

ENTERPRISE AT WORK

Exploring intrapreneurship in researcher development

A collaborative project with
UK higher education institutions



CRAC

The Career Development Organisation

in association with



Incorporating the UK GRAD Programme and UKHERD



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Executive summary

Both businesses and universities are encountering more competitive and challenging global environments. There are growing expectations of universities to produce skilled researchers appropriate for business and academic needs. Over the last few years, catalysed by the Roberts Review in 2002¹, there has been a range of developments to embed skills and career development as part of research training in UK higher education institutions (HEIs). Government focus on innovation and enterprise as part of the global competitiveness strategy has led to specific funding² for the development of researchers' enterprise skills. The Research Councils are calling for better understanding of the economic and social impact of researchers and their careers, and with that, strengthened skills in enterprise and knowledge transfer³.

This collaborative project was developed with the universities of Cardiff, Durham, Edinburgh, Manchester, Nottingham, Strathclyde, Warwick, with Queen Mary (University of London) and University College London, and CRAC: The Career Development organisation, in association with Vitae⁴. The project took as its starting point the idea that 'intrapreneurship' has similarities to the more widely known concept of 'entrepreneurship'. The key difference is that 'intrapreneurship' takes place within, and thereby benefits, an existing organisation, whereas 'entrepreneurship' involves creating new entities beyond current structures. The majority of early career researchers have no immediate aspirations to start their own companies, but there is often an important role for them to 'instigate renewal or innovation within an existing organisation'⁵. This project explores some of the strategic and practical issues around developing intrapreneurial capabilities in researchers.

As the global research environment becomes more competitive, acknowledging and understanding the skills, traits and capabilities of researchers who drive and create internal change within universities is becoming more important. These are also important skills for employment in organisations outside higher education. Intrapreneurial capabilities include gaining personal reward from seeing an idea through, spotting opportunities, having the confidence to lead or initiate change processes, taking risks and being resilient – all within an organisational context. Intrapreneurial experiential learning involves creating opportunities

that enable researchers to engage with a real life problem or challenge in an organisational context, learn as a social as well as individual process, use lessons learned and new learning. Intrapreneurship in action can serve an integrating function, mapping onto existing transferable skills development provision and research activity itself.

Within the project we aimed to explore the extent to which existing provision draws out intrapreneurial awareness and learning. Overall, we identified a range of enterprise or researcher-led activities, but we found that there was usually little or no 'formal' recognition of intrapreneurship within researcher development activities. We found potential for developing intrapreneurial skills in a range of existing activities, including providing placements, mentoring, surveys and evaluation processes and enterprise training courses, competitions and workshops.

A small number of case studies were identified where universities were embedding intrapreneurial capabilities into their researcher development activities. These included the 'Launchpad: sustainable intrapreneurial opportunities for researchers' initiative at the University of Strathclyde, and a 'Take the Initiative' scheme at Queen Mary, University of London.

The project team also explored whether a greater understanding of intrapreneurship capabilities may create greater momentum and engagement with wider enterprise and entrepreneurship activities within universities. For some researchers the commercialisation of research is not appropriate or of interest. Intrapreneurial activities may be an opportunity to include more staff who might suggest changes and improvements to the workplace and to developing an enterprising attitude towards their research and working practices.

Employers outside the research environment cite the skills that they are looking for in researchers around recurrent themes. We found some commonality in the skills that are identified in intrapreneurs, and those that employers of researchers typically look for. In particular, both skills sets include taking initiative, the ability to solve problems and work to remove barriers, commercial awareness, personal enthusiasm and motivation.

¹ www.vitae.ac.uk/roberts

² <http://www.rcuk.ac.uk/cmsweb/downloads/rcuk/researchcareers/07repsument.pdf>

³ <http://www.rcuk.ac.uk/innovation/impact/warry.htm>

⁴ Vitae incorporates the work of the UK GRAD Programme and UKHERD www.vitae.ac.uk

⁵ Sharma, P and Chrisman, J.J. (1999) 'Towards a reconciliation of the definitional issues in the field of corporate entrepreneurship' *Entrepreneurship Theory and Practice*, 23 (3): 11–27.

Recommendations

The project team highlight three groups of recommendations to take forward: promoting awareness and understanding of intrapreneurship; embedding a strategic vision to support intrapreneurship; and developing practice and culture in HEIs to support intrapreneurship capabilities.

Promoting awareness and understanding of intrapreneurship

This project investigated the capabilities identified in intrapreneurs and found only a few examples of practice in researcher development support that actively acknowledged this particular combination of skills. Therefore the project team concludes that:

- Intrapreneurial capabilities are a critical part of the governments drive for high level skills and increasing the UK's ability to innovate. At a time when government is concerned with: global competitiveness challenges; embedding innovation; and sustaining our research base; developing the skills-set and contributions of intrapreneurs is important.
- A greater awareness and understanding of the concept of 'intrapreneurship' would be beneficial to all stakeholders, and should be built into researcher development provision within the research environment. Universities should consider allocating a proportion of funding for enterprise activities to specifically support the development of intrapreneurial capabilities.
- The Research Councils and other funders should consider the options they have to influence the development of intrapreneurial skill and behaviours through funding and reporting mechanisms and strategic investment in this area. The additional Engineering and Physical Sciences Research Council (EPSRC) funding for enterprise activities provided in 2007 and 2008 has been welcomed by institutions. The project team recommends that funding of this nature should continue as a way of providing added impetus to developing intrapreneurial and enterprising researchers in the UK.

- The importance of existing skills frameworks, such as the Joint Skills Statement (JSS) (Appendix 2), in creating a sector-wide awareness and understanding of generic skills are well recognised. The project team recommends that the revisions of such frameworks proposed by the Rugby Team⁶ include skills, attributes and competencies associated with intrapreneurship.

Embedding a strategic vision to support intrapreneurship

The project team's research highlighted that intrapreneurship has relevance at national, local and institutional levels and therefore the project team concludes that:

- Incorporating an institutional strategic vision to embed intrapreneurial activities would help to raise the profile, awareness and understanding of this set of capabilities, acknowledging and enhancing both the effectiveness of researchers themselves in their current roles and supporting the development of 'the next generation of world-class researchers'⁷.
- Higher education institutions should take a coordinated approach, working across departments and providing some central coordination.
- Approaches to embedding intrapreneurial activity should promote inclusivity and have wide appeal across discipline areas.
- Researchers should be given greater opportunities to reflect on their own contributions and ability to influence change, to have their ideas heard and taken forward, and to make recommendations about how best they can be supported in doing so.

⁶ www.vitae.ac.uk/rugbyteam

⁷ Research Councils UK, *Together in Research*, Delivery Plan 2005-6 - 2007-8

Practice/culture in HEIs to support intrapreneurship capabilities

The project highlighted a range of often well-developed activities for researchers to enhance their enterprise skills and to support entrepreneurship, but little practice that overtly acknowledged and developed intrapreneurship, either as an extension of the Joint Skills Statement (Appendix 2) or other skills frameworks. Therefore the project team concludes that:

- Institutions should make these behaviours and skills explicit to the researchers undertaking professional development.
- Further work should be undertaken to explore cultural factors in the research environment that allow intrapreneurs to flourish. Culture and practice within institutions could provide more opportunities for researchers to suggest improvements that could be made to the workplace, and universities could provide more processes and mechanisms to support the implementation of these ideas.
- Institutions should build researcher-led initiatives in order to put greater emphasis on the skills base needed to 'make things happen'.
- Institutions should continue to share practice as it develops, building understanding and sharing learning via the database of practice⁸ and through a further project in which participating universities will develop and share emerging practice to support intrapreneurship in researcher development.

Next steps

If you would like to get involved in further projects to support the development of intrapreneurship in researcher development, or would like to make us aware of your own or your institutional activity, or have any ideas, comments or feedback about any aspect of this report, please contact the project team via enquiries@vitae.ac.uk

Terms of reference

The project '*exploring intrapreneurship in researcher development*' worked to the following terms of reference:

1. to illustrate how intrapreneurship relates to policy, academic, business/industry needs (including the not-for-profit sector, public sector and community needs)
2. to profile intrapreneurship as an approach that can contribute to people and organisational development in an institutional research environment
3. to identify key aspects/elements that support an intrapreneurial culture/approach – exploring critical success factors, barriers and examples/illustrations of practice/activities that embed intrapreneurship
4. to explore the application of the concept of intrapreneurship for researchers, and the inter-relationship with the Roberts skills agenda
5. to formulate next steps and recommendations – to different groups, e.g. national stakeholders, institutions, the project team – and including the impact on the Roberts skills agenda.

1

Introduction

In January 2007 the Engineering and Physical Sciences Research Council (EPSRC) made additional payments totalling £1.4m to 29 research organisations to support the development of enterprise skills for researchers. In April 2007, a workshop convened by CRAC: The Career Development Organisation, in conjunction with the UK GRAD Programme⁹ and EPSRC, and supported by the Research Councils UK (RCUK) brought together representatives from those institutions in receipt of additional funding. A report of the workshop's outcomes can be found at www.vitae.ac.uk/policy-practice. The purpose of the workshop was to explore existing and future enterprise skills development provision, including potential collaborative projects, to maximise the impact of the additional £1.4m for the sector. It was clear that intrapreneurship was a relatively unexplored area with potential for the development of transferable skills. Therefore one of the three collaborative projects identified by participants as important in taking forward sector understanding of enterprise at work was to explore intrapreneurship within a research environment.

Nine higher education institutions¹⁰ funded a collaborative project to explore the concept of intrapreneurship, its fit within a changing political landscape, the potential links with institutional drivers, and what current and future practice might look like in terms of activities and culture that would support intrapreneurial behaviours. The project team first met in November 2007, and collaborated throughout the following year leading to the publication of this final project report in September 2008.

The project team took as its starting point the idea that 'intrapreneurship' has similarities to the more widely known concept of 'entrepreneurship'. The key difference is that 'intrapreneurship' takes place within, and thereby benefits, an existing organisation, whereas 'entrepreneurship' involves creating new entities beyond current structures.

2

Background and context

2.1 National policy context and drivers

The Government White Paper *Innovation Nation* (DIUS, 2008)¹¹ stated the challenge that the 'UK must unlock the talent of all its people' and identifies 'innovation' as one of the five drivers of productivity essential to future UK economic prosperity. Innovation in today's context stems from a wide variety of sources, driven as much by demand from business as by supply by universities. Our national capacity to unlock and harness the talent, energy and imagination of all individuals is crucial to strengthening sustainable innovation processes. There are expectations of universities to produce skilled researchers appropriate to both business and academic needs, and for companies to create work environments to retain talented employees who can drive organisational innovation. As organisations, both businesses and universities encounter more competitive and challenging global environments, effective development of researchers can serve to drive economic growth and build research capacity in universities.

Doctoral graduates' knowledge, skills and capabilities have been linked to economic growth in a number of important government policy reviews and reports preceding the publication of *Innovation Nation* (2008)¹². The significance of universities in the creation of high value goods, services and industries and in globalisation was recognised by the Sainsbury Review of Science and Innovation, *The Race to the Top* (2007)¹³. This follows from an identification of an additional 'third stream' of knowledge transfer from universities to businesses and the community in the Lambert Review (2002–03)¹⁴. The Leitch Review of Skills *Prosperity for all in the global economy – world class skills* (2006)¹⁵ concluded that while the UK had a strong economy and world-leading employment levels, UK human capital and skills were not world class. Postgraduate qualifications were described as the 'most powerful lever for improving productivity' and 'key drivers of innovation, entrepreneurship, management, leadership, and research and

⁹ From June 2008 Vitae: www.vitae.ac.uk. Vitae incorporates the UK GRAD Programme and UKHERD.

¹⁰ The universities of Cardiff, Durham, Edinburgh, Manchester, Nottingham, Strathclyde, Warwick, with Queen Mary (University of London) and UCL.

¹¹ Department for Innovation, Universities & Skills, *Innovation Nation*, (2008 White Paper). <http://www.dius.gov.uk/docs/home/ScienceInnovation.pdf>

¹² Department for Innovation, Universities & Skills, *Innovation Nation*, (2008 White Paper). <http://www.dius.gov.uk/docs/home/ScienceInnovation.pdf>

¹³ http://www.hm-treasury.gov.uk/independent_reviews/sainsbury_review/sainsbury_index.cfm

¹⁴ www.hm-treasury.gov.uk/consultations_and_Legislation/lambert

¹⁵ http://www.hm-treasury.gov.uk/independent_reviews/leitch_review/review_leitch_index.cfm

development' with such high-level skills in demand from 'high-performance global employers'. In the *Science and Innovation Investment Framework (2004–2014)*¹⁶ universities are invited to consider their contribution to key economic activities including 'training highly productive people who are in great demand from employers'.

The creation of the Department for Innovation, Universities and Skills (DIUS) in 2007 brought together policy on skills, higher education and science and innovation, to achieve an integrated approach to these key drivers of economic growth. Research Councils have also been seeking to demonstrate their impact and economic benefits for industry (Warry Report, *Increasing the Economic Impact of Research Councils*, 2006¹⁷) as well as the wider benefits to society of researchers and their careers. Research Council investment includes the framework for doctoral students' transferable skills training, to better prepare researchers for careers in both industry and academia (Roberts Review *SET for Success*, 2002,¹⁸ and 'Joint Skills Statement', 2001 Appendix 2). In response to the Warry Report, RCUK stated that postgraduate researchers' impact on the economy could be strengthened with, for example, 'skills for employability, such as entrepreneurship and knowledge transfer'¹⁹. With a drive for both innovation and high level skills, 'intrapreneurship' and its associated capabilities are becoming ever more critical as they contribute to organisational growth, competitiveness and impact.

There has been a range of developments to embed skills and career development as part of research training in UK higher education institutions. Influenced by the recommendations in the Roberts Review in 2002, universities have used the Research Councils funding to embed training for skills outlined in the Joint Skills Statement (Appendix 2) to support career development for research staff. The Quality Assurance Agency's (QAA) revised Code of Practice²⁰ added a further

driver for universities to embed skills development as part of research degree programmes. Alongside this, for research staff, the European Charter and Code of Conduct for the Recruitment of Researchers²¹ (the 'Charter and Code') were launched by the European Commission in 2005 and the UK's revised Concordat to Support the Career Development of Researchers²² was launched in June 2008. These initiatives, along with many others, place the development of transferable skills at the centre of research training.

The majority of early career researchers have no immediate aspirations to start their own company, although a minority will do so early in their careers and some perhaps later. The majority will join larger corporate organisations, small or medium sized organisations (SMEs), public or voluntary sector organisations or remain in academia. Therefore entrepreneurship, in the sense of new company creation, may not be seen as immediately relevant by researchers. However, in a broader context, there are also individuals who 'instigate renewal or innovation within an existing organisation'.²³ Working *within* an organisation, an intrapreneur requires a slightly different skills set which enables them to lead change within an organisational structure.

It is several years since the Roberts Review and the Joint Skills Statement (Appendix 2) were published. Given that we have a maturing set of support in universities around generic skills for researchers, focus in both policy and institutional practice is shifting to one of preparing researchers for a swiftly changing global environment, where high-level skills and the ability to create and drive through ideas, and to lead change have more emphasis. Against this backdrop, this timely project explores some of the strategic and practical issues around developing intrapreneurial capabilities in researchers.

¹⁶ http://www.hm-treasury.gov.uk/spending_review/spend_sr04/associated_documents/spending_sr04_science.cfm

¹⁷ <http://www.berr.gov.uk/files/file32802.pdf>

¹⁸ http://www.hm-treasury.gov.uk/documents/enterprise_and_productivity/research_and_enterprise/ent_res_index.cfm

¹⁹ *Report of proceedings of the UK GRAD Programme Roberts Policy Forum 2007*, (Dr Iain Cameron, Head of RCUK Researcher Careers and Diversity Unit) quoted in *What do PhDs do? – Trends* (UK GRAD, 2007, p.6).

²⁰ *Code of practice for the assurance of academic quality and standards in higher education*, Section 1: postgraduate research programmes, QAA, September 2004. <http://www.qaa.ac.uk/academicinfrastructure/CodeofPractice/default.asp>

²¹ <http://www.vitae.ac.uk/policy-practice/2667/European-Charter-and-Code.html>

²² <http://www.researchconcordat.ac.uk/>

²³ Sharma, P. and Chrisman, J.J. (1999) 'Towards a reconciliation of the definitional issues in the field of corporate entrepreneurship' *Entrepreneurship Theory and Practice*, 23 (3): 11–27.

2.2 Characteristics of intrapreneurship

Intrapreneurship is about taking direct responsibility for innovation and creativity in order to transform a dream or idea into a 'profitable' venture within the organisational environment.²⁴ It often occurs against a backdrop of 'enterprise', which is a broader set of skills and attitudes that can enable a culture of innovation, creativity, risk taking and opportunism, and which enables entrepreneurship, intrapreneurship and knowledge transfer.

Intrapreneurship requires a similar set of skills, traits and capabilities to entrepreneurship, but takes place within the context of an organisation. Intrapreneur is a term coined by Macrae (1982)²⁵ and developed by Pinchot (1985).²⁶ According to Pinchot, 'intrapreneurs are "dreamers who do," those who take hands-on responsibility for creating innovation of any kind within an organisation'. Intrapreneurs are not just people who have a dream or idea, they are individuals who are then able to transform an idea into something which adds value for the organisation; this could be a 'product' or a change to a process.

Enterprise and entrepreneurship are terms more commonly recognised in research environments within higher education institutions. However, as the global research environment becomes more competitive, acknowledging and understanding the skills, traits and capabilities of researchers who drive and create internal change within universities is becoming more important. The university research environment has an abundance of role models, but the capabilities and skills of intrapreneurs are rarely understood, articulated or recognised overtly. Organisations in the private, public and not-for-profit sectors need intrapreneurs in order to thrive, grow and compete; they cannot always rely on past success. It is rare that we know the names of intrapreneurs such as the employee at Swan Vesta matches who suggested that the company only put the striking paper on one side, saving the organisation hundreds of thousands of pounds, or Art Fry from 3M who found a handy use for semi-sticky glue when marking pages in his hymn book, which led to the development of the

Post-it®. Intrapreneurs, where they are able flourish, can be the powerhouses in organisations.

Within the project team, we agreed not to attempt to re-invent any of the existing frameworks or definitions for enterprise skills. However, we did highlight the following capabilities that related specifically to intrapreneurship. We have used broad headings to identify the capabilities of intrapreneurs, adapted from the literature mentioned in this report. It should be borne in mind that these skills only manifest themselves within a particular context and it is a dynamic combination of capabilities matched to that context that ultimately defines intrapreneurship. In an intrapreneurial process, these skills may be evident amongst a group of individuals focussing on particular outcomes. Successful intrapreneurship requires a blend of capabilities, used in an organisational setting. Universities might consider creating opportunities for the recognition and development of individual intrapreneurial capabilities based on these skills, traits and characteristics.

Personal motivation

- Initiative
- Highly motivated
- Gaining personal reward from seeing an idea through.

Creating ideas and opportunities

- Creativity
- Seeing (recognising) opportunities that others have not seen
- Open minded.

Working with people

- Co-operating with others
- Managing people and expectations at all levels
- Excellent networking.

Influencing change

- Problem solving
- Removing barriers to idea realisation
- Self-confidence to initiate or lead change processes
- Persuasion and negotiation
- Taking and managing risks
- Tolerance of ambiguity
- Resilience.

²⁴ This definition was agreed at the 2007 workshop 'Enterprise skills for researchers' described in section 1. The workshop report is available at <http://www.vitae.ac.uk/policy-practice>

²⁵ Macrae, N. (1982) Intrapreneurial Now, *The Economist*, April 17

²⁶ Pinchot, G. (1985) Intrapreneuring: why you don't have to leave the corporation to become an entrepreneur, *Harper & Row*, New York

Relating to context

- Understanding of individual strengths in innovation processes
- Understanding of corporate politics and organisational culture
- Social awareness to make innovations meaningful
- Commercially aware.

Intrapreneurial skills can be acquired through practical experience, ranging from workshops and specific skills training to more holistic 'opportunity learning' by means of projects to enrich the university community, or create new developments in technology, culture or organisation. An organisation that strategically supports an intrapreneurial culture can reap the benefit, providing support at senior level to gain maximum benefit. Intrapreneurial projects often benefit from champions and mentoring support from within their organisation. Above all, intrapreneuers need opportunities, rewards, recognition and encouragement in order to thrive.

Cultural and structural change are processes that take place over time. A start can be made by recognising the sorts of skills that can be developed and then looking for existing or new opportunities in which they can be applied and how they can be best supported. While this project highlighted many opportunities for intrapreneurial activities with researchers, we found little evidence of reflective processes that understood and acknowledged the skills set that intrapreneurship requires. We found few examples where intrapreneurship was overtly articulated and developed, in the context of increasing personal, professional and career support for researchers.

Organisational drivers: a changing landscape for HEIs

As noted in the 'background and context' section, policy development linking researcher training with academic and business needs has been rapid during the last few years. For many universities, the Roberts funding and the revised section 1 of the QAA Code of Practice have accelerated the development of provision to support the personal and career development of researchers. Many higher education institutions provide a variety of opportunities for researchers to develop their enterprise and entrepreneurial skills. There are very few that explicitly develop researchers' intrapreneurial skills.

3.1 Supporting institutional strategic objectives

With increasing pressure on HEIs to 'perform' against internal and external goals and quality measures, many have developed strategies around enterprise and third stream activities in the academic and research areas.

There have been a number of initiatives to develop enterprise skills and strategies in universities over the past 20 years. However, in recent years the funding for these initiatives has grown considerably – in 2007 Gordon Brown announced a package of a further £180m over three years to continue funding for enterprise education in the UK. The summary of Roberts reporting in 2007²⁷ indicates that the additional EPSRC funding for enterprise both aligned with, and in some cases caused, structural or fundamental changes within HEIs aimed at increasing the profile and/or impact of enterprise activities within the organisational context. There is a key interplay between strategy and practice. In many cases emerging practice has influenced the strategic approach of the institution, or through practical action increasing numbers of staff have been able to engage.

Intrapreneurship seeks to develop individuals who, regardless of whether they remain within the university, feel empowered and confident enough to instigate change when it is necessary.

Case study

'Take the Initiative' scheme at Queen Mary College, University of London

Spring 2008 saw the launch of the 'Take the Initiative' intrapreneurship scheme at Queen Mary College, University of London. In this scheme, postgraduate researchers were invited to apply for 'Roberts Awards' ranging from £500 to £1000, to fund student-led initiatives aimed at enriching their experience of their research programme.

One of the awards was used to support the establishment of the BIOgroup based in the School of Biological and Chemical Sciences, which aims to foster informal links between postgraduate researchers and staff.

Helene Muller, a first year doctoral researcher who was a founder of the BIOgroup commented on her experience:

"To receive a Roberts Award made me feel that some people recognised my work and the idea that I'd had, and were ready to support further activities. I really enjoy socialising and I would like to spend more time meeting people. I could see that this would make a difference for other people that I worked with too. Enjoying one's time at work is very important to me. The award enabled me to do that and gave me the opportunity to try to convey this to other people.

Keeping this society running is a big challenge to me and I am getting so much experience out of it. I had to learn how to manage people, how to motivate and incentivise them and how to make events run smoothly, as well as how to cope with human error. This is a very positive experience: I only wish I had more time to invest in it!

I am intending to use these skills in future. If I get a position as head of a lab I will need to manage people, know what makes them work effectively, and create a good working atmosphere."

**Helene Muller, Doctoral Researcher,
School of Biological and Chemical Sciences,
Queen Mary College, University of London**

As part of the project, each partner university reviewed activities at their own HEI. We saw a range of approaches at a strategic level. Some universities make an overt commitment to 'enterprise' and related activities in their mission statements. For example, the University of Manchester's vision is 'to be an innovative institution that values and encourages the transfer of knowledge and technology to influence and advance economic development regionally, nationally and internationally'. Other approaches embed structures that support enterprise, for example Durham University's newly created Centre for Enterprise, and UCL's recently appointed Vice-Provost for Enterprise, the creation of a new academic department of Management Science and Innovation, and also a unit, UCL Advances²⁸, which seeks to build links for knowledge transfer between UCL and commercial business. The University of Nottingham is bringing its support for enterprise and entrepreneurship under a single 'Ingenuity' brand. This will provide much more visibility for the support that already exists and enable easier access to it. Other members of the team highlighted that more localised practice to develop intrapreneurship was aligned with and having an impact on university strategy, for example the University of Strathclyde's Launchpad event.²⁹

Often intrapreneurial activity was reported at a local level (department or school) and only occasionally did it require consideration at strategic level. The ability to input at a strategic level may depend on the individual's credibility, power and position and the nature of the proposed change. Much of the value of intrapreneurship is that actions that it spawns can be implemented quickly at the local level. Nurturing and supporting individuals who act in this way is likely to have an impact on how quickly the university can respond to change, raise income and meet its broader strategic objectives. What was clear from the examples provided through the project team was that intrapreneurship as a specific strand of enterprise activities was only recently being recognised at strategic level, if at all.

²⁸ <http://www.ucl.ac.uk/advances>

²⁹ <http://www.strath.ac.uk/researchday/postgraduatestudents/launchpad-organisingcommittee/>

3.2 Supporting research and innovation

Intrapreneurs often use research and innovative thinking to bring their ideas to fruition. The researcher working at Procter & Gamble who brought the technology behind cling film and combined it with bleaching agents, firstly had the idea to marry the two and then researched the possibilities. His idea became CREST White Strips: launched in 1999 this dental product has now made the company over \$400 million³⁰.

Intrapreneurship can be used as a key to enabling a department/research group to deliver on its research vision. Intrapreneurial behaviours in action can also attract research funding to create and implement new ideas. It is important when developing a culture of being enterprising in the workplace that people are supported to have ideas relating to all aspects of the organisation's working environments, not solely in research and development contexts.

Innovation is a 'process that provides added value and a degree of novelty to the organisation, its suppliers and customers through the development of new procedures, solutions, products and services as well as new methods of commercialisation'.³¹ According to the Sector Skills Development Agency Report *Skills for Business* (2007)³², 'human capital contributes to productivity performance through positive contributions to research and development, and innovation', and 'enhances the absorptive capacity of companies through their ability to embrace knowledge generated elsewhere'. Human capital development includes recognising and fostering intrapreneurial skills.

The project team highlighted some examples of activities which aimed to enhance research outputs while development intrapreneurial skills. One example was the University of Strathclyde's 'Launchpad: sustainable intrapreneurial opportunity learning for early stage researchers' project.³³ Launchpad provides 'real life' opportunities for intrapreneurial learning, enabling participants to

reflect on and develop a range of transferable skills in practice in a safe and supportive environment.

Another example was the University of Leeds' 'Cross-Discipline Competition'³⁴ which encourages research staff and students to work together to develop ideas relating to internal or external enterprises. During the workshop and mentoring programme participants explore both intrapreneurial and entrepreneurial skills and behaviours and their contexts.

Case study

'Launchpad' at the University of Strathclyde

Launchpad is an innovative programme to provide 'real life' opportunities for intrapreneurial learning, enabling participants to engage in projects to develop and reflect on their transferable skills in a safe and supportive environment.

*The aims of **Launchpad: sustainable intrapreneurial opportunities for early researchers** are to:*

- *enable early career researchers to participate together with other staff and students in intrapreneurial projects for organisational benefit*
- *establish a sustainable institutional framework for developing 'intrapreneurial' opportunities.*

In the first phase of Launchpad, three interlinked intrapreneurial development areas were planned:

- **Research Day:** *bringing together an annual event to celebrate research around the University*
- **Company Relations:** *communicating about research with the business and wider communities*
- **Community Challenges:** *addressing environmental and other ethical issues with cross-discipline group activity.*

These areas map to strategic themes of the University and so provide additional organisational benefit:

- **Research:** *students and staff communicate about research*
- **Education:** *participants gain direct experience of intrapreneurial activity*
- **Knowledge Exchange:** *communication with others outside the organisation, especially in the business community.*

continued ...

³⁰ Aspinall, S. and Kneale, P. (2004) Enterprising intrapreneurship: putting academic learning into real world contexts, *What a brilliant idea*. Available at: <http://www.geog.leeds.ac.uk/courses/other/casestudies/intra/WhatABrilliantIdeaProctorAndGamble.doc>

³¹ McFadzean, E., Shaw, E. and O'Loughlin, A. (2005) 'Corporate entrepreneurship and innovation. Part 1: the missing link', *European Journal of Innovation Management*, 8(4): 393-408.

³² Mason, G., O'Leary, B., Vecchi, M., (2007) Cross-country analysis of productivity and skills at sector level. *Research report 23*. Skills for Business.

³³ <http://www.strath.ac.uk/researchday/postgraduatestudents/launchpad-organisingcommittee/>

³⁴ www.vitae.ac.uk/dop. Practice number 652

Case study

'Launchpad' at the University of Strathclyde

continued ...

The first success for Launchpad was the delivery, led by early career researchers, of a Strathclyde University Research Day, attended by over 500 visitors and displaying around 200 posters, presentations and installations. Launchpad applied the principles of intrapreneurship as a framework for decision making. For example, a mission was set to obtain a submission for the Research Day from all departments and to be inclusive, with formats of presentation suitable for different disciplines. All contributors were to be rewarded in some way and this led Launchpad into the second development area with a new intrapreneurial project to transfer research presentations onto the web to communicate about research through public engagement.

Launchpad is designed to be flexible so that participants can move in and out of projects depending on their skills and study demands on their time. Project owners are early career researchers known as 'trailblazers' who were responsible for driving ideas forward, coordinating activities, liaising with others, bringing in resources, and innovative delivery. Professional and academic staff were facilitators who shared their professional experience, advised on how the University works and provided a network for advice and support.

Success was measured by participants themselves as, for example, increased confidence, new ways of dealing with pressure, and changed thinking from 'me and my research' to 'our university and our work'. Launchpad has created a sustainable model for the continued development of intrapreneurial activity with ambitious plans for web casts of research and media training leading to real public engagement. The impact has been to bring together a research community communicating about their research with each other and with the outside world with plans to use the outcomes of University Research Day for public and company engagement activities, supported by purposeful media training.

Alison Mitchell, University of Strathclyde

3.3 Exploring cultures that support intrapreneurship capabilities

Culture can very simply be interpreted as 'the way things are done around here'. There are some key points to consider when exploring cultures that support intrapreneurs. Some organisations work hard to creating a culture to allow new ideas to flourish while in others intrapreneurship is rarely found. The research environment is typically competitive, with short-term funding cycles and global competition for results. Within this context, the need to move quickly, to innovate, to action new ideas, to change processes and products becomes critical for success. The project considered what kinds of characteristics would support the development of intrapreneurship.

Case study

Case study: corporate example of activities to support a culture of intrapreneurship

BT has a New Ideas scheme³⁵ open to any member of staff. Every idea submitted, successful or not, receives a reward. If the idea is implemented then the 'suggester' receives 10% of the revenue or savings their idea has created. The maximum reward for an idea is £30k. The scheme started in 2005 and the telecommunications company has made £100 million as a result of the scheme. Most of the ideas come from field engineers and call centre staff. The company supports this culture to the extent that it has created a team to help people develop ideas and is also introducing advanced software so that even employees at the top of telegraph poles can capture their 'eureka moment' on their base computers.

Samantha Aspinall (2008)
Based on an interview with Lewis Clayton,
New Ideas Scheme, BT

³⁵ <http://www.btplc.com/Innovation/Strategy/hold/index.htm>

The following organisational characteristics that allow intrapreneurs to flourish have been observed over a period of years of researching intrapreneurs in public, private and not-for-profit sectors.

- A potential intrapreneur needs a supportive environment and, ideally, an identified champion. For researchers, the champion could be a supervisor, principal investigator (PI), mentor or other member of staff. The champion needs to support intrapreneurial endeavour, which could mean being encouraging, allowing the individual to take risks, acting as a critical friend or being a resource provider.
- The organisation needs to encourage risk taking at all levels. This should be built into the management culture.
- Often new ideas need resources to implement them. Time and funding need to be made available, but lack of resources should not prevent an intrapreneurial culture.

Appendix 1 offers a set of questions that the project team used to explore the culture at their own institutions and to find out to what extent that culture supported intrapreneurs. The questions are focussed around strategy, communications, 'the way it works around here' and resources. In most cases the project team found some elements of intrapreneurial ways of working in some departments/teams, but not a consistent experience across an institution.

Case study

Intrapreneurship in action in the not-for-profit sector

A good example of intrapreneurship in action within the voluntary sector is that of a young woman who worked at a large international children's charity. Part of her remit was to update the organisation's website. On hearing of the events of September 11 she urgently requested permission to update the online donating function to create a micro-site for an appeal for Afghanistan. Her manager had doubts that anything could be done so quickly, but he trusted her to take that risk and gave her the £900 she requested to make the changes. Within the first few days the charity received more donations (£38,000) than had ever been achieved in that timescale. Two elements allowed the charity worker to achieve this. The first was her manager's approach to risk taking and the second the fact that she was good at networking at all levels in the organisation – and so was able to persuade senior members of staff to support her ideas³⁶.

Samanth Aspinall and Pauline Kneale (2004)
Based on an interview with Hope Cooper,
Save the Children Fund

Reward systems are particularly complex in the public sector. We can see from the BT example that financial rewards are very effective in the private sector. However, this type of incentive is often difficult to offer and not always attractive or appropriate in public sector organisations such as universities. Institutions may find it useful to investigate possibilities for reward systems and even explore an innovative approach to this area. In the academic community many consider career advancement, use of lab/workshop resources or other non-financial recognition to be as powerful as more direct financial incentives. The project team acknowledged that reward is extremely personal. For some people, praise from their boss would be enough for them to feel acknowledged, while for others financial gain, re-grading their job role or other more overt recognition is needed.

3.4 Developing a skills framework for intrapreneurship

The Joint Skills Statement (Appendix 2) is well established as the underpinning framework for developing skills for doctoral researchers. An overarching competency framework for the skills of researchers (both students and staff) is being developed.³⁷ A new government report *Enterprise: Unlocking the UK's Talent* (March 2008) states: 'Government's challenge over the next ten years is to build on investment that has already been made to further foster and support the development of enterprise skills and knowledge in the wider education system'. The skills agenda for postgraduate researchers is changing in response to the external environment, and there is need to build capacity for developing enterprise skills within the research community for national and international growth.³⁸

Universities have taken a range of approaches to transferable skills development, including, interpreting the Joint Skills Statement in different ways and using additional behaviour indicators as a way of identifying researcher development needs.³⁹ One of the benefits of having a common framework (for example the JSS) embedded in the Research Council's implementation of the Roberts Review and the QAA revised Code of Practice is that there has developed a common language around the skills of doctoral researchers. For research staff, these are formed around developing academic practice, Joint Negotiating Committee for Higher Education Staff (JNCHES) role models,⁴⁰ leadership modules or other staff competency frameworks.

Research into the development of entrepreneurs⁴¹ points to the effectiveness of 'action' or 'experiential' learning involving knowing, doing and understanding. Emergent intrapreneurs also will learn most effectively through continually doing, experimenting and redefining themselves to gain an understanding of how they work, and thus shape and reshape their intrapreneurial identity. Intrapreneurial experiential learning involves the creation of opportunities that enable:

- engagement with a real life problem or challenge in an organisational context
- learning as a social as well as individual process
- moving on with 'lessons learned' and new learning.

To meet the needs of a nation driven by innovation, an 'intrapreneurial' viewpoint on existing provision and structures in order to develop a strategy for institutional intrapreneurial training and development. Intrapreneurial experiential learning cannot stand on its own and has to be supported by more formal learning. It can perform an integrating or overarching function, mapping onto existing skills development provision and research activity itself. Adopting this approach may require some restructuring, creating new activities to augment provision or introducing new integrated opportunities for experiential learning.

4

Exploring intrapreneurship in researcher development: practical approaches

4.1 The current landscape and potential for development

The recommendations from the Roberts Review and the JSS are now embedded in universities. There has followed a significant shift from focusing only on generic skills⁴² to looking at skills development in the context of overlaying themes such as enterprise, internationalisation and intrapreneurship. As previously outlined there is currently a range of enterprise and skills development, but very few are specifically intrapreneurial.

Within the project, we aimed to explore the extent to which existing provision at the participating HEIs draws out intrapreneurial awareness and learning. There was little or no 'formal' recognition of intrapreneurship, and in many cases people considered their contributions were them 'just doing their job'.

³⁷ www.vitae.ac.uk/rugbyteam

³⁸ www.hm-treasury.gov.uk/media/E/3/bud08_enterprise_524.pdf

³⁹ See *Rugby Team Impact Framework* www.vitae.ac.uk/rugbyteam

⁴⁰ <http://www.ucea.ac.uk/en/JNCHES/>

⁴¹ Rae, D.,(2003) Opportunity centred learning: an innovation in enterprise approach. *Education and training*, 45 (8) 542-549

⁴² For example: team work, communication, networking, etc.

What we found were examples of activities to support enterprise more generally that included:

- courses in commercial awareness, creativity, marketing, business planning, finance, evaluating ideas, intellectual property and trademarks, networking, managing risks
- 'pitch your idea' or 'business plan' competitions
- 'meet the entrepreneurs' sessions where researchers can meet local entrepreneurs
- researcher-led interventions and activities; in many cases researchers bid for funds to provide their own development activities
- fellowships to support enterprise which provide a mentor with entrepreneurial experience, access to courses and other support
- informal activities, for example, researchers being involved in providing training for peers.

In addition to examples provided by the project team, we also reviewed entries on the Vitae Database of Practice (DoP).⁴³ While the DoP does not provide a comprehensive picture of practice in UK HEIs, it does provide a good illustration of the practice which universities are both engaging in and willing to share with others in the sector.

The review looked at 464 different practices on the DoP – that is, all the 'open access' practices submitted as at January 2008. Identifiers to ascertain intrapreneurial activities were based on the following criteria:

- evidence of universities encouraging researchers to come forward with ideas for change
- evidence of a process to encourage new ideas
- evidence of developing enterprise skills within their organisations
- evidence of developing enterprise within other organisations
- evidence of researchers explicitly developing intrapreneurial skills.

Evidence was sought from the section of the DoP where universities provide an outline of their practice. The outlines in the DoP differ in level of detail, so the resulting information is more illuminating in some areas than others.

Of the 464 practices reviewed, 48 were judged to have some intrapreneurial activities or the potential to develop intrapreneurial activities. Only one specifically mentioned the word 'intrapreneur'. Overall, a range of enterprise or researcher-led activities were detailed. Many provided opportunities for intrapreneurial activities to be acknowledged or developed.

Examples include:

- **placements**, which can provide opportunities for researchers to develop enterprise skills within organisations. Industrial placements are often designed to have a 'one-way' benefit: the researcher goes on placement to develop their research skills. However, universities could look at ways that organisations could benefit from the researcher who could explore a problem that they are facing. This could be particularly relevant for SMEs looking for a level of expert help. At undergraduate (and masters) level, project placements of this nature are much in evidence: a well-established model is the Shell STEP⁴⁴ programme
- **departmental mentoring**. Mentors could encourage mentees to come forward with ideas to improve processes or develop products and give them explicit feedback on their ideas
- **surveys and evaluation processes**. These could be used as tools to encourage ideas to change and improve processes, develop the working environment⁴⁵ or create something new for a department
- **enterprise initiatives/training courses/competitions and workshops** run by many universities. Institutions' descriptions on the DoP do not include information about whether these are aimed at developing entrepreneurs and enterprise, although we may assume that since the main thrust of higher education and government funding is driven towards spin-out activities, many are likely to be directed in this way. However, a number of these activities could be developed to include intrapreneurial behaviours.

⁴³ <http://www.vitae.ac.uk/practice>

⁴⁴ <http://www.step.org.uk/>

⁴⁵ <http://www.vitae.ac.uk/policy-practice>

Case study

5

Intrapreneurship in academic programme leaders at the University of Strathclyde

During this case study, academic programme leaders were provided with an opportunity to take an intrapreneurial viewpoint on how they 'conduct their business' which was something that they had not considered before. The outcomes showed that academics could provide excellent intrapreneurship role models, so long as they were asked the 'right' questions using an intrapreneurial framework. Intrapreneurship is context dependent and an organisation can provide structures to enable intrapreneurship to meet its strategic goals.

EPSRC provided Collaborative Training Account (CTA) funds for universities to invest strategically at institutional level in collaborative postgraduate training with industry. At the University of Strathclyde, academics acquire funding and deliver programmes through internal processes, leading to investment in the training of students in advanced skills and knowledge. Having established new institutional management processes for academics to bid for CTA funds, this case study looked into successful programme leaders' perceptions of themselves as intrapreneurs typical in public sector organisations.

Using interviews and a checklist of intrapreneurial traits, attitudes and behaviours, participants rated themselves highly in: self motivation; optimism; intuitiveness; trust; ability to disguise risk to minimise political cost; strong interpersonal and persuasive skills; involving others with complementary skills; and communicating with wide ranging stakeholders. Responses showed strong intrapreneurship, especially in terms of high commitment, determination, leadership and motivation whilst, typical of intrapreneurs in general, low tolerance of risk, ambiguity and uncertainty. Intrapreneurial organisational elements identified included: a culture supportive of change: networking and building relationships; and local strategic development. In terms of intrapreneurial reward, successful academics achieved funding for their programmes whilst supporting the university's strategic goals.

Alison Mitchell (2008) 'Academic Intrapreneurship associated with the Strathclyde Collaborative Training Account', University of Strathclyde, unpublished.

Engaging others in intrapreneurship

5.1 Within the institution

The project team explored whether a greater understanding of intrapreneurship capabilities may create greater momentum and engagement with wider enterprise and entrepreneurship activities within universities. For many researchers, the issue isn't *having* the capabilities, but rather having the awareness of their capabilities and the ability to communicate them to others, particularly employers.

Many innovative activities are found in academic research communities including 'grantmanship'⁴⁶, acquiring large research groups, projects or laboratories, consultancy, gaining external investment in joint research, patenting, and direct commercial involvement. Researchers make decisions that drive academic innovation and affect university productivity, such as how best to disseminate results, whether to collaborate with industry, or whether to start a company.⁴⁷ Risk taking in particular has been found to be an important dimension in creating an enterprising, or intrapreneurial, university⁴⁸. Building support around understanding and then communicating the *applicability* of these capabilities to different, and particularly non-HE, employers is key.

There have been some steps towards developing enterprise activities in departments, but researchers and staff do not always identify themselves with this agenda. For some, the commercialisation of research is not appropriate or of interest. Intrapreneurial activities may be an opportunity to include more staff who wish to have a stake in their working environment, and this may provide an access route for researchers who might suggest changes and improvements to the workplace to develop an enterprising attitude towards their research and their working practices. A shared working approach in groups or in partnership between researchers and supervisor or PI can also make it easier to recognise and reward these behaviours.

⁴⁶ Louis, K.S. Blumenthal, D., Gluck, M.E., Stoto, M.A. (1989) Entrepreneurs in academe: an exploration of life scientists. *Administrative Science Quarterly*, 34,1, 110-131. 'grantmanship' defined as the 'art' of acquiring research funding

⁴⁷ Renault, C.S. (2006), 'Academic capitalism and university incentives for faculty entrepreneurship', *Journal of Technology Transfer*, 31: 227-239

⁴⁸ Todorovic, W. T., McNaughton, R. B., Guild, P. (2005) Making university departments more entrepreneurial: the perspective from within. *International Journal of Entrepreneurship and Innovation*, 6,2,115.

Case study

Researcher-led activities at Cardiff University

Postgraduate researchers at Cardiff University were invited to apply for an award of up to £1,000 to support projects that were interdisciplinary, involving at least two academic schools, and organised by or for postgraduate researchers. In the first round, five projects were supporting including a seminar series entitled 'Sacred space, sacred text'. The organiser describes his experience:

'The opportunity to bid for, organise and execute a successful research seminar series has been one of the most meaningful and satisfying training experiences I have had as a postgraduate. I found this process had a number of different phases. The bidding phase first involved negotiations with members of other schools and disciplines which forced me and my team to articulate our idea and enthusiasm in a way that was understandable and interesting to those who worked in a different field and were accustomed to a different set of critical questions. Once we had our interdisciplinary partners, the focus turned to clarifying our specific research questions, followed by the identification and invitation of speakers who could address them in some way. At the same time the practical details of working out a projected budget became important, to know how far we would be able to pursue the series.

Once our bid was successful, attention turned to publicity and organisation to ensure a successful launch with our first speaker, as well as an ongoing effort for each subsequent event. Here an effective and dedicated management team became a real asset as different aspects of the organisation could be delegated. After our first speaker, it became clear there would be a surplus out of the difference between actual expenses claimed and the projected budget. This, along with collaboration with the Centre for Medieval Studies, allowed us to extend our programme to include a one-day conference at St Ffagan's Museum, charging a small fee to ensure our expenses were met. The success of this event, which included one of our original speakers, gave a momentum to the series as a whole and began to allow us to look at the possibility of publishing a book of collected essays on the topic. And it is here, in this third stage, that we find ourselves now: negotiating with contributors, setting out the book's key themes, and organising essays in a structure that will appeal to an academic publisher. At every stage it has been interesting to note the different agendas being imposed on the process by various academic and administrative staff, whether it is giving due credit to academic reputation, or the practicalities of finance or IT support. It was also a very useful experience in learning how to navigate university structures and processes. The support of everyone who has contributed has been vital, and yet it was often a fairly tricky negotiation to find a successful route between quite different competing objectives.'

Joseph Sterrett, School of English, Communication, and Philosophy, Cardiff University

In order to be able to create a picture of intrapreneurial activity in a university department a good starting point would be to examine areas where these skills are displayed.

Institutions could look for examples where:

- researchers have made changes in lab/research processes
- research teams hold meetings to explore ideas
- doctoral students/research staff run societies that might effect changes
- researcher notice boards/websites ask for ideas
- supervisors/PIs are actively encouraging researchers to develop new approaches
- departments allow dynamic individuals to flourish
- departments reward and recognise people who make positive contributions and effect change.

One aspect to intrapreneurial activity is that it is not always recognised as such, and intrapreneurs can be modest about their ideas and achievements. As a result it is often necessary to seek out this type of activity and behaviour, usually by asking supervisors/PIs to recommend researchers who they consider might be intrapreneurs based on behaviours they have observed. Time spent talking to people about intrapreneurs will often reap a wealth of information. A list of questions to consider is included in Appendix 1.

The fundamental question to ask people when seeking out intrapreneurs is, 'Is there anyone that you work with who has made a real difference to a process, a product or a way of working?'. It does not have to be a big change on a grand scale. Small changes can be very effective and powerful in an organisation.

“ For me, one rewarding aspect of being part of an interdisciplinary organising team was that it encouraged networking skills, not only amongst the team itself and other postgraduates but also with members of staff here at Cardiff and at other universities. It was also useful to be able to view my own research in a broader perspective. ”

Llion Roberts, School of Welsh, Cardiff University

5.2 Beyond the university research environment: views of employers

Annually around 50% of all research graduates go into employment outside the education sector that percentage is higher in the biosciences, physical and engineering sciences.⁴⁹ We know less about the destinations of research staff that move outside the HE research sector. Research into employers' perceptions of doctoral graduates suggests that employers are not necessarily aware of the full range of skills which research graduates can bring to their organisation.⁵⁰ Managers need to know about their skills and knowledge in order to make best use of them to drive innovation⁵¹.

What is clear⁵² is that there are recurrent themes in the skills that employers want to see in the researchers they will employ. They commonly include the following:

- Commercial awareness and the ability to make the transition between one working environment and another
- Flexibility and adaptability
- Interpersonal skills, teamworking skills and customer orientation
- Self management
- Initiative
- Intellectual capability
- Capacity to work autonomously
- Maturity
- Enthusiasm
- Specialist knowledge
- Problem solving.

If we map this against the identified intrapreneurial capabilities on page seven there is some commonality in terms of the skills that intrapreneurs possess and those that employers of researchers typically look for. In particular, both skills sets include taking initiative, the ability to solve problems and work to remove barriers, commercial awareness, personal enthusiasm and motivation. The following case study illustrates the role of intrapreneurial capabilities in the corporate world.

Case study

From genius to corporate intrapreneur – experiences beyond the research environment

‘Training is required to become a successful intrapreneur. First of all it is leadership skills coupled with a strong sense of market trends and business needs. Secondly, it is soft skills, learning to be approachable and helpful, e.g. learning to let an idea go to someone else for their benefit, as not all your ideas will be your success. To have the skills to keep faith, keep helping and the confidence to know the rewards will come. Soft skills are needed to keep control and stay calm and manage this process. The third skill set needed is good project management skills; an intrapreneur is likely to have lots of small projects on the go alongside one or two major initiatives. Time management, organisation and project management skills are essential. Finally, and this is not a skill or knowledge that is also needed: an intrapreneur must have energy, vision and determination, especially when pioneering something new.

It is exciting, challenging and very hard work. It is very rewarding in many ways, financially it proves to be up there with many professionals, but there are other rewards that equal the life- experience and sense-of-purpose rewards enjoyed by innovators all over the world. There is the enormous pleasure that as an intrapreneur you are making a contribution to create a better world and a difference to people's prospects and lives. In conclusion, if you think you want to and could be a successful intrapreneur, then do it and remember my motto: “The only fear that the organisation and you should fear, is the fear that comes from changing nothing.”

Professor John Counsell
Department of Mechanical Engineering,
University of Strathclyde, January 2008

⁴⁹ *What do PhDs do? – Trends* (UK GRAD, 2007)

⁵⁰ *Employers' Views of Researchers' Skills*, 2007, www.vitae.ac.uk/rugbyteam
 Soutar, C. (2005) *Employers' Perceptions of Recruiting Research Staff and Students*, University of Leeds.

⁵¹ Lester, R.K. (2005) 'Universities, innovation and the competitiveness of local economies'. *IPC Working Paper Series*. MIT-IPC-05-010.

⁵² UK GRAD, 2007 Op. Cit.

Recommendations and next steps

The project team identified three groups of recommendations around: promoting awareness and understanding of intrapreneurship; embedding a strategic vision to support intrapreneurship; and practice/culture in HEIs to support intrapreneurship capabilities.

Promoting awareness and understanding of intrapreneurship

This project investigated the capabilities identified in intrapreneurs and found only a few examples of practice in researcher development support that actively acknowledged this particular *combination* of skills. Therefore the project team concludes that:

- Intrapreneurial capabilities are a critical part of the governments' drive for high level skills and increasing the UK's ability to innovate. At a time when government is concerned with: global competitiveness challenges; embedding innovation; and sustaining our research base; developing the skills-set and contributions of intrapreneurs is important.
- A greater awareness and understanding of the concept of 'intrapreneurship' would be beneficial to all stakeholders, and should be built into researcher development provision within the research environment. Universities should consider allocating a proportion of funding for enterprise activities to specifically support the development of intrapreneurial capabilities.
- The Research Councils and other funders should consider the options they have to influence the development of intrapreneurial skill and behaviours through funding and reporting mechanisms and strategic investment in this area. The additional EPSRC funding for enterprise activities provided in 2007 and 2008 has been welcomed by institutions. The project team recommends that funding of this nature should continue as a way of providing added impetus to developing intrapreneurial and enterprising

researchers in the UK.

- The importance of existing skills frameworks, such as the Joint Skills Statement, in creating a sector-wide awareness and understanding of generic skills are well recognised. The project team recommends that the revisions of such frameworks proposed by the Rugby Team⁵³ include skills, attributes and competencies associated with intrapreneurship.

Embedding a strategic vision to support intrapreneurship

The project team's research highlighted that intrapreneurship has relevance at national, local and institutional levels and therefore the project team concludes that:

- Incorporating an institutional strategic vision to embed intrapreneurial activities would help to raise the profile, awareness and understanding of this set of capabilities, acknowledging and enhancing both the effectiveness of researchers themselves in their current roles and supporting the development of 'the next generation of world-class researchers'⁵⁴.
- Higher education institutions should take a coordinated approach, working across departments and providing some central coordination.
- Approaches to embedding intrapreneurial activity should promote inclusivity and have wide appeal across discipline areas.
- Researchers should be given greater opportunities to reflect on their own contributions and ability to influence change, to have their ideas heard and taken forward, and to make recommendations about how best they can be supported in doing so.

⁵³ www.vitae.ac.uk/rugbyteam

⁵⁴ Research Councils UK, *Together in Research*, Delivery Plan 2005-6 - 2007-8

Practice/culture in HEIs to support intrapreneurship capabilities

The project highlighted a range of often well-developed activities for researchers to enhance their enterprise skills and to support entrepreneurship, but little practice that overtly acknowledged and developed intrapreneurship, either as an extension of the Joint Skills Statement or other skills frameworks. Therefore the project team concludes that:

- Institutions should make these behaviours and skills explicit to the researchers undertaking professional development.
- Further work should be undertaken to explore cultural factors in the research environment that allow intrapreneurs to flourish. Culture and practice within institutions could provide more opportunities for researchers to suggest improvements that could be made to the workplace, and universities could provide more processes and mechanisms to support the implementation of these ideas.
- Institutions should build researcher-led initiatives in order to put greater emphasis on the skills base needed to ‘make things happen’.
- Institutions should continue to share practice as it develops, building understanding and sharing learning via the database of practice⁵⁵ and through a further project in which participating universities will develop and share emerging practice to support intrapreneurship in researcher development.

Next steps

If you would like to get involved in further projects to support the development of intrapreneurship in researcher development, or would like to make us aware of your own or your institutional activity, or have any ideas, comments or feedback about any aspect of this report, please contact the project team via enquiries@vitae.ac.uk

Appendix 1: Developing an intrapreneurial culture: questions for institutions

Having explored the types of cultures where intrapreneurs flourish, staff in institutions might want to consider:

- **Strategy** – does the HEI have elements of its strategy that specifically place enterprise at the centre of how it goes about its business? What role does the overall strategy play in supporting intrapreneurs? How do intrapreneurial behaviours map onto the strategy objectives?
- **Cultures** – how would you characterise the research culture (HEI, or departmental level – and differences)? Where do intrapreneurs thrive or not thrive: why? How would a culture need to change to support intrapreneurial activity?
- **Communication** – do communication messages/channels support intrapreneurs? If a person submits an idea for change how do they receive feedback?
- **Resources** – are there any dedicated resources to support intrapreneurship? This might mean some seed funding to take an idea forward or staff time to support researchers that want to explore this area
- **Networks** – are there any specific formal/informal networks that support intrapreneurs? Do research groups share ideas to change/improve the working environment and practices?

The above are offered as a starting point for institutions, who we hope will tailor these areas of questioning in ways appropriate for the individual HEI.

Appendix 2: Joint statement of skills training requirements of research postgraduates (2001)

Introduction

The UK Research Councils play an important role in setting standards and identifying best practice in research training. This document sets out a joint statement of the skills that doctoral research students funded by the Research Councils would be expected to develop during their research training.

These skills may be present on commencement, explicitly taught, or developed during the course of the research. It is expected that different mechanisms will be used to support learning as appropriate, including self-direction, supervisor support and mentoring, departmental support, workshops, conferences, elective training courses, formally assessed courses and informal opportunities.

The Research Councils would also want to re-emphasise their belief that training in research skills and techniques is the key element in the development of a research student, and that PhD students are expected to make a substantial, original contribution to knowledge in their area, normally leading to published work. The development of wider employment-related skills should not detract from that core objective.

The purpose of this statement is to give a common view of the skills and experience of a typical research student thereby providing universities with a clear and consistent message aimed at helping them to ensure that all research training was of the highest standard, across all disciplines. It is not the intention of this document to provide assessment criteria for research training.

It is expected that each Council will have additional requirements specific to their field of interest and will continue to have their own measures for the evaluation of research training within institutions.

(A) Research Skills and Techniques – to be able to demonstrate:

1. the ability to recognise and validate problems
2. original, independent and critical thinking, and the ability to develop theoretical concepts
3. a knowledge of recent advances within one's field and in related areas
4. an understanding of relevant research methodologies and techniques and their appropriate application within one's research field
5. the ability to critically analyse and evaluate one's findings and those of others
6. an ability to summarise, document, report and reflect on progress

(B) Research Environment – to be able to:

1. show a broad understanding of the context, at the national and international level, in which research takes place
2. demonstrate awareness of issues relating to the rights of other researchers, of research subjects, and of others who may be affected by the research, e.g. confidentiality, ethical issues, attribution, copyright, malpractice, ownership of data and the requirements of the Data Protection Act
3. demonstrate appreciation of standards of good research practice in their institution and/or discipline
4. understand relevant health and safety issues and demonstrate responsible working practices
5. understand the processes for funding and evaluation of research
6. justify the principles and experimental techniques used in one's own research
7. understand the process of academic or commercial exploitation of research results

(C) Research Management – to be able to:

1. apply effective project management through the setting of research goals, intermediate milestones and prioritisation of activities
2. design and execute systems for the acquisition and collation of information through the effective use of appropriate resources and equipment
3. identify and access appropriate bibliographical resources, archives, and other sources of relevant information
4. use information technology appropriately for database management, recording and presenting information

(D) Personal Effectiveness – to be able to:

1. demonstrate a willingness and ability to learn and acquire knowledge
2. be creative, innovative and original in one's approach to research
3. demonstrate flexibility and open-mindedness
4. demonstrate self-awareness and the ability to identify own training needs
5. demonstrate self-discipline, motivation, and thoroughness
6. recognise boundaries and draw upon/use sources of support as appropriate
7. show initiative, work independently and be self-reliant

(E) Communication Skills - to be able to:

1. write clearly and in a style appropriate to purpose, e.g. progress reports, published documents, thesis
2. construct coherent arguments and articulate ideas clearly to a range of audiences, formally and informally through a variety of techniques
3. constructively defend research outcomes at seminars and viva examination
4. contribute to promoting the public understanding of one's research field
5. effectively support the learning of others when involved in teaching, mentoring or demonstrating activities

(F) Networking and Teamworking – to be able to:

1. develop and maintain co-operative networks and working relationships with supervisors, colleagues and peers, within the institution and the wider research community
2. understand one's behaviours and impact on others when working in and contributing to the success of formal and informal teams
3. listen, give and receive feedback and respond perceptively to others

(G) Career Management – to be able to:

1. appreciate the need for and show commitment to continued professional development
2. take ownership for and manage one's career progression, set realistic and achievable career goals, and identify and develop ways to improve employability
3. demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities within and outside academia
4. present one's skills, personal attributes and experiences through effective CVs, applications and interviews.

About CRAC

CRAC: The Career Development Organisation is an independent, charitable organisation dedicated to career development and active, career-related learning.



About Vitae

Vitae is supported by Research Councils UK (RCUK) and managed by CRAC: The Career Development Organisation. Vitae's vision is for the UK to be world class in supporting the personal, professional and career development of researchers.



For further information about the range of CRAC and Vitae activities please contact or visit:

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