the subject of competitions in the USA. (For examples type elevator pitch into Google) Your pitch must persuade tutor / fellow group members / competing groups ...

Points to bear in mind when preparing your pitch:

- a) Be aware of the expertise of your audience. You need to use appropriately technical language, and not waste time on essentials and facts that he/she will already know.
- b) Get your unique selling point (USP) across from the start. Aim to make your message memorable; your points need to stand out from others being made on the same day.
- c) Be enthusiastic, confident and sure of your information. Take time to practice in advance. It is difficult to complete the task in such a short time without having rehearsed your argument.
- d) In selling your idea, look beyond the immediate process or service. Aim to show the wider benefits to your tutor, course, community, subject area, etc. In elevator pitch terms, this is looking to show that you have an idea and a wider vision.

*Cut and paste from the tasks below to suit your class or adapt the idea for your own module/workshop.*

Pitch topics:

- Course related
  - a new field class in Italy/Greece/Mexico/China ...
  - a new module in Antarctica Studies/Poverty/ ...
  - purchase a relevant journal for the Student Common Room , e.g. New Scientist/Economist/Geology Today ...
  - no formal examinations for your degree course.
  - A Traidcraft snack dispenser for your building.
  - Water cooler for the laboratory/Student Common Room/
- Generic/Entrepreneurship related
  - Imagine that you have just invented ... Your task is to create a 30s/360s pitch to sell it as a concept to your group. Eg: Paper clip / post it note / floppy disk / deckchairs / massage wheel / egg slicer / fizzy water / weekend break / artificial nails / balloons ...
- For interview/employment preparation, useful topics are:
  - my USP (unique selling point) to the company/organisation is ...
  - the attributes I have to bring to this company are ...
  - the skills and experience I can bring to this organisation/company include ...
  - In my first year at work I would like to achieve ...

We suggest that if this is run as an in-class exercise students require about 20 minutes to prepare their pitch. Suggest they take the first 10 minutes to get the main points together, and 10 minutes to practise their pitches. Then move to pitching to other groups in the room. Giving 20 minutes to this, allowing groups to move round and get three or four opportunities to speak really helps students to develop their thinking and speaking skills. Actually pitching an idea or concept the first time shows you how you can adapt to do a better job the second time.

## Assessment

This has not been formally assessed, but I take bags of sweets and ask each group to award it to the best 'pitcher'. Maltesers/Revels (that the group usually shares) make good prizes.

## Evaluation

Student comments:

*The whole idea seemed bizarre, and our group were not keen to get organized. It is worse than putting a poster together, because you have to really think about what you want to say.*

*Doing the pitches in the groups was really fun and quite entertaining. It really made you think about how you wanted to get your message across.*

*I don't really come across as an enthusiastic person normally, but you have to get involved when time is so short.*

*You find that you are changing what you say when you repeat the pitch to the next group. Even though we had practiced quite a lot we were changing a story as we pitched to each new group.*

*I can see that using this idea at an interview could be quite helpful. It does stop you rabbiting on and on when you don't have much to say. Trying to isolate USPs for our project did make us look at what we were going to do in a lot more detail.*

*I don't like having to do things quickly, I don't think this sort of exercise is very suitable. I like to be able to talk around a subject and to be able to bring in other parts of an argument. I think that people will take time to talk to you for much longer than you say. Why would people want just to have half of the story?*

In my view, most of the time we want students to write and speak extensively. This is therefore a rather artificial exercise but one which gives students opportunities which are relevant in real life situations. The first student comment above and the last are not untypical. I would argue that at least once or twice in a student's career, being made to think through and express the fundamental points is a good intellectual exercise, and one which has considerable payoff if they then use it in real job situations. It is worth reinforcing the point that many people in business will not be prepared to listen if you waffle, that they expect arguments on one side of the paper not an extended essay, and they expect points to be put across with considerable clarity. This is essentially an exercise that gives some practice in that arena.

## Advice

Be very encouraging from the start. The tutor needs to be enthusiastic. Aim to pitch the process in 120s to demonstrate what is required. Point out that this is a quite difficult task to do but that it can be really helpful when faced with people who you want to impress and who have very little time to spend with you for example at interviews, when you start work, during vacation, casual or placement employment.

If participants do one pitch only they will get something from it, but they will get a great deal more if they can move around and pitch their ideas to other groups. The student comment above indicates that when they repeat the pitch they refine it and develop it into something that is more persuasive, more accurate and more to the point.

While this activity can and has been done in a tiered lecture theatre, a flat floored room with space to move around is helpful.

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## **Example I: Communicating science**

### **Alun Lewis, Royal Holloway University of London**

**Number of Students:** 10  
**Type of Exercise:** degree course

#### **Summary**

Good communication is a vital skill for entrepreneurs both for marketing themselves and their 'product' and for working effectively with staff teams, clients, suppliers and the many other individuals and organisations they will encounter. Scientists are inherently poor communicators as they are taught to speak the un-natural language of formal science. This course has been specifically designed to allow young scientists to speak to non peers in a way they will understand – and in a way that will grab their attention and keep it.

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#### **Aims and learning outcomes**

While undergraduates are being taught to present their ideas in the formal language of science report writing, I teach them to translate the same ideas and concepts into everyday language that is accessible to non scientists or to those interested in science but without a detailed knowledge of their subject. They will all be able after this course to communicate their ideas effectively to a given target audience. The skills are transferable to getting a job interview, doing well in an interview, pursuing a successful career in science, teaching science, communicating science either to a live audience or through books, museums, or broadcast media.

#### **Design and operation**

Students learn in formal teaching sessions which introduce the ideas and techniques and then immediately put the ideas into practice in the media lab or the main TV studio. Learn – do – make mistakes and assess. Each exercise leaves the student with a piece of writing, an image, a score sheet, a radio tape, a script, a story board or a video tape. Advanced projects involve creating complete documentaries, radio programmes or magazines.

Staff (me) lecture and demonstrate but then leave the students to learn how to use the technology themselves through experimentation. Each student will respond in very different ways to the open ended challenges set them.

#### **Assessment**

There are no exams. Assessing for communication clarity and engagement is my responsibility – an assigned tutor in each of the major science departments checks the work for factual accuracy where I am unsure of the science being discussed.

#### **Support materials**

Real articles and their source material (papers in *Nature* etc.,) real radio and TV interviews from my own archive or material collected for broadcast on BBC and elsewhere, Posters through various stages of development. Websites under construction and in use. Talks from authors and radio and TV producers which demonstrate the problems involved in the real world of science communication.

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## **Example J: Environmental consultancy: an environmental impact assessment of a brownfield site**

**Clive Roberts, University of Wolverhampton**

**Level:** 3  
**Number of Students:** up to 45  
**Type of Exercise:** Module

### **Summary**

This example illustrates a group-based approach that allows students to experience first-hand the type of work environmental consultants might do in the field. Setting up such consultancies is a common example of GEES-related entrepreneurship activities (see also the case studies in Section 3). This module introduces the student to the various techniques and applications of site investigation procedures. The overall aim is to give the student valuable experience in undertaking a real-time case study of a brownfield site and to provide the student with an insight into professional applications of site investigation for their overall degree profile. The module therefore has direct relevance to potential career opportunities. The general syllabus aims to be holistic and will cover the environmental, socio-environmental, economic, ecological, legal, geotechnical, geochemical, geological and hydrogeological evaluation of derelict industrial and landfill sites. Both practical work in the laboratory and a field trip is undertaken to supplement theoretical knowledge.

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### **Aims and learning outcomes**

1. Recognise those matters of a technical, legal or environmental characteristic that need to be considered and investigated when selecting sites for the development of constructional or recreational facilities.
2. Assess the relevant geological, ecological, hydrological, geochemical, hydrogeological, environmental, socio-political and economic factors that may give rise to unfavourable conditions within given areas and suggest appropriate techniques of assessment.
3. Appreciate the legal framework which directs and influences site evaluation and suggest appropriate remediation strategies for contaminated land.
4. Interpret various geological, geochemical, environmental and ecological criteria from a given case study site and synthesize all derived information by completing an environmental risk assessment.
5. Construct a professional site investigation report, which includes and environmental impact assessment for a proposed development on the chosen case study site.

### **Design and operation**

1. **Lectures:** Factual material is presented to students by oral presentations, notes/handouts, videos and selected case study material.
2. **Directed reading:** Such activities are carried out by students to reinforce and supplement lecture material. New concepts and ideas are introduced to the student to encourage independent learning. Feedback is provided on expected levels of achievement through self-assessed exercises.
3. **Group work:** Students work in groups during contact time to solve problems related to lectures and directed reading. Team building skills are established and enhanced.
4. **Fieldwork:** Enables students to apply theory to actual situations. Develops interpretative and data collection skills.

5. **Laboratory work:** Provides analytical skills by assessing soils for concentrations of heavy metals
6. **Oral presentations:** Students present summaries of group work activities to each other and to the whole class. Verbal communication is developed and enhanced.
7. **Information Technology:** Computer skills are enhanced through database searches, word processing, GIS, drawing packages and collation of a professional site report.
8. **Project management:** Students develop problem-solving skills through the planning, design and construction of a site investigation report.
9. **Independent learning:** Students are required to enhance their independent learning skills by critical thinking and reflective practices.
10. **Time management:** Personal organisational skills are developed and enhanced by keeping to set deadlines and by submitting work at the appropriate times

## Assessment

65%: A professional site investigation report, which includes an environmental impact assessment for a proposed development on a brownfield site.

35%: Oral examination based on the case study site.

## Support materials

Support material includes: archive maps going back to 1887; modern OS maps; thematic set of engineering geology maps for the Black Country; consultants' reports from the local Council; and planning and development strategy documents for Government Office West Midlands. The students are also 'fed' data from previous fieldwork. Aerial photographs are used as base maps for development proposals.

## Evaluation

Evaluation has been extremely positive from students. Students complete a module evaluation at the end of the module and are asked to complete a self reflective review of the skills they have gained. When the module was first designed, more lectures were planned. Student feedback has indicated group work is more productive in achieving the module outcomes and so the module has evolved more into an active learning experience by increasing group work activities. Some students have used their consultancy reports in their personal portfolio to gain employment. Local employers have also fed their comments on the module back to the module team, allowing refinement of some aspects of the investigation procedure.

## Advice

Group work and experiential learning on a real-time exercise is a very good way to develop problem-solving skills. Although it does take time to set up the relatively large resources base required for group work, the benefits to the students are great.

## Contact details

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## **Example K: Outline scope for a commercial practice module**

### **Dei Huws, University of Wales: Bangor**

#### **Background**

Upon graduation, the School considers it important that a Masters student is equipped not only with a sound theoretical and practical understanding of their aspect of marine science, but is also capable of using these skills to contribute directly to the nation's economy. This may be in the form of gaining experience within an established organisation or may involve the setting-up of a business enterprise. The scope of any module concerning 'Commercial Practice' within an intensive, subject-specific Masters course can, by nature, only provide knowledge and understanding at an elementary level, but its purpose is to introduce an awareness of key issues which will relate to their career development.

The aim of this module is twofold: to give an introduction to the world of business in a generic sense; and to introduce the student to the practices of specific branches of industry and business in marine science. Within our Masters programme, each course will attend Lecture Series I (The World of Business) with Lecture Series II being course-specific and involving guest speakers from the commercial sector.

#### **Lecture series I. The world of business**

##### Entrepreneurship

- The characteristics of an entrepreneur
- An introduction to the concept of the small business
- Routes into small firm employment
- The inter-relationship between large and small firms

##### Small business planning and development

- An introduction to the business plan.
- Predicting the future of small business development in the regions

##### Marketing: control and planning

- Core marketing concepts
- Marketing management
- Customer value and satisfaction,
- Marketing strategy
- Predicting client behaviour.

##### Human resources (HR): role, scope and responsibility of HR staff

- Strategic and administrative roles of HR management

##### Management and organisation

- The nature of management and leadership roles
- Organisational structure within business

**Lecture series II. MSc Applied Marine Geoscience: the offshore industry**

- Role of the contractor
- Role of the consultant
- Role of the research institute
- Role of professional bodies
- Case study site investigation: Seafloor characterisation
- Case study site investigation: Geohazard mapping

**Contact details**

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## **Example L: Students as consultants**

### **Gordon Clark, Lancaster University**

#### **In brief**

Students at Lancaster University can volunteer to become consultants to local tourism firms, producing a research report on a topic specified by the firm.

#### **How it works**

Two full-time staff, paid for by the European Regional Development Fund, run the Learning Tourism project which is based in Geography. This is part of the University's Third Mission work. The staff find small local firms (SMEs) in Objective 2 areas of Cumbria and Lancashire, which wish to have some research done to help develop their tourism or leisure businesses. Once terms of reference have been agreed, the opportunity is advertised across the University. Students from any discipline may apply, using a formal procedure with a letter of application and curriculum vitae. The firm and the Learning Tourism staff choose the student to be appointed to each project, trying to fit the student's disciplinary background to the task to be done.

Each project comprises 20 days' research work. The Learning Tourism staff train the student to become an 'apprentice consultant' working to a professional standard, using teaching materials prepared by the University's Careers Service. The staff also monitor the students' progress while carrying out the research, check health and safety issues, and deal with any crises. Once a report meeting the terms of reference and of acceptable quality has been delivered to the firm, the student is paid a fee of £800. The students who undertake these projects are all volunteers (over 50 so far), doing this in their spare time. They have been drawn from UK and overseas students, and a wide range of disciplines.

The types of research so far have included project development, investment appraisal, environmental sustainability audits, marketing and promotional planning, competitor analysis and benchmarking, and IT/web developments. The projects' effects in terms of job creation and increases in turnover for the firms will be measured during 2005. A few projects have failed, in that the firm has decided not to proceed with the project or the student has not performed as we would have hoped, but these cases are rare. For the students the main benefit, aside from the £800 fee, is curriculum enhancement through using academic skills in work for a real-world local company to a professional standard and within time constraints. They also gain a clearer understanding of how firms work and of entrepreneurship in action.

#### **Developments**

During late 2004 funds will become available to offer more student consultancies, first in Blackpool's tourism industry, and then, using Higher Education Innovation Fund (HEIF) and North West Development Agency (NWDA) money, more widely in the North West of England. The intention is to widen the recruitment of students to other NW universities, and to offer consultancies of different lengths. During 2005 a more formal evaluation of the scheme will take place. The Learning Tourism website at <http://learningtourism.lancs.ac.uk> provides examples of projects and training materials, and contact details.

#### **Contact details**

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## **Example M: Aberdeen Oil Game**

### **Gordon Walkden, University of Aberdeen**

#### **Introduction**

Professionally accredited degree programmes establish a mechanistic link with employability, but in practice the required 'elements' of these can fail to connect a student with workplace reality. Exercises can develop specific employability skills, and delivery by professionals will raise credibility, but problems remain of ensuring focus and student 'buy-in'. The Aberdeen University Oil Business Game addresses this by taking advantage of the unique atmosphere of a week long off-campus residential field course. It links a familiar learning activity with an immediate sense of 'need to know'. Students work, eat and sleep engaged in the Game, and the separation from daily reality maximises focus and buy-in. The extended contact also enables activities to evolve, skills to interact, the unexpected to happen. Realistic issues emerge and there is time for resolution.

The Game combines the already highly integrative activity of a discipline-based field course with the skills-rich demands of team play and competition. It demonstrates how self-knowledge, teambuilding awareness, pooled skills, effective division of labour and good command of geology play a key role in business decisions. The exercise also focuses upon how we cope with uncertainty and real deadlines in a competitive environment. By generating a 'need to know' the game demonstrates how knowledge 'adds value'. Despite its serious intent, which is to train employability and provide drive and focus for the field course, its pursuit is great fun for all!

#### **Outline of the game**

Individuals play as members of a pair and also as members of a six-person team (company). They earn 'cash' as individuals which they invest in companies (both their own and others) through a simulated stock market. Company share values are set by the companies themselves at the outset (floatation) and can then rise and fall according to the popularity of the stocks and the success of the companies. The central part of the exercise simulates a hydrocarbon licensing round where exploration/production blocks in an oil prospective region (e.g. the North Sea) are put up for competitive tender. Capital received from investors is used by the companies to assess, bid for and develop hydrocarbon prospects, hopefully at a profit. The blocks are precisely defined, based on real local geological maps, and they involve the actual rocks and structural features that are visited and examined in detail at various stages in the field course.

The development costs of fields, and the ultimate recovery figures are, of course, imaginary. After all, the rocks being examined are now at the surface rather than a couple of km underground, but figures are based on reasonable calculations made by the 'regulators' using exactly the same methods as the teams. Key tools in the Game are three specially-built spreadsheets. One records all individual share dealings and simulates stockmarket movements, another provides a means of integrating reservoir characters and volume to determine value, and the third calculates profit and losses made by companies after successful bids for blocks, exploration and production of any hydrocarbons. The results are calculated through the stockmarket spreadsheet on the last evening of the course. The winners are the team that makes the best profit through exploration and production from their block portfolio, but there is also a prize for the individual who makes the best profit through a wise choice of stockmarket investments in the companies!

The game is fully integrated with daily geological itineraries, and most of the supporting research, value calculation and field work planning is done in the evenings – often (and without encouragement) into the small hours of the night.

## The programme

- Day 1: Outline and rules of Game, publication of personal CVs
- Day 2: Interviews, team building, allocation of personal capital
- Day 3: Company floatation, the stockmarket, buying shares
- Day 4: More share dealing, allocation of consultancy work to companies
- Day 5: Powerpoint presentations by companies, fees to companies, exploration/production license blocks are revealed
- Day 6: Team research evaluating blocks
- Day 7: Bids for block licenses by tender, allocation of blocks, calculation of profits/losses, stockmarket results.  
Individual and team winners, prizes.

By their own account, students learn a lot about their own personal and interpersonal skills and often they appreciate for the first time how the application of good scientific skills can inform business decisions. Evidence for the ways in which their employability skills have been exercised and developed is usually contained in a series of daily Business Game notes, reports and reactions which students are expected to maintain. The overall exercise is assessed by submission, but relative success in the Game is not part of this. Instead, we look for a structured and responsive approach to the exercise, including evidence that students have developed and used their geological knowledge during the progress of the Game.

## The learning outcomes

- Advanced geological knowledge, both general and specific.
- How information can inform commercial judgements and create added value.
- Enhanced skills, especially jobseeker skills, self-management, communication, numeracy, problem-solving, decisions and teamworking.
- Experience of the conflicts between fact finding, uncertainty and short deadlines in a competitive environment.
- Awareness of the roles of business organisations, stock markets and central and local government in relation to resource exploitation.
- Awareness of the effects of business decisions on people and the environment.

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**Enterprise, Skills and Entrepreneurship**  
***Enhancing the curriculum in Geography, Earth and***  
***Environmental Sciences***

**Section 4: Case studies of**  
**GEES entrepreneurs**

- (a) Colin Deady: Ethical WebSites
- (b) Ben Malin: Terraqueous Ltd., Environmental Consultancy
- (c) Nick Russill: TerraDat Geophysics
- (d) Emma Smith: Fairfield Materials Management



## 4(a) **Colin Deady: Ethical WebSites**

**Graduated from the University of Plymouth in 1997, BSc (Hons)  
Environmental Science**

### **Stage I: Pre-project**

#### **Childhood experiences/ambitions: background influences and traits**

The idea that one can be successful in self-employment came to me after discussion with my father. Although he had never been self-employed at the time, his extensive experience of working with business (employed by Berkshire County Libraries as a Business Information Officer) allowed me to explore ideas for self-employment on paper before committing myself.

My career aspirations as a child were completely different! I had at one point wanted to become a Veterinary Surgeon but realised that the trend at the time was for universities to only offer such courses to 'straight A' students, whereas I could be described as a 'straight B'. Once I realised that this was not to be, I decided on a career in the environmental sector and successfully completed a degree in Environmental Science. However upon graduating I realised that there is an unfortunate 'catch 22' with environmental work – most companies want you to have experience before employing you but to get that experience you need employment (and voluntary work does not pay the bills unfortunately). I was lucky to find a 50:50 job with the Centre for Sustainable Energy in Bristol, working as an Environmental Project Officer (sustainable development) and the organisation's IT System Administrator. It was from this basis that I was able to develop my IT skills to a point where I now have two jobs – by day I am a Software Test Engineer for Centennial Software in Swindon, and 'by night' I am self-employed, working on EWS.

#### **Perceptions of self-employment/motivations**

What really attracted me to self-employment was the 'be your own boss' attitude of those people who are self-employed that I had met. However I realised that EWS would at best provide me with 1/3 of my income and that I would need a steady day job in addition. I realised that I was to leave all environmental work behind when I started on a career as a software tester and therefore EWS was motivated by my desire to remain involved with environmental organisations and the excellent work that they undertake.

#### **Skills gathering: part-time jobs / school / university**

Business skills came late in the day! In hindsight I should have paid much more attention to subjects such as project management, invoicing and accounting from day one – but these are boring subjects, with designing and writing websites being much more interesting!

At school I had the typical 'hotel kitchen staff' job that many teenagers do. Low pay, horrendous hours (for the pay) and not a smidgen of job satisfaction turned me completely off the service industry – but it gave me great respect for those on low pay and in part this was one of the reasons for the remit of Ethical WebSites: 'high quality with low cost' – to provide websites to organisations that just do not have the resources available to spend a fortune on their internet presence.

I was employed full-time (and still am) before setting up EWS and the two balance each other very well. On the one hand being a keen software tester means that I am very thorough when testing the websites that I write; and on the other, being a 'web developer' gives me more respect when I am working as a tester for the difficulties faced by Programmers, Developers and Software Engineers.

## **Idea generation**

Interestingly EWS was formed in 2000, only a year or so into the 'dot com boom' and I have been asked if there was a 'get rich quick' formula behind my plans. If only this was the case! The truth is that the dot com's showed me that individuals could create successful web-based businesses. Coupled with my father's excellent advice on working in business, and my mother's extensive knowledge of the UK tax system I found that I had lots of business-oriented inspiration. As mentioned earlier, I also had a great desire to stay involved with environmental organisations even though I could see my career going into a purely IT-based one. EWS was therefore a combination of all of these factors – a desire to provide something that almost no-one else was providing at the time: websites dedicated to providing success online for small environmental and social organisations.

## **Stage 2: Early development**

### **Information gathering. Problems/positives/actions**

Once I had discussed the outline with my father and mother I realised that EWS would be a viable venture. You see, unlike a lot of people in self-employment I was lucky – EWS did not have to succeed as it would only ever account for a proportion of my annual income. As it turns out EWS has been hugely successful and has now worked with several local authorities, small charities and other organisations.

Firming the idea into reality did involve a large amount of market research online. I searched everywhere I could for web development agencies specialising in environmental and social organisations and came up with almost no hits in any of the search engines of the day (Lycos, Yahoo, Alta Vista being the main three at the time – Google had yet to grab market share).

The only problem I came against was that to develop websites I needed up-to-date computer technology and all of my computers were starting to show their age. I opted for a £600 Windows PC as my base development machine, bought because of price rather than performance and bought (with the help of my father) a couple of domain names – ethicalwebsites.com and ethicalwebsites.co.uk. I also bought a cheap printer (good for printing out mock-ups of web pages to show clients) and a low capacity zip drive for backing up data. Total start-up cost was in the region of £800 – not bad for a new business!

The reason I was able to get into business so cheaply is that working online brings huge advantages – a domain name and web space can set you back as little as £25 a year, or possibly £100 if you have a large website. This provides you with a 24x7 365-day-a-year advertisement for your products, services, and possibly even an online shop if that is your cup of tea. As I was in the business of writing websites I had no need to pay someone else to write mine, further reducing costs. Compare this with the activities for a 'high-street business': renting premises, paying for advertising in magazines etc. This can easily run into thousands of pounds before you have sold your first widget!

### **Ideas stage to the beginning of the project**

I talked a lot about EWS as a possible secondary source of income with my wife. Julia has always had a much more practical head on her shoulders than I, and I am very grateful for this input! She helped me identify that we could not afford much to start the business – we agreed that the entire cost had to be below £1000, and I am pleased to say we stuck to this.

The only difficulties I had were getting EWS known. I tried lots of online marketing by registering the site on this and that search engine, web directory etc. In the end I realised that although my business was online, it would be through word of mouth that I would gain contracts. This has proved true with over 75% of new business resulting from a contract being generated as a spin off of either existing work, or because a client recommends me to someone that they know.

Things are starting to change though and EWS is now known online. You wouldn't believe the amount of money I have been offered for the domain names alone! People recognise there is value in being able to state up front: 'we can help you, we will be honest with you and ethical in the way we deal with you.' The EWS website sells this theme both in its domain name and the web content therein. As a result I am beginning to see contracts being generated by people who come across EWS purely by searching.

### **Running with the project / early stages**

It was very stressful – hugely so! I had no idea how long a site would take to develop and would vastly underestimate. However I prided myself and EWS' reputation on completing a contract by the specified deadline and would quite often be working from 6pm until 2am in the morning after getting home from my day job, and then getting up to work again from 9-5!

However it was very enjoyable at the same time. I love the freedom and creativity that designing websites gave me, as I had always been useless at 'arts and crafts' at school. At last I could design, create and implement my own and other ideas in a very visual manner!

### **Expectations versus reality**

'Yes and no'! My expectations were for an easy life, producing web sites and making money – isn't that how everyone sees self-employment ;o)! However my family helped earth me and make me realise that it takes a huge amount of effort to reap the rewards.

If I was to talk with someone about entering self-employment I would say: "You know the amount of effort you think it will take? Treble it. You know the amount of time you think it will take? Treble it."

Does that mean I don't recommend self-employment? I think it is a fantastic opportunity as I would also say: "Yes, you really really really get to be your own boss – and that is quite often worth suffering all of the problems you will undertake on its own!" You see, self-employment offers an individual the chance to dictate their own boundaries, work, direction for their creative output. Although I enjoy my day job, I have to work to other peoples' schedules, deadlines, and on tasks that they assign me. I love balancing this with the creative freedom of writing websites.

## **Stage 3: Present day**

### **Lessons learned. Challenges met**

- 1) It takes a lot more time and effort than I thought!
- 2) I should have read number 1 and taken this into account from an earlier stage.
- 3) It is great fun and very rewarding.
- 4) I have met the challenge of starting with nothing to building up a nationally-known web design and development agency.



**What I wish I'd known / top tips**

- 1) Prepare for the end of year tax return from the **start** of the year, and do not leave till the end! A well-documented set of receipts and invoices will halve the amount of time it takes to complete your tax return.
- 2) Spend time researching your business area – I bought lots of web design/development books early on and balanced this with several business-oriented ones.
- 3) Learn about creating effective invoices, terms and conditions and an applicable privacy policy that satisfies the Data Protection Act.
- 4) Register with the Data Protection Act; as a business this is pretty much compulsory (EWS is of course registered!)
- 5) Research and find clients – use directed marketing techniques if applicable, BUT do NOT send out bulk unsolicited email; this is SPAM and will get your business a black mark almost immediately. EWS has a policy of **never** dealing with any organisation that we consider to be sending out SPAM.

EWS provides high quality internet solutions for UK companies and organisations, focussing on those involved in the environmental and social sectors. EWS brings together the talents of several individuals to offer effective high-quality websites to organisations who are traditionally excluded from having such an internet presence due to prohibitive cost.

<http://www.ethicalwebsites.co.uk>



## **4(b) Ben Malin: Terraqueous Ltd., Environmental Consultancy**

**Graduated from the University of Kent at Canterbury in 1994, BA Geography & The University of Cambridge in 1995, MPhil Land Economy**

### **Stage I: Pre-project**

#### **Childhood experiences/ambitions: background influences and traits**

There may be elements of my character that point towards self-employment, as I am to a degree an 'organiser', but I am probably not the best person to make that judgement.

My father has been a senior business executive for many years and my stepfather is Managing Director of his family's growing media business, both of which undoubtedly reinforced my desire to be involved in business. Self-employment has, however, been a long-term aspiration and I recall an occasion at Primary School when we all had to choose a job to talk and write about. Much to the amusement of my teacher I chose 'Managing Director'.

Whilst there were periods when I may have said that I wanted to follow a specific career, for example law, this was usually a response to the perceived 'need to say something'. People frequently ask a teenager what they want to do, be it a teacher, careers advisor, family or friends, and the response 'work for myself' rarely seems to satisfy them. When in the Sixth Form my immediate ambition was to read Geography at university and when asked what I wanted to do afterwards, I would say that I would 'look for a niche in the market'.

#### **Perceptions of self-employment/motivations**

From my perspective, the desire to be in control to some extent was the most important motivation in considering self-employment as an option. In fact it is often the clients that are in control, but at least I am in the position of decision-maker in terms of day-to-day planning and which projects we accept (and which we put in an outrageous quote for). I have also been motivated by the desire to achieve something myself and for myself. The other important factor is the understanding that I developed as a geographer of the importance of both environmental issues and manufacturing to the economy. Whilst we are not directly involved in manufacturing we do contribute in a small way to the success or otherwise of the manufacturing sector.

Perception of entrepreneurs may have had some influence on my decision-making, but I am not certain that entrepreneurs are always the most attractive personalities. Much of that may, of course, be a matter of media presentation but a number of current entrepreneurs are presented as somewhat anodyne. Others are more interesting if not necessarily more pleasant. The perception of the rewards available to entrepreneurs was certainly a factor but there are also several high profile examples of the potential pitfalls.

#### **Skills gathering: part-time jobs / school / university**

The part-time job as a horticultural nursery worker that I had whilst at school and university and after graduating was of limited relevance to setting up my own business, although it did teach me how to work hard and reinforced my view that I wanted to work for myself.

I was fortunate to have the opportunity to go directly from this to setting up Terraqueous Ltd. and the skills that I learnt during my degree courses were the most important in setting up the business. In particular I would point to the ability to carry out research and project work as invaluable.

After graduating I spent three months in southern India carrying out a voluntary research project into agricultural failure for a small NGO. The skills that I learnt from that were also helpful, particularly the need to break down a project into very small elements when faced with a very big issue and very limited resources. My time in India, including a week in hospital on a drip, also helped me to decide where my priorities lay. As a result I resisted the bright lights and large salaries of the City of London, where a number of my friends from university had jobs.

### **Idea generation**

During my three years as an undergraduate reading Geography, the idea of working in environmental consultancy took root. Whilst I had a preference for human geography, the 'applied physical course' that I took as a second year was a particular inspiration. My undergraduate dissertation and the extended essay that I wrote as part of my Masters both pointed towards environmental consultancy. I did, however, consider other alternatives such as a career in the City or in development economics.

In the summer of 1996 I had returned from India and my brother had graduated from Reading University, where he had read 'Rural Resource Management'. We both spent the autumn of that year applying for a variety of jobs, some in the field of environmental consultancy, but without success. We also toyed with ideas for our own business, but no firm plans were developed.

## **Stage 2: Early development**

### **Information gathering. Problems/positives/actions**

The opportunity to establish Terraqueous Ltd. was delivered by serendipity. In Autumn 1996 my stepfather proposed to enter three areas of company land into a Countryside Stewardship Scheme 'Special Project', which required the preparation of a 'Restoration & Conservation Management Plan' for each site. He knew that my brother and I were both seeking to do something in that field and told the Stewardship Officer that he would ask us to prepare the plans for him. We thought nothing more of this until late November 1996 when my brother and I were invited to an interview in order to demonstrate that we were sufficiently competent to prepare the plans.

### **Ideas stage to the beginning of the project**

We learnt that the interview panel would be made up of representatives from Somerset County Council, MAFF (now DEFRA), English Nature, Somerset Wildlife Trust and the RSPB, and that in addition to ourselves they would be interviewing two established consultancy firms. At that stage we had no real expectation of doing anything more than the three plans for my stepfather as a method of gaining experience.

We prepared for the interview by going through the plan brief in detail and breaking down the method by which we proposed to deal with each section. This formed the basis of the presentation that we gave, which also included a brief review of our qualifications and our dissertations / extended essays. We were fortunate that we both had some experience of similar project work from our dissertations and extended essays, which we used at the interview in order to demonstrate our ability to complete projects of this nature.

Shortly after the interview we were informed that we had passed and the two established consultancy firms had both failed. I am sure that they had both sent juniors and were under-prepared, but for a time we were the only approved consultants – one of the firms was re-interviewed and approved a couple of weeks later. In the meantime we were approached by

my stepfather's Land Agent, who worked for a local firm. He asked us to quote for the preparation of five further plans for some of his other clients. We duly did so and were awarded all five contracts!

That gave us eight projects to complete, with a total value of almost £10,000. We immediately realised that there was an opportunity to do far more than gain experience. A meeting with an accountant followed, and soon we were directors of our own company. At the time it felt like the most difficult part of the process was thinking of a company name – and after much thought we settled on Terraqueous Ltd. This seemed appropriate for a company preparation restoration and management plans for wetland sites.

### **Running with the project / early stages**

At the start of January 1997 we were therefore immediately presented with the eight projects, to be completed in a two-month timescale, but the first couple of weeks were relatively relaxed as we carried out site surveys. As we had both been living at home and working prior to starting our business the limited finance required was not a problem. We had access to a computer, but purchased an optical level and other supplies secure in the knowledge that we had almost £10,000 of contracts, and worked from home. At that time we produced hand drawn site plans, as I had been taught to do as an undergraduate.

Before we had even half completed the first round of projects we were again approached by my stepfather's Land Agent, with a number of smaller but urgent jobs of a similar nature. These were completed and submitted within two weeks, and when the Land Agent saw these he immediately started to provide us with a steady flow of additional projects for various clients.

Unfortunately, however, the additional work put us under significant short-term pressure with the original eight projects, which each turned out to be in the region of 80 pages long. As this was a new scheme we were not constrained by existing formats, but this meant that we had to undertake some of the development work ourselves as problems became apparent and had to be overcome. It was very similar to writing a dissertation or extended essay in so much as in the early and middle stages of each project 'the more we did, the more there was to do'. For a long time the more survey and research work we did, the more queries and points for clarification were raised. The week before the deadline for the draft reports was extremely stressful, with late nights, early mornings and a dash to submit the drafts on the last afternoon prior to the 5pm deadline. In many respects it was again similar to the situation in my final year as dissertation deadline day approached.

After that initial period we were able to take stock, and begin to look at the financial side, which we had not had time to consider in detail up to that point. For example, we had to learn how to run a payroll, draw up a rudimentary first year budget and recover our expenses to date. Our accountant was invaluable during that period. Broadly, however, we were fortunate that we did not have to seek work at any stage and the more projects we completed the more people came to us with further projects.

### **Expectations versus reality**

In some respects the reality of running my own business has met my expectations, but in other ways it has not. On the plus side we were able to pick and choose when we worked for the first couple of years, when the workload was constant but generally reasonable. At that time we also had a limited cost base and were satisfied with earning more than we had previously. Whilst the day to day planning is still in our hands we are now constantly busy and usually work a very long week. When it is your own business to do so is understandable, but not what you would hope for at the outset.

We are continually disappointed at being let down by other people, particularly where cash flow is concerned. The length of time that people take to pay, when they know that we are a small business and cash flow is crucial, is a constant issue. At times it can also be very difficult to truly relax and let go during business hours, even when away on holiday.

Overall, however, I would have to be offered a great deal of money before I was willing to work for anyone else, and only then as Managing Director. I also still enjoy the perks, however small!

### **Stage 3: Present day**

#### **Lessons learned. Challenges met**

Whilst organisation is a key to business success, probably the most important lesson that I have learnt is the need to take personal responsibility, which is very often missing in large companies where individuals are often terrified to make a decision in case it is wrong. I think that is something that our clients appreciate.

Importantly I have also learnt that almost nothing is impossible – whatever your client asks there usually someone, somewhere who can offer the service. It is matter of finding that person and the client accepting the cost. Managing cash flow, and not buckling under the pressure of adverse cash flow conditions, is also important.

I would also say that it is important to recognise that you can be very good at what you do, but you won't necessarily make a fortune quickly. Also, you don't have to do something forever – if you have set up a business once in one field it must be possible to do it again in another.

Finally, it is important not to get personally involved and to switch off at the end of the day, even if you have to accept that clients will occasionally ring in the evening or when you are on holiday.

#### **What I wish I'd known / top tips**

Whilst the good fortune at the set up stage that we experienced cannot be directly replicated there are a number of points that can be of value to others. These are:

- I believe that the value of gaining experience in any way cannot be underestimated.
- Don't be intimidated by other firms. An established firm can't necessarily do something as well or better than you – often junior staff are given tasks that you can do far better and at lower cost to the client.
- If you are asked to do something that you can't do, some else will be able to as a sub-contractor.
- In some respects we were saved from worrying too much and thinking that we needed all the equipment as we were thrown in at the deep end. A consultancy company does not have to have a big investment to get started.
- With just your own capital and limited expenditure there isn't too much to risk.
- At the start work at home to keep cost down, but move to a separate office as soon as you can – it is more professional and allows you to become more detached.

At the outset I wish that I had known the level of fees that other consultants charged. We started with our fees too low and as a result cash flow became very difficult in year two when costs mounted but our fee income did not. If I had known the level of professional fees in general we could have started at almost double our initial hourly rate. Whilst low fees helped to build the client base that is certainly an area where time for more research at the outset would have been beneficial.

### **Terraqueous Ltd. – Environmental Consultancy.**

Terraqueous Ltd. is a small environmental consultancy firm that was founded in January 1997 by my brother and I. The company specialises in wetland issues and providing services to the 'growing media' industry. The primary component of growing media remains peat and Terraqueous deal with applications for planning permissions, reviews of existing permissions, environmental assessments, conservation designation issues and preparation of working/restoration/drainage schemes in order to discharge planning conditions. Terraqueous also oversees and organises the implementation of various permissions and schemes, in particular site restoration works. I have also given evidence on behalf of clients at Public Inquiry.

Recently we have also been involved in a number of projects related to seeking planning permission and Waste Management Licences for, and the management of, green waste composting facilities. This is a developing part of the business. Terraqueous is also involved in more general planning issues such as housing, leisure and industrial developments and mapping work. Whilst our client base is primarily in the private sector we have carried out some work for English Nature and RSPB. One of our recent projects has been to prepare a Restoration Plan for a Historic Park and to secure substantial grant aid in order to assist our client with the restoration. We are currently project managing the restoration works.

Our client base varies from multinational growing media manufacturers, Plcs and trade organisations to individuals seeking environmental and planning advice. Terraqueous Ltd. is a DEFRA approved consultant for the 'Countryside Stewardship Scheme Avalon Marshes Special Project'. My brother and I remain the only employees and where specialist skills or inputs are required we employ appropriately qualified sub-contractors.

<http://www.terraqueousltd.co.uk/>

**TERRAQUEOUS LTD.**  
ENVIRONMENTAL CONSULTANCY

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## **4(c) Nick Russill: TerraDat Geophysics**

### **Graduated from the University of Cardiff in 1992, BSc Exploration and Mining Geology**

#### **Stage 1: Pre-project**

##### **Childhood experiences/ambitions: background influences and traits**

As a child I always wanted to do a job outdoors, but did not really know what. I was always very independent and resourceful and never a follower of the crowd. I think this was driven in part that I went to 6 different schools so being resourceful was a survival mechanism! At the age of 15 I converted some outbuildings on my parents land and ran a licensed dog boarding kennel before and after school.

##### **Perceptions of self-employment / motivations**

When I graduated I worked in Australia on a remote exploration camp for a large mining company. I realised during this experience that I did not want to be employed by 'distant bosses' and had a view to be a freelance. It was the frustration at bearing the consequences of other people's bad decisions and the inflexibility that made me think this.

##### **Skills gathering: part time jobs / school / university**

The nature of my first job and training as a geologist I believe gave me a lot of skills such as logistical planning, spatial awareness, multi-dimensional perception that are important elements of running your own business. I worked as an outdoor instructor during the holidays at university which developed other relevant skills. Before starting work I also went on an expedition to NE Greenland which again made me aware of interpersonal skills, leadership abilities and ones own physical and mental limitations.

##### **Idea generation**

With my business partner, we spotted an opportunity of the change in environmental legislation regarding contaminated land, and also a revolution in geophysical instrumentation making it more portable and higher resolution – better suited to shallow high resolution applications.

We are also keen surfers and another focus was undertaking seismic surveys on beaches for a living. This was our focus, but ironically we have never had such a job!

#### **Stage 2: Early development**

##### **Information gathering. Problems/positives/actions**

We never set out to actually set up a company. I am an instinctive networker and used some contacts in the waste management industry that I had to do some geophysical trials. This necessitated us having a company structure in place in order to get insurance, bank to receive money etc. We had no problems and grew organically.

##### **Ideas stage to the beginning of the project**

We were based from our student house originally and later formed a mutually agreeable arrangement with Cardiff University whereby we were accommodated in return for our time as lecturers/supervisors. We had a loan and start up grant from the Princes Trust and were the first



graduates to get funding (as opposed to their former policy of only funding deprived or more needy people). Getting the expensive equipment needed to carry out geophysical surveys was not a problem as we formed good relationships with a company who rented kit.

### **Running with the project / early stages**

The first few weeks were fairly intuitive designing some brochure material, writing marketing letters and going to meet prospective clients. We also got a few small jobs by phoning around. I don't recall it being particularly stressful.

### **Expectations versus reality**

Yes, completely. I had the flexibility of being my own boss, the satisfaction of completing projects well and having satisfied customers. We also had time to contribute academically to various events of interest.

## **Stage 3: Present day**

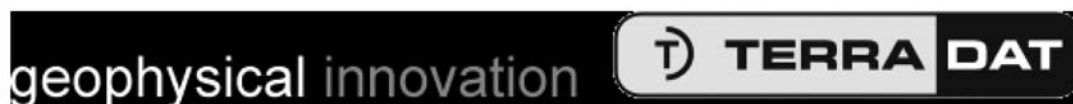
### **What I wish I'd known / top tips**

1. Don't get bogged down in detail outside your core business. The value of your time is greater if spent developing the business compared to spending a lesser amount outsourcing tasks such as VAT, book keeping.
2. If you have a partner or work colleagues, learn to delegate key tasks early on otherwise you end up as being an irreplaceable hub at the centre of an operation.
3. When you are successful (or very busy) don't lose sight of where you came from (or how you got there).
4. Have a long term strategy – is the business what you want to do forever? If not, remember there are other options and you will be optimally skilled to take them!
5. Remember why you are working for yourself and what it is you enjoy doing. Have fun and don't become a slave to your staff or clients.

Going straight into business on your own may not be the best way since there is a lot of valuable experience to be gained as an employee working in industry. It helps you understand how things appear from the other side of the fence (for the day you will be a boss), and if nothing else reinforce your reasons for wanting to be self employed!

Form strong partnerships with suppliers – they know the industry and can be a good source of referral work if the relationship is good.

Make your name known – the local media / online newsgroups are always keen for information. Go to networking events or local industrial societies.



TerraDat UK Ltd: leading UK geophysical survey specialising in non-invasive surveys of contaminated land, brownfield sites, mineral and water exploration and geotechnical problems. The company employs 13 geophysicists and is fully equipped for all the main methods including microgravity, radar, resistivity, seismics, magnetics and EM conductivity. TerraDat has offices in Cardiff, Melbourne and Dublin.

Out of TerraDat have spun two sister companies:

- Terralogic Ltd: supplier of ruggedised computing solutions for military, public service and private users who need ultimate in IT reliability in extreme environments. Terralogic was number 4 in the Wales Fastrack 100 in the fastest growing companies in 2004
- Snow-forecast.com: driven by our passion for snowboarding and abilities as earth scientists, this is an online resource for snow sports enthusiasts providing weather and snow condition reports for over 800 resorts worldwide. It is one of the busiest websites of its kind and will soon be accompanied by a sister site for surfers – [www.surf-forecast.com](http://www.surf-forecast.com)





## **4(d) Emma Smith: Fairfield Materials Management**

**Graduated from Manchester Metropolitan University in 2002,  
MSc Environmental Management and Sustainable Development**

### **Stage 1: Pre-project**

#### **Childhood experiences / ambitions: background influences and traits**

I've always had an interest in broad environmental issues from a young age. I tried various jobs after my first degree (Human Geography) and quickly realised what I didn't want to do but couldn't quite decide what I did want to do. My Masters gave me a focus, my dissertation on plastic recycling introduced me to the recycling industry and I became a volunteer for EMERGE Recycling (not-for-profit household and commercial recycling business). Fairfield Composting (which at this time was a project of EMERGE Recycling) promoted home composting in Manchester through the work of its full-time unpaid worker (Val Rawlinson). Val wanted to tackle the waste problem on New Smithfield Market and recruited me to undertake a waste audit, my role as a waste auditor moved on to a researcher / fundraiser / developer / project development manager and director.

#### **Perceptions of self-employment/motivations**

I suppose the big names were Branson and Roddick when I was young; they almost became synonymous with the word entrepreneur. Now that I work in this environment I have a huge amount of respect for people who have decided to 'go it alone' because whatever happens/goes wrong the buck ultimately stops with them. I suppose I almost fell into this role or rather the role progressed with my own development. Working for yourself is so different to any other role I've ever undertaken, it is never just a job.

#### **Skills gathering: part time jobs / school / university**

Every job that I've ever had has developed my skills for my current role, selling fork lift trucks developed my telephone skills and sales ability, working as a carer for a wheelchair user brought out a more selfless side to my character, working for a Council developed my working knowledge of the internal structures of local government and living in India for 1.5 years showed me what 'real work' was and the true meaning of being an entrepreneur.

#### **Idea generation**

Val Rawlinson was committed to improving the waste management system on New Smithfield Market; the audit showed that the markets' annual waste level was 5,500 tonnes and that 81% of this was fruit and vegetables. I would say that it was Val's dream that I turned into a reality.

### **Stage 2: Early development**

#### **Information gathering. Problems/positives/actions**

The waste audit provided the information to support the development of an in-situ waste management facility on New Smithfield Market. We presented the results to Manchester Markets (Manchester City Council) along with our recommendations, establishing this support from the beginning really helped the development of the Fairfield system. I went through a fast track business-planning course in East Manchester that highlighted the lack of local compost on the market, supporting the development of a local composting system. Problems were mainly financial, actually raising the money to pay my salary to enable me to develop the project.

## **Ideas stage to the beginning of the project**

Fund raising was a major element of this project as the capital equipment we needed was expensive, I started fund raising before I even undertook the waste audit and it was a steep learning curve. Fund raising was incredibly difficult and demoralising, but once we had the first funder on board it was much easier to bring others on board. We knew that we wanted the project to be located on the market to reduce the environmental impact of transporting waste, initially we thought we'd locate it in the existing waste area but actually ended up locating in a corner of the market away from most of the traders.

The project was developed by myself (environmental background), Val Rawlinson (the queen of composting) and Chris Walsh (social enterprise expert) and this range of experience worked well.

## **Running with the project / early stages**

The business was incorporated in December 2002 and started operating on the market in July 2003, getting a good team was an essential element our relatively smooth start-up. I'd say that we had teething problems and several of our 'paper' systems were revised once we started but it was relatively straightforward. We've actually had more problems after a year of operation than we had at the beginning of the project.

## **Expectations versus reality**

Running your own business is hard, emotionally and physically, you definitely need a good support system (both at home and at work) it can be demanding but it is also extremely rewarding. Again I feel that I've fallen into the role of running a business, I envisaged a situation where I would develop this project and get it operational and then move onto the next project, and in reality I'm running this business. The short-term plans for Fairfield are to bring in a business manager to manage the day-to-day which will release me to concentrate on improving sales/efficiency and site functions and then move onto the next project!

## **Stage 3: Present day**

### **Lessons learned. Challenges met**

- Planning, realistic timescales and a robust development budget are essential in the beginning. I think that we wasted money because we allowed timescales to slip (more rental days on equipment etc.).
- Barter with anybody and everybody to keep costs down, if you don't ask then you don't know (always start the sentence with 'can I be a bit cheeky ...').
- Recruitment is a gamble and sometimes a good interviewee is not necessarily a good employee!
- Record and file everything, start your business as you mean to go on.
- Identify people who could become voluntary directors and provide support to business.
- Identify areas of inexperience and look for training/mentor support.

### **What I wish I'd known / top tips**

- Go on a project management course because setting up a business will be the biggest project you ever take on; I went on a Council-run course the other week and it provides a very structured approach that I wish I'd had three years ago.
- Get key people (service users/customers etc.) on board from the beginning to provide support and ensure that your business will meet a specific demand.
- Once you've set an aim stick to it, do not diversify or you really risk the chance of spreading yourself and the business so thin that you do not deliver on anything.

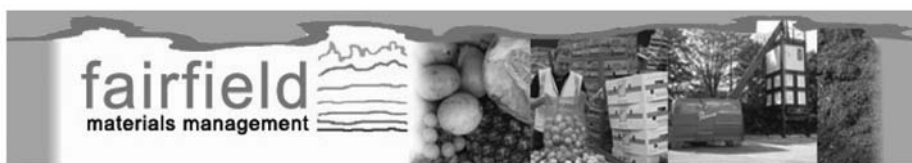
## Fairfield Materials Management

Fairfield Materials Management – social enterprise incorporated in 2002 to deliver a sustainable waste management system for New Smithfield Market (wholesale market in Manchester).

Fairfield has an in-situ composting facility (Vertical Composting Unit – VCU) for fruit and vegetable waste generated on the market..

Compost is sold to householders, allotment holders, parks, schools, top soil company and Manchester City Council.

<http://www.gmcomposting.co.uk>





**Geography,  
Earth and  
Environmental  
Sciences (GEES)**

## **GEES Subject Centre**

The Subject Centre for Geography, Earth and Environmental Sciences (GEES) is part of the national network of the Higher Education Academy, an independent organisation for the UK higher education sector. The GEES Subject Centre aims to improve the learning and teaching experiences of everyone in these disciplines in UK and is a national and international hub in the exchange of knowledge on learning and teaching across the three subjects. It provides a voice for these communities, contributing to government consultations and policy developments. The Centre has a UK-wide brief and this is reflected in the locations of its activities which include:

### **Events**

The GEES Subject Centre organises a wide range of events and collaborates with other organisations to provide: national conferences, departmental workshops, seminars for new lecturers, and support events for project grant holders.

### **Publications**

The GEES Subject Centre produces the bi-annual publication *Planet*, containing articles on learning & teaching, project updates, a diary of forthcoming events, resource information, and news of interest to staff and students in the GEES disciplines in higher education. Other publications include Learning and Teaching Guides, and Resource Briefings.

### **Resources**

The GEES Subject Centre Resource Database brings together high quality resources for higher education learning and teaching in the Subject Centre disciplines. It includes information on case studies of good practice, tutorials and CDs.

### **Enquiry Service**

The enquiry service is open to all GEES staff in higher education and deals with a wide range of queries throughout the year on teaching and learning.

### **Research and Development**

The GEES Subject Centre has an ongoing programme of support for pedagogic research and development projects. Funds have been awarded for research into topics including employability, virtual-learning environments, fieldwork, and postgraduate teaching.

### **Contact**

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News and information about GEES Subject Centre activities can be received through signing up to the regular announcement list at: <http://www.jiscmail.ac.uk/lists/GEES.html>