

# Report from RCI Working Group on Training

## CONTEXT

The sub-group of the Research Careers Initiative (RCI) Committee addressing the training of research staff considered the subject with two broad objectives in mind:

- (i) To identify a set of desirable 'transferable' skills for contract research staff.
- (ii) To develop a strategy to strengthen the research management skills of grant-holders, appraisers and others involved in the career management and development of contract research staff.

## FINDINGS

### Transferable Skills

The examination of extensive evidence gained from the submissions to the Committee revealed that there is indeed an impressive repertoire of transferable skills that is built up through the experience of conducting contract research. (See Appendix 1)

Two features of this finding are particularly striking. One is the limited recognition on the part of both prospective employers and the researchers themselves first that researchers actually possess many valued skills and second that these are often highly transferable. The second characteristic is that the skills are only rarely gained in a systematic or planned way and develop primarily through on-the-job experience and considerable trial-and-error learning, supplemented by occasional attendance of courses (usually provided on an institutional basis through Staff Development units).

There are a number of initiatives underway to identify transferable skills and to promote the development and recognition of these skills. An important need identified through the RCI is the promulgation of the extensive good practice now in place in a number of HEI's particularly in Scotland.

### Research Management Skills

Many HEIs have invested some serious effort to ameliorate problems faced by CRS and to promote effective research management. The Concordat has led to positive achievements such as the promulgation of codes of practice of employment of research staff in many HEIs and research competence criteria to facilitate career progression (see Appendices 2 and 3 for examples from one institution). A further example of an important type of development is the 'self-help' course designed for post docs at Cardiff University addresses career management (see Appendix 4.) These initiatives in the HEI's have been paralleled and strengthened by the increasingly robust position adopted by the research councils. The BBSRC and the EPSRC

have both promulgated guidelines for Good Practice (see Appendices 5 and 6) which provide useful models for wider application. Increasing awareness of the significance of research management skills is evident from the growing number of relevant development projects supported by the research councils. For example, the ESRC in 1994/95 supported the development of the DORCISS Handbook for Professional Development of Research staff and recently funded the development and delivery of a pilot programme on research management for Centre Directors and Senior Managers. (See Appendices 7 and 8 respectively). The prominence given to 'know-how management' in the commercial sector has perhaps given an extra boost to developments in this domain and emphasised their strategic significance.

A gap in the research management chain appear to exist at Principal Investigator (PI) level. PIs are often under considerable pressure to achieve good research output relevant to the RAE and to ensure contractual commitments to research sponsors are met. In these circumstance the personal and professional development needs of CRS are not always high on the agenda of the PI. With adequate institutional support the PIS could be helped to embrace the concept of active research management of CRS. Training material and models of good practice have yet to be developed to promote effective management by PIs, especially with regard to people management aspects.

Other important developments in research management relate to Recording Achievement (RA) and Continuing Professional Development (CPD). There is a growing interest within HE in the use of RA and CPD approaches.

The Researchers Lead Body has done useful work in developing a set of occupational standards for researchers. Information can be found at:

<http://www.lboro.ac.uk/service/sd/rlb/RLBhome.htm>

CPD for staff is referred to by Dearing, albeit in the context of the Institute for Learning and Teaching.

"14.31 The Institute for Learning and Teaching would be concerned with all aspects of teaching and its pedagogy, and as we discussed in Chapter 9, would give priority to developing assessment practices and strategies, which would become a key part of the initial training and continuing professional development of teaching staff. It was also suggested to us that accreditation arrangements should encompass all aspects of 'academic practice', for example, management/administration, use of Communications and Information Technology (C&IT), and research. We would support this approach as a means of ensuring quality, enhancing public perceptions of higher education, and improving its self-perception." It is understood from this that while the Institute will focus first upon teaching skills, it may well widen its brief to include research in due course. There is an opportunity for the RCI to inform the definition of that wider brief.

RA for students is being actively supported by DFEE through a number of projects - most of which propose Web-based diagnostic and recording tools - and the possible use of the Progress File is raised in the QAAHE paper. The BBSRC has also identified the need to establish a framework for recording training and development (see Appendix 2).

## **Staff Development for Research**

In many HEIs, staff development for research is under-developed. Most of the recent pressure on staff development units has been in relation to teaching and learning and many staff developers are much less comfortable operating in research-related areas.

There have been some activities in this area. The Researchers Lead Body has produced a set of occupational standards for research, but this has had little impact in HE. UCoSDA has had a couple of small projects ; SHEFC has done more substantial work; and individual institutions have made some response to the Concordat. There is, though, still plenty of scope for supporting staff development for research, particularly as the emergence of the ILTHE and accreditation will again direct the attention of staff developers towards teaching and learning issues. Potential areas of activity are identified in the next section.

## **DISCUSSION**

### **Professional Development**

The working group considered professional development of research staff in the context of Government education policy. The central theme of current policy is to present learning as a continuous, incremental and lifelong process, and to secure the effective integration and articulation of the different elements of the education system. The recent DFEE consultation paper, "The Learning Age" includes the statements that, "learning encompasses basic literacy to advanced scholarship" and that "investment in the highest levels of postgraduate research strengthens our competitiveness". Throughout the consultation paper there is a strong emphasis on transferable, employment-related skills, and on "employability" at each level of educational attainment i.e. on ensuring that paper qualifications can be effectively used for social and economic benefit.

The objective of the RCI, and the universities which are responsible for postgraduate and postdoctoral training, should be to ensure that the vision of a "learning age" is carried through into the production of a highly skilled and highly trained generation of scientific leaders who are well-adapted to the demands of employment within and beyond higher education.

### **Need for a Structured Approach**

The working group considered that the ad hoc unsystematic approach to professional development of research staff undermined the confidence of staff. In particular it led them to believe that they had little to offer employers - especially those outside the HE sector. Unsurprisingly it seems that employers also fail to recognise the full range of capabilities of experienced researchers. Thus the evidence reveals that while CRs represent a grossly under-utilised UK skills base, they do not receive the recognition they deserve from potential employers. The sub-group took the view that formalising the skills developed by researchers as they progress from graduation, through initial research activities to project leadership and management (see DORCISS Handbook) would help to change this inappropriate perception. It is clear from the findings that CRs need help and a structured process to analyse their skills (e.g. along the lines required by Grapevine).

Recognition of the progressive development of skill would be enhanced by the essential but relatively simple expedient of keeping an individual record of skills acquired and of work experiences. It was thought that while it is essential that there is an institutional infrastructure to support and encourage the record keeping, the main responsibility for maintaining such a record should lie firmly with the individual researcher. Clear and thorough briefing and regular reviews of progress – involving the regular use of an appropriate form of appraisal – would be crucial to motivate the researcher to maintain the record. It will be important to avoid the task being dismissed as simply a futile, disruptive and bureaucratic activity. Emphasis will need to be placed on understanding the value of a formal record of professional development for the purpose of individual review, reflection and career planning as well as to attract employment opportunities as part of a cv.

### **Continuing Professional Development**

The working group concluded that the most significant requirement from a national perspective on training and development for CRs was to promote the application of the concept of CPD to research staff (in accordance with the theme of Government policy described above). The application of CPD practices would encourage wider acknowledgement and recognition of skills of contract researchers. This would be a step towards provision of a planned approach to training (mirroring the more formalised learning opportunities in place for post graduate/post doctoral students).

The transferability of many of the skills of research staff is a powerful counter argument to the view that since contract research staff will not be in post for long, it is not worth investing in their training. To realise that enhancing the capability of a researcher will yield dividends on the next project – whether or not in the same or in a different institution – should encourage investment in the training period.

Recognition of skills and provision of more learning opportunities is considered to be essential for all stakeholders. Staff Development units will be the key to the provision of many such learning opportunities. This is addressed further in the next section.

## **THE WAY FORWARD**

### **Towards a Consensus**

The many developments identified in the investigations conducted suggest that it will be timely to achieve a consensus from all the signatories to the concordat on the need to promote the continuing professional development of research staff. The EPSRC provides an important example having already agreed in its April 1998 meeting to allow the costs of developing courses for contract researchers to be eligible for EPSRC support (that is, next time there is a call for development costs for CPD modules, then modules for contract researchers would be acceptable and their submission actively encouraged). The cost of sending contract researchers on courses is within the 46%. The second initiative they agreed was to develop "CRAC-type" courses for contract researchers (1 to 2 weeks). EPSRC would make attendance at such courses (at a substantially higher intellectual level than the current CRAC

"summer schools" for PhD students) available to all contract researchers supported on EPSRC grants - and would cover all costs. It is hoped that the new courses will be available from 1999. Such initiatives should be applauded and promulgated widely in acknowledgement of their considerable significance. Similar moves (desirably co-ordinated) by other Research Councils towards systematic CPD for CRs would address some of the longstanding problems experienced by contract research such as the lack of investment in their training, their lack of confidence to look outside the sector for employment and their need to take a proactive role in planning their careers in research. The RCI is well placed to encourage a co-ordinated approach in promoting CPD for all research staff.

## **Supporting Staff Development for Research**

For CPD to become a reality also requires changes in the focus of staff development in the HEI sector. There is a need for staff development units to expand their range of coverage to include:

- Strategic Management
- Management at the Departmental/Institute Level
- Project Management
- Support for Individual Researchers

### **Strategic Management**

Many institutions need to improve their research performance - this is particularly true of some of the smaller colleges whose staff are now expected to become research-active. Many HEIs are weak on strategic management and a programme to enhance the strategic management of research - and to encourage the creation of appropriate institutional structures to support research - would have widespread value.

### **Management at the Departmental/Institute Level**

Departmental management is increasingly seen as an area in need of attention and the management of research is part of this concern. Staff research performance is often highly skewed, with one or two "stars" producing much of the group's output and a long tail of under-achievers. There is much that departments or institute could do to foster the development of a research culture and much that a programme of support could do to help.

### **Project Management**

This is a key research activity, but it is addressed in relatively few staff development programmes. Most project managers learn by doing; effective programmes on project management would be easy to generate and could have huge benefits.

### **Support for Individual Researchers**

There are major differences between the experiences of academic staff, contract research staff (CRS), and postgraduate students. Often CRS fare worst. Specific induction for CRS and the availability of basic career advice would help enormously.

### What Could Be Done

There is relevant expertise around, both in the research and the staff development communities. What is needed - for the benefit of both UK Research plc and researchers - is:

- for this expertise to be harnessed and widely disseminated
- for funding bodies to be more explicit about their expectations that staff employed on their contracts will be developed throughout their careers

#### HARNESSING AND DISSEMINATION

The demand for activities and supporting materials is there. What is needed is a project that builds on the experience of SHEFC, the ESRC, and others and provides high quality support for staff development in research. Some of the outcomes will be targeted directly at researchers, others should be designed to help staff development professionals to operate more effectively within the area of research.

#### FUNDING BODIES' EXPECTATIONS

The prime driver in the improvement of training and development for teaching and learning has been the external pressures generated by audit and teaching quality. All staff - and all staff developers - are under enormous pressure, the only way for support for the development of research skills to become the norm will be for funding bodies to make training and development plans a real part of their decision-making on funding.

## RECOMMENDATIONS FOR THE RCI

1. A national policy should be adopted, actively to promote the continuing professional and personal development (CPPD) of all research staff, including contract research staff (CRS).
2. The policy should link clearly to the principles of life-long learning, which is a key element in the Government's policy on education, and which should define the roles and responsibilities of key stakeholders, including
  - Contract research staff
  - Principal investigators (PIs)
  - Appraisers
  - University and Departmental managers
  - Staff developers, and
  - Funding bodies.
3. The model should provide for CPPD of research staff, and offer a coherent framework which recognises the full breadth of careers adopted by CRS, and which is based on a template of desirable employment and managerial/supervisory skills.
4. Key elements of the model should be:
  - Accredited development and other provision to meet the requirements of the template, supervised by an appropriate body such as UCoSDA or THETO. Provision could be by individual HEIs, or on a regional or other appropriate basis.
  - A personal development record to provide a focus for individual assessment and reflection on development needs, as well as to serve as the basis for discussions about the provision of training and development in successive phases of employment.
  - Regular appraisal in a form appropriate to CRS.
  - Active involvement of PIs and HEI Careers Services in helping CRS to shape their career choices.
  - The provision of guidelines and models of good practice for institutional infrastructures to support CPPD for CRS.
5. The CPPD model should extend to the training and development of research managers, to ensure that, at the point where a researcher or university teacher takes up a research management role, (s)he has been provided with the main tools for developing a successful research strategy and managing a research team.
6. We recommend that the principles of quality assurance in HE, which are embodied in the work of the QAA, should be applied to CPPD of CRS. HEIs should expect to be able to demonstrate how they are meeting the requirements of the framework and the template, as well as the key elements of the Concordat.

7. Research Councils and other funders should seek to be assured that a suitable CPPD framework for CRS members is in place within any HEI, as a condition of awarding funding to that HEI.

## Appendix 1: Identification of Transferable Skills

### Corporate Management/Business Skills

#### Entrepreneurship

e.g. Business Start-up Awareness

- Technology Transfer
- Protection and Exploitation of IPR

### Project Management

#### Financial Management

- understanding financial systems
- budgetary control

#### Managing people

- understanding the characteristics of an effective team
- interpersonal skills within teams
- leadership
- motivation
- team building
- skills in delegation and support

#### Planning

- planning the work and the allocation of work
- planning to avoid peak load problems for support staff

#### Proposal Writing

- expertise in writing project proposals

#### Quality Issues

- understanding of quality assurance processes
- conducting regular project reviews - including development of ideas
- skills in working to deadlines *and* producing a quality product

#### Understanding the Project's Purposes

- clarity on project context

#### Information/Document Management

- Know-How Management
- Construction of Databases
- Document Handling

## **Personal and Interpersonal**

- Networking skills
- Financial management
- Time management
- Assertiveness skills
- Use of Information Technology
- Word processing
- Skills of workload management
- Stress management skills
- Managing your supervisor
- Negotiation and persuasion
- Communication Skills
- Managing People
- Team Working
- Managing Change
- Handling the Media

## **Research Skills**

### **Context**

- keeping abreast of current developments/future trends in the research domain
- maintenance of familiarity with the literature and with current practice in the field
- awareness of research activities of other people in the centre
- awareness of the wider social and political context of the research

### **Strategic**

- clarity of thought
- ability to distil out the finding of crucial significance from volumes of research data
- ability to operate across a range of different projects
- ability to generate high profile, authoritative statements on key issues
- developing the ability of staff to apply research methods/concepts to new domains

### **Research Concepts**

- research strategies
- ethical issues
- scientific method - some philosophical considerations
- philosophies and issues within research
- hypothesis generating and testing
- the political dimensions of research
- ethnographic research
- economic models of research

### **Methods**

- bibliographic and reading skills

- quantitative and IT aspects in research
- understanding of how to exploit hierarchical databases and use CD-ROMs
- statistical analysis techniques
- methodology generating and testing
- measurement and experimental design
- analysis of data - hard and soft
- validation of findings
- statistical skills
- qualitative and historical aspects in research
- working with organisations
- design and use of questionnaires
- using questionnaires in organisations
- survey techniques
- case study approaches to research
- computer modelling
- interviewing and participant observation
- field work
- survey methods (interviews, questionnaires, case techniques, action research)
- econometric methods
- psychometric methods
- linear and multivariate modelling
- association and grouping analysis techniques
- qualitative research methods
- interviewing skills
- more knowledge of available software for data analysis
- acknowledgement of the importance of qualitative skills
- survey techniques
- interviewing skills
- questionnaire design
- enhancement of qualitative skills, e.g. awareness of software packages
- sound quantitative grasp even if not primarily a quantitative researcher

### **Dissemination**

- writing skills
- presentation skills
- ability to write and present appropriately to different audiences
- skills in identifying outlets for publication
- networking skills

## **Appendix 2: Code of Practice for the Employment of Research Staff**

### **1. Introduction**

This Code of Practice constitutes the policy of Loughborough University and should be a model of good practice for research staff and for staff holding grants involved in the supervision of Research staff.

The code will be subject to monitoring and revision by the Staff Review Committee.

### **2. Line Management Responsibility**

Research staff are responsible to their Head of Department or Head of Centre/Institute for the performance of their duties. However it should be clearly established at the commencement of the project who their immediate supervisor is and the nature of that supervision.

Supervisors should keep researchers regularly informed about their performance in carrying out specified duties and in meeting the designated objectives of the research project. Supervisors should establish these objectives and the procedure for monitoring the progress of the researcher.

The nature of the involvement of the grant-holder, if different, should also be clearly specified at the beginning of the project.

Heads of Departments or Heads of Centres/Institutes will be ultimately responsible for career development issues such as staff appraisal, probationary reviews and training needs assessment.

### **3. Conditions of Employment**

All research staff are employed on the basis of formal written and agreed contracts of employment drawn up by Personnel Services. Such contracts must always be issued at the time of employment. Where a contract is renewed, any changes in the original terms and conditions of employment must be notified in writing and subject to the agreement of the individual to whom the contract applies.

Clauses requiring research staff to waive rights to access to unfair dismissal legislation upon the expiry and non-renewal of a contract, must be made clear to the appointee in writing.

Accompanying the issue of contracts will be the conditions of service applying to the employment of the individual. These will set out the obligations and entitlements of the employee (see below).

Any individual who is re-employed on a research contract or series of contracts will progress up the appropriate scale, except in the most exceptional circumstances.

Research staff whose period of employment extends for twelve months or more should be eligible to join the Universities Superannuation Scheme at the start of the contract which

takes the period of employment over twelve months. Employer's contributions to U.S.S. should be routinely provided for in grant applications.

The national agreement covering the employment of research staff stipulates that anyone with a PhD qualification or equivalent research experience must be appointed on the 1A scale as a minimum. To ensure this is possible all grant applications must be costed at the appropriate salary level.

No individual will remain on Grade 1B for a time in excess of 4 years, except in exceptional circumstances. Anyone aged 27 or over on grade 1A must be appointed to a salary at or above the "age point". Appointment on Grades 2-4 of Research and Analogous Grades will reflect appropriate qualifications, experience and responsibility.

Contracts will offer as much security of employment as appropriate. If funds for a contract are extended and there is little or no variation in the nature of the work, the contract with the post holder should be renewed save in exceptional circumstances.

Research staff are entitled to apply for promotion, accelerated increments and discretionary payments under the normal annual review mechanisms. Research staff are eligible to apply for conference and travel expenses on the same terms as academic staff.

The same rights will apply for research staff for time off for union duties as those for academic and related staff.

Salary increases awarded as part of national salary negotiations will be paid simultaneously with other staff covered by the national agreements.

Individuals employed as research staff are entitled to the same conditions of service as those of academic and related staff in respect of:

- working time
- annual leave
- maternity leave
- contribution towards removal expenses
- death benefit
- superannuation
- appraisal
- sickness benefit

An appointment of three years or more will be subject to a probationary period of one year. Research staff whose appointments are less than three years will serve a six month probation.

- It shall be the responsibility of a Head of Department or Head of Centre/Institute to make proper provision for the training, supervision and assessment of the probationers work and to draw to the notice of the probationer any aspect of work which is considered to be unsatisfactory. The Head of Department or Head of Centre/Institute shall report on the probationers performance mid-way through the probationary period and again not less than one month before the completion of the period.

- If it seems to a Head of Department or Head of Centre/Institute that it may be desirable to terminate the appointment of a probationer or to recommend that an appointment is not confirmed at the end of a probationary period, the probationer shall be informed in writing of the reasons via Personnel Services.
- On the satisfactory completion of a probationary period the appointment will be confirmed in writing for the duration of its full term.
- Research staff whose appointments are not confirmed following the expiry of a probationary period shall have the same rights of appeal as academic and related staff.

#### **4. Non-Research Duties - Teaching**

Where agreement with the funding body permits a researcher to engage in teaching duties, these duties must be subject to full consultation between the Head of Department/Centre/Institute, grant holder(s) and the individual concerned as to the nature and extent of duties, having regard to the maximum teaching hours set out in the Supplementary Conditions of Service for Research Staff. Opportunities for teaching and related work, which assist the personal development of the researcher, shall be provided where appropriate. Research staff will have access to appropriate facilities to meet their development needs associated with teaching.

#### **5. Job Titles**

Research staff appointed under Ordinance VI will be given the title of Research Fellow or Senior Research Fellow (for salary grades 3 or 4).

Other Research staff will normally be appointed as Research Assistants if on Grade 1B or Research Associates if on Grade 1A or above.

Other titles which are more suited to a department's discipline or mode of activity may also be used.

#### **6. The Research Environment**

##### **(a) Preparation of funding applications and holding of grants.**

The University should actively encourage the involvement of research staff in the preparation of research proposals and where appropriate to act as grant holders. Research staff should also be encouraged to suggest new funding or research possibilities.

Where individual members of research staff are designated as grant holders they will be accountable to their Head of Department or Head of Centre/Institute in the same way as academic staff nominated as grant holders. Such accountability includes abiding by any university procedures and guidelines concerning the management of grant monies and employment of contract staff as would apply to any other grant holder.

All research staff will be kept fully up-to-date as far as possible on the state of their existing funding and the likelihood of any extension by the grant holder and/or the Head of Department or Head of Centre/Institute. The Department should where possible plan and apply for funds to allow for the extension of contracts for continuous service purposes. Information on the

end of the contract should be given by the Department as far in advance as possible to allow individual research staff members the opportunity to seek alternative employment.

The bridging fund is available to provide for research staff between contracts in accordance with the rules of the scheme.

### **(b) Publication and Intellectual Property Rights**

Individual research staff must be accorded the status appropriate to their contribution to any published work arising from any project. This includes proper recognition for joint authorship in accordance with accepted academic practice governing contributions to specific pieces of work.

Agreements concerning obligations and entitlements applying to intellectual property rights for research staff are specified in Conditions of Service and are equivalent to those of Academic and Related staff.

## **7. University Government**

The University recognises the right of research staff to participate in the governance of the University. This includes the right of research staff to stand and be elected to School Boards and Departmental Committees. Research staff are eligible to vote in the various electoral colleges of the university. All full-time Research staff can be members of General Assembly and could be members of Council. Research Fellows can stand for and be elected to Senate.

Research staff can attend and take full part in departmental staff meetings and in departmental decision making processes.

## **8. Access to Facilities**

Research staff should have access to the necessary facilities for the performance of their duties. Research staff will have equal access to all non-academic facilities such as sport and leisure facilities offered by the University.

## **9. Career Development**

University policy is to encourage the renewal and extension of contracts where possible.

Research staff shall have access to appropriate career development facilities. A systematic training programme is seen as part of career development and involves the individual researcher, supervisor/grant holder and the University in identifying appropriate training opportunities. Research staff will have the facility to register for higher degrees in the University. Appropriate induction courses will be provided for new research staff.

Any individual who has been employed for a period of twelve months at the top of the Research 1A or 1B scale shall be entitled to request consideration for promotion. Heads of Department or Heads of Centre/Institute shall be notified by Personnel Services of those individuals who are eligible for consideration for promotion.

Research staff will be appraised in accordance with the procedures set out in the document 'Staff Appraisal Scheme' a copy of which will be provided to every member. Normally,

Research staff will not be appraised by their supervisor or grant holder. The appraiser should where possible be a researcher or a member of staff with substantial experience of contract research work.

The University will provide advice and support to research staff whose contracts are ending including notification of vacancies of research posts at Loughborough University and access to information held by the University Careers Service. Careers advice may be available on a limited basis.

## **10. Recruitment and Equal Opportunities**

Guidelines on advertising for Research posts have been drawn up. These are available from Personnel Services and must be adhered to.

University appointment procedures must ensure that researchers are appointed to the grade appropriate to the duties of the post and, subject to the nature of those duties, to the experience of the person appointed. Recruitment and Selection should be carried out in accordance with the University's Guide to Good Recruitment Practice.

## **11. Health and Safety in Research**

The University has a duty of care as employer for the personal health and safety of research staff. The University will ensure that health and safety procedures for research staff working on-site and off-site are practised and the necessary support, training and insurance cover provided.

Research staff have a duty of care as employees for their own health & safety and for that of others and to co-operate with the University to enable it to carry out its responsibilities.

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## **Appendix 3: Research Staff - Competence-Based Promotion Criteria**

The criteria below reflect the core activities of research staff (that is, the planning, conduct and evaluation of research and, where appropriate, the management of staff and resources and obtaining research funding). However, it is recognised that research staff may also contribute to the work of the University through teaching, administration and commercial activities. The Staff Review Committee will take account of the range and scope of such activities when considering promotion proposals on behalf of research staff.

### **Research Grade 1A**

#### **Entry Criteria**

1. A broad understanding of discipline-related knowledge.
2. Ability to work with little supervision on research topics.
3. Ability to work with little supervision with clients in professional areas, if appropriate.
4. Ability to work in a team.
5. Aptitude and motivation to assume more senior duties.

Criteria 1 and 2 would be considered essential for entry into Grade 1A. Criteria 3, 4 and 5 are considered desirable, as the demands of a particular post may not require an individual to utilise these competences.

The following additional competences will be developed as a member of research staff moves up the 1A scale, and may be useful in determining the appropriateness of accelerated increments etc.

1. An in-depth understanding of discipline-related knowledge.
2. Ability to work as an independent professional in research/application.
3. Ability to provide services to clients across a wide range of application areas, if appropriate.
4. Ability to organise and supervise a project team, if appropriate.
5. Ability to provide advice to colleagues in their research specialism.
6. Ability to prepare proposals and negotiate contracts with little supervision.
7. Effective participation in policy matters related to own research setting.
8. Ability to communicate effectively the results of own research to both specialists and non-specialists.
9. Aptitude and motivation to assume more senior duties.

Competences 1 and 2 would be considered essential. Competences 3 - 8 are considered desirable, as the demands of a particular post may not require an individual to utilise these competences.

### **Research Grade 2**

This grade is equivalent in terms of salary range to the Lecturer B scale. It would be expected that an individual on this grade would be competent in all the areas listed below and would

have either a national reputation in their field or be able to demonstrate an appropriate level of competence in their field and outstanding performance in the discharge of their managerial responsibilities, both technical and administrative, in relation to one or more large projects.

1. Ability to negotiate contracts independently in a chosen field of study to sustain self (and possibly a group of colleagues).
2. Ability to take a leading role in the determination of research objectives within their research setting and to take responsibility for implementing aspects of policy.
3. Ability to contribute to the development of other staff, if appropriate.

If promotion to Research Grade 2 is sought primarily on the basis of research rather than management responsibility, the candidate's research performance should be comparable to that of a research-active lecturer of some years standing, bearing in mind the requirements of the Research Assessment Exercise.

### **Research Grade 3**

This grade is equivalent in terms of salary range to the Senior Lecturer scale. It would be expected that an individual on this grade would be competent in all the areas listed below and would have either an international reputation in their field or a national reputation in their field and be able to demonstrate outstanding performance in the discharge of their independent managerial responsibilities in relation to large projects (including specialist competence, leadership of staff and handling of client relationships and professional issues).

1. Independent proposal and negotiation of substantive work programmes.
2. Formulation and execution of policy within own research setting.
3. Planning the development of staff, if appropriate.
4. Fostering and development of relations with professional bodies, the research community, the University, and other relevant groups.

If promotion to Research Grade 3 is sought primarily on the basis of research rather than management responsibility, the candidate's research performance should be comparable to that of a successful Senior Lecturer candidate whose case is based substantially on excellence in research.

*NB It is recognised that in extenuating circumstances market forces may prevail from time to time that would justify the exercise of discretion in the application of the above criteria when considering a promotion to Research Grades 2 and 3. Exceptionally, not all the criteria need be satisfied if an individual has outstanding strengths in other areas of strategic importance.*

### **Research Grade 4**

The salary minimum for this grade is equivalent to that for Professorial appointments.

- i. It is envisaged that researchers with a world-class reputation would seek promotion to a Chair via the University's established peer-review procedure.
- ii. Researchers who have a significant international reputation and a corporate research management remit (including responsibility for the scientific, managerial and financial

performance of a research institute/centre/group) may be considered for promotion to Research Grade 4 without the title Professor. All of the following criteria will apply:

1. Significant experience of exercising individual, personal responsibility for conceiving, initiating and managing major research advances, including all aspects of project management, particularly the leadership of other staff and handling client relationships and professional issues.
2. Fostering and development of relations with professional bodies, the research community, the University, and other relevant groups.
3. Independent proposal and negotiation of substantive work programmes.
4. Formulation and execution of policy within own research setting.
5. Planning, implementing and evaluating staff development strategies.
6. Responsibility for administrative/management/teaching functions.

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## Appendix 4: Career Management for Postdocs

(commentary based upon material kindly provided by Nicholas Bodycombe)

### Course at Cardiff University of Wales

#### Objectives of the Project:

- to raise awareness of contract research staff to local employment opportunities
- to help research staff plan careers and identify work related transferable skills
- to raise awareness of local employers of the pool of highly qualified research personnel present in the University
- to help remedy the low level of industrial research and development investment in Wales

The Welsh Development Agency is keen not to lose talented members of the Welsh workforce and have therefore supported the implementation of this free course.

The course offers postdocs:

- the opportunity for self assessment and career planning techniques
- to identify a transferable skills and teamworking audit
- a local employer's view of research in a smaller company
- a chance to identify potential employers
- a professionally produced CV to be circulated to appropriate employers

The agency takes the view that the economic, industrial and technological changes of the previous two decades and the advance of the next millennium require that the approach to careers, jobs and the way in which work lives are managed must be reassessed. To gain the interest of employers it sees that prospective employees must offer more; being able to add value in terms of skills, interests and values. The complete range of abilities and knowledge acquired in one field must be identified in order for them to be applied to other situations. The employment situation of the 1980's has affected all levels and types of work and the identification and promotion of transferable skills will enhance both the organisation and the employee.

Experience of the Welsh Development Agency is that the course has been well-received (sometimes counter to the expectation of participants!)

#### Conclusion

The process of identifying and acknowledging the considerable array of transferable skills developed by contract researchers is well-underway. The above examples of good practice in operation serve to illustrate that the rhetoric is now giving way to sound operational realities. As yet the potential value of such developments is under exploited because they are largely stand-alone initiatives outside of any co-ordinated national framework.

## Appendix 5: Transferable Skills for Contract Research Staff: the BBSRC Experience

(paper provided by courtesy of R. Price, BBSRC).

1. The BBSRC's research institutes employ nearly 1,000 postdoctoral research scientists on short-term contracts. This number has been growing steadily over the past decade as the proportion of stable "core" funding for the institutes has declined. The institutes therefore operate in a very similar manner to the universities in providing an initial period of employment and research experience for post-docs from which they will, in a majority of cases, move on to another employer for a "career" post.
2. In recognition of the important training aspects of this pattern of employment, the Council restructured its training and development provisions in 1994 and placed a particular emphasis on meeting the needs of the post-doc population. The policy focused on three key elements of training:
  - (a) Induction and core training
  - (b) Management and development training
  - (c) Continuous professional development
3.
  - (a) **Induction and Core Training**

Within a week of starting work, post-doc recruits should be assessed for training requirements, based on their previous training at undergraduate and postgraduate levels. This assessment covers both transferable skills and scientific/technical skills, and should be recorded on the sheet which is used to monitor the employee's probationary period. Within the same period, he/she will receive a health and safety awareness session and a Council/Institute "familiarisation" and induction session, delivered by site personnel staff using the standard BBSRC induction pack.
  - (b) **Management and Development Training**

Unless they have already achieved a high level of familiarity through previous training and development programmes, post-docs will be expected to cover the following topics during their first three-year contract period:

    - (i) Scientific writing skills: journal articles, reports, posters and popular scientific articles;
    - (ii) Presentation skills: seminars, lectures and industrial presentations;
    - (iii) Appraisal training: the objectives of appraisal, key skills (listening, feedback, objective setting), monitoring systems;
    - (iv) Introduction to management skills: an overview of the functions and skills required in contemporary management based on the National Occupational Standards for Managers;
    - (v) Equal Opportunities Awareness: the law and Council policies.
  - (c) **Continuous Professional Development**
    - (i) During an initial short-term contract with a BBSRC institute, a post-doc will normally receive on-site training in the research techniques

and computing/statistical skills required for their particular research field, and which have not been learnt during previous employment or research training. The line manager and the post-doc are encouraged to identify any deficiencies of this type at the various review points during the probationary period and to agree how they should be tackled.

Institute Training Officers are asked to ensure that post-docs are made aware of the range of possible developmental areas and to provide advice where necessary on sources of training;

- (ii) Post-docs who have already had some management training or who are on a second (or even third) short-term contract are offered an extensive portfolio of development training, through conventional face-to-face courses, a CD-ROM training library and distance learning. The most popular in each category are:

Training Modules:

- Project Management
- Handling the Media
- Managing Meetings
- Managing People
- Managing Activities
- Managing Change
- Communication Skills

CD-ROM Training Library:

- Finance for Non-Financial Managers: budgeting
- Project Management: the process
- Project Management: planning, tools and techniques
- Project Management: tracking and control
- Business Communication

Distance Learning:

- Diploma in Management/MBA

4. Deficiencies and Difficulties

- (a) Time Allocation: Post-docs on short-term contracts experience serious time pressures from PIs anxious for results and, if they are in a lively scientific environment, from the wide range of seminars, conferences, visits which occur throughout the working year. Creating time for transferable skills training which does not always have an immediate application or obvious relevance is frequently difficult. We have sought to address this difficulty in BBSRC by keeping face-to-face courses relatively short, and delivered in situ (at or very close to the workplace). But it is important in developing a national framework not to demand too substantial allocation of time;
- (b) Recording Achievements: The further that transferable skills training is developed within undergraduate, Master's and PhD programmes, the greater the need to establish a framework for recording training and achievements. We need to avoid repetitious training and also seek to link training outcomes

to practical achievements in the workplace. The post-doc level of training should be clearly distinguishable from postgraduate training; at present, we do not feel that we have fully achieved a proper distinction within BBSRC;

- (c) New training and development themes: We are aware of several key topics not covered by our standard Council-wide portfolio, although they are being dealt with on an ad-hoc basis by individual institutes. The most pressing are topics relating to the protection and exploitation of IPR, and business start-up "awareness". They arise from the burgeoning opportunities in the bio-sciences for rapid exploitation of new discoveries for commercial purposes. We intend to encourage our funded PhD and MRes programmes to pick up these topics more consistently in future, but would want to keep reinforcing the messages from Foresight about the need to keep technology transfer at the forefront of post-doc scientists' thinking. A further topic in which our post-docs are receiving ad hoc on-the-job training is in the acquisition of research funding through grant applications to commercial, EU and other funders (including the BBSRC itself). It is not clear to us whether a more systematic approach to training in funding acquisition would be feasible or cost-effective.

5. Additional Comments

- (a) BBSRC experience strongly supports the proposal that there should be a standard framework of training, and that each institution should identify a senior researcher to be responsible for ensuring compliance. Providing training opportunities without a clear framework of expectations is unlikely to be very effective. However, the content and delivery of training should not be too closely prescribed since it will be important for it to be tailored to different subject areas, and research environments. Universities within a particular region may sensibly decide to share facilities and expertise but any suggestion of a nationally imposed framework will undermine ownership and commitment;
- (b) BBSRC experience also underlines the importance of an effective communications system which provides guidance and information to post-docs and research leaders alike, together with a reference point within the institution/organisation.

## Appendix 6: EPSRC

(paper provided by courtesy of David Clark, EPSRC).

### CONTRACT RESEARCHERS

#### The Role of the Research Councils

The Research Councils have the task of fostering the skills, knowledge, and expertise of the UK research base and stimulating a flow of highly-trained people and know-how from universities (and other research providers) into all parts of national endeavour (industry, commerce, the service sector, academia and government). The flow is stimulated by the Research Council through the provision of funding, technology, and some knowledge. Although attention needs to be given to national competitiveness, and the quality of life of the citizens of the UK, it is rarely possible to predict in detail what skills and knowledge will be required for the future – other than in very general terms. Hence the flow of skills, knowledge and expertise relies overwhelmingly on the ingenuity of individual scientists and engineers who, aware of the problems being faced by industry and other users of the research base, pursue new lines of enquiry. The overall objective is to provide a national reservoir of relevant knowledge and expertise to be accessed by industry and other users as they face future technical challenges. Contract researchers (Research Assistants, RAs, and Postdoctoral Research Assistants, PDRAs) need to be seen as part of the flow of highly trained people and know-how out of the universities and into the national workforce.

#### Managing Expectations

- **Principal Investigators** (grant holders) see Contract Researchers as the means of getting research done (“hired hands”);
- **Contract Researchers** (or at least some of them) see a contract as a stepping stone to an academic career;
- **Research Councils** see Contract Researchers not only as a means of getting the research done, but also as a means of knowledge and skills transfer.

University Administrations need to manage these various expectations – especially since only a minority of Contract Researchers can expect to progress to academic appointments; and in any case Research Councils expect to see “a flow” of contract researchers out of universities, into the external workforce, to achieve their objective of providing knowledge and highly-skilled people for “UK Ltd”.

#### Responsibilities

Contract Researchers are employed by the Universities – so in a simple legal sense the Universities (as good employers) have the responsibility to provide career advice and training for career progression (inside and outside of academia). In truth there are four parties who share a responsibility to ensure that Contract Researchers are provided with advice and training opportunities to enable them to plan successful careers – acquiring appropriate skills

at successive stages, and with consideration given to the full range of career options (which for the majority of Contract Researchers will lie outside academia):

- The contract researchers themselves;
- The grant holders;
- The Universities;
- Funders.

EPSRC encourage career progression through various schemes: for example Advanced Fellowships for those wishing to pursue an academic career, the Teaching Company scheme and the Research Assistant Placement scheme for those wishing to transfer to industry – and so forth.

### **Career Paths**

A simple “road map” for progressing through the academic system, and out into the external workforce, is shown below –

At each of the steps 1 to 8, sound career advice, training options, and transition mechanisms should be made available.

### **Career Advice**

Career advice is something the universities do rather well, at least at the graduate level. Advice of comparable quality is required at all stages (1 to 8) of the “road map” – with particular attention needed at the (PD)RA level. Universities take great pride in the placement of graduates in the external workforce – and nurture contracts with alumni. There would be equal merit in universities approaching the “flow” of their Contract Researchers

with equal pride – and seek benefit from continued association with Contract Researchers who have moved on to positions in industry, commerce, government, etc.

### **Training Options**

At each stage 1 to 8, an increasing level of “general transferable skills” can be expected. Such training is increasingly incorporated in Masters and Doctoral level experience. At the (PD)RA level a high level awareness can be expected of such issues as –

- Leading a team;
- Managing of finance;
- The nature of innovation;
- The identification and protection of intellectual property;
- Preparation of a business plan;
- “Spin-outs” and “Start-ups”;
- Quality management;
- etc.

EPSRC funds the development of modules for training purposes at this level – and modules can be packaged for various sector needs through the Integrated Graduate Development Scheme (IGDS). There is no reason why modules should not be developed (with EPSRC funding) specifically directed to career development for (PD)RAs. In the Dual Support transfer of 1992, the calculation of the 40% indirect cost addition (now 46%) included an element for career development and training of Contract Researchers; so unless/until the present arrangements for Research Councils contributing to indirect costs are changed it should be assumed that, although EPSRC could fund the development of modules designed for (PD)RAs, course attendance costs should lie with the universities.

### **Transition Mechanisms**

The issue here is what more can be done to encourage the flow of Contract Researchers out of academia and into the external workforce? There needs to be a high kudos exit route from academia for Contract Researchers.

## **Appendix 7: ESRC/DORCISS Handbook for Professional Development of Research Staff**

### **The Handbook:**

- is a text-based package
- includes OHP masters
- is in an easy-to-use ring-binder
- includes checklists and examples of good practice
- is firmly rooted in the realities of research centres
- is flexible, and responsive to the particular needs of your centre
- provides a framework for looking at your centre and determining how best to meet your training needs – irrespective of your starting point, your budget, or your skills

### **Who Is It For?**

- Centre Directors
- Senior Managers
- Staff Developers

An awareness of its contents will also be of interest to university managers and funding bodies.

### **Contents of the Handbook**

#### **Introduction**

- Purpose of this Handbook
- Background to the Handbook
- Use of this Handbook

#### **Developing a Centre Training Strategy**

- What Is a Training Strategy?
- Seeing Your Centre As It Is
- Needs Analysis
- External Involvement
- Centre Development Needs
- Career Stages
- Career Stages and Activities – A Tool
- Career Stages and Training Needs – A Tool
- Identifying the Training Needs
- Delivering Training
- Making It Happen

**List of Desired Competencies**

- Culture and Infrastructure
- Corporate Management
- Personal and Interpersonal
- Project Management
- Research Skills

**List of Perceived Needs**

- Culture and Infrastructure
- Corporate Management within the Centre
- Personal and Interpersonal
- Project Management
- Research

**Project Information**

- The Project
- DORCISS Training Initiative
- Sample Centres
- Newsletters
- Pilot Training Events
- Project Staff and Contact Points

## Appendix 8: ESRC Course

### Research Management Training

The topics covered in this successful and well-received programme were:

#### Event 1

- Introductions
- The Programme
- Scanning the Research Centre Environment
- Strategic Planning within a Research Centre
- Possible Futures for Research Centres
- Running a Commercial Research Organisation
- Managing the Research Enterprise & Organisational Structure and Leadership Style
- Financial Management & Planning
- Managing People
- Planning Actions

#### Event 2

- Project Management
- Relations with Parent Institutions & Managing the Infrastructure
- Appraisal
- Time Management
- A University View of Research Centres
- Trends Among Producers, Funders and Users - Positioning Yourself in the Social Science Marketplace
- Research Funding
- Professional Development and Planning for Centre Managers
- Evaluation

Consultancy Groups ran throughout the whole programme.