Career paths of academic researchers:

ENGINEERING

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Aerodynamics - Nicola

After completing a Ph.D. in Computer Aided Aerodynamic Design, Nicola held two research contracts over a period of three and a half years before moving to work for a financial software company as a systems integrator.

WHAT PROMPTED YOU TO CONSIDER OPTIONS OUTSIDE ACADEMIA?
Six months before the end of my research contract, I accepted a temporary six months post of admissions tutor. Although I had more or less decided I didn't want to do another post doc or lectureship, it was the admissions post that really convinced me to consider other options. I was keen to develop new skills, meet new people and was ready for a change of work environment. The potentially higher salary also appealed.

I looked mainly into I.T. and finance jobs, but did apply to the Civil Service too. Although my supervisor encouraged me to apply for lectureships - warning me that competition was strong, but that it was important that I was seen to be applying - I was fairly certain I wanted to make the move.

HOW DID YOU FEEL ABOUT THE TRANSFERABILITY OF YOUR SKILLS AND KNOWLEDGE?
Apart from my computing knowledge, the knowledge gained during my post doc and admissions post wasn't really transferable to the options I was considering. In general I was very happy about the transferability of the skills I had developed including written and oral presentation, self-discipline, self-motivation and organisation. I was, however, a little concerned that my computing skills were limited to those required to do my PhD research.

COPING WITH THE TRANSITION
I had been applying for jobs during my post doc and had, in fact, been offered a job by British Aerospace. In the event it took very little time to identify vacancies by talking to colleagues / friends who had already moved out of academia, looking at job adverts in the papers, attending job fairs and joining both a recruitment agency and a job e-mailing list. The transition process for me was painless - even though it meant moving from Leeds to London, leaving good friends behind in Leeds and paying a lot more for a similar standard of accommodation. Frankly, the biggest challenge for me was disappointing my supervisor and I was concerned that I might regret the move out of academia and either not find the work challenging and interesting or be out of my depth! I hoped I would get a lot of training and become operational quickly.

THE APPLICATION & INTERVIEW PROCESS
I needed a CV for my current job - though most of the others I considered required only an application form. For attendance at job fairs I would suggest a one page CV, keeping it simple but clear and attractive, on good quality paper. Just for information, part of the Civil Service selection procedure involved taking a test with literally thousands of other candidates - quite daunting! Both of the first interviews for the two jobs I went for consisted of two parts: an overview of the company and the job, followed by a fairly informal interview to determine if I would 'fit in'. The second interviews of these two jobs were very different; the interviewer for one was a computer guru and for the other a pushy salesman. The computer guru wanted to find
out if I had adequate computer skills, the salesman wanted to find out if I was brash enough to sell. In both interviews I was specifically asked why I wanted to move out of academia. I said that I did enjoy research but was being snowed under with administration and teaching, adding that I wanted to be more challenged, to work as part of a team and to broaden my knowledge, experience and skills. I felt calm about the whole process until they told me that the job for which I had been selected no longer existed so I was in competition with the other candidates for the remaining job. I then felt very stressed for a few days whilst waiting for the outcome, it made me realise how much I wanted the job.

YOUR CURRENT JOB AND FUTURE PLANS
I am very content in my present job, which involves setting up bespoke software for financial institutions. I really enjoy the challenge of doing something at which I am relatively inexperienced. At the moment I am working Monday to Friday in Brussels, spending only occasional days in London. The computer programming and preparation of written reports is similar to my academic work, but I have more frequent, critical and consequential deadlines. I'm also paid for overtime!

Although I miss being experienced in my area of research and the freedom to explore novel ideas, I like the fact that my work is more consequential. I work closely with a number of colleagues from a similar background to mine, although many of the senior people in the company do not have academic backgrounds. Hopefully I will continue to build my understanding of finance and business and perhaps move into the area of mathematical financial modelling.

HINTS AND TIPS
· Fill in photocopies of application forms before filling in the originals.
· Allow plenty of time for travelling to interviews.
· Re-read your CV before the interview and plan your responses to predictable questions.
· Find out whether your university runs courses to help you with career planning.
· Don't go for the first job that comes your way.
· Gain as much computer experience as you can - it's invaluable.
Bioengineering - Graham

Background
I graduated with an Honours degree in Physics and spent four years as a supply teacher primarily teaching mathematics and science to 11 to 16 year olds. During this time I obtained a P.G.C.E. from the University of Warwick, Coventry. I then joined the Department of Dermatology at a Welsh University as a contract researcher where I obtained a Ph.D. in Skin Bioengineering and Occupational Dermatology. In total I spent some 14 years in contract research work where one of my responsibilities, which stood me in good stead later, was to implement and maintain the department's presence on the Internet.

I decided to make the move out of contract research work when the new head of department wound up my particular research group. My experience of doing many of the web based activities required in the contract research position set me up for a redeployment opportunity as the College Web Officer and Web Development Librarian. I saw my job in an internal bulletin prior to the final appeal on my former job applied and started working straight away. Now I set up and manage the new college website and teach and support web-based information retrieval and assessment.

Transferable skills development
The main skills that I developed in contract research and now use include:

- Oral and written communication - Outlining key points and presenting information in a logical way at the listeners or readers level of knowledge.
- Decision making - Making realistic decisions based on taking risks supported by intuition, logic and data. Working objectively in emotional situations.
- Planning and organising - Identifying and setting realistic time scales, costs and activities for self and others and planning work to achieve goals and targets. Working unsupervised.
- Networking - Establishing and developing useful working relationships to exchange information. Creating awareness of research work and contributing to conferences, seminars and societies to gain exposure. Supporting existing networking partnerships and developing new networking partnerships.
- Interpersonal - Managing people through others and building relationships and morale by developing, supporting and encouraging others in a group. Resolving disagreements and misunderstandings to build strong working relationships.

I continue to use all these skills, but I sometimes call on other skills that I developed during my time in teaching and in charity work.

Messages
Take every opportunity to develop complementary or additional skills when doing contract research work. Make sure that your willingness to take on this extra work or responsibility is well documented as often this willingness to co-operate can be taken advantage of.

Consider all other activities and work experience and the skills you developed in them. For me, teaching and being chairman and director of a charity equipped me with some of the skills that I now use in my current job.
Bioengineering - Jennifer

Route into HE
Jennifer entered university from school and took first a B.A Hons, followed by a M.Sc. and finally a Ph.D.

Route into Contract Research
She went into contract research after her Ph.D. and had six years of contracts in Mechanical Engineering or Bio-engineering and 10 years of contracts in a Transport Operations Research Group (TORG). During this period she was promoted from Research Assistant to Senior Research Assistant.

Nature and range of work
Jennifer was involved in transport operations development projects working on new systems and testing systems as well as data collection for systems. She attended conferences all over the world and presented her work there. Jennifer supervised other RA's too.

Likes about Contract Research
· The variety of work.
· The time to have one's own good ideas (the work not always being too directed).
· Conferences abroad.

Dislikes about Contract Research
· Jennifer says simply - the insecurity.

Reasons for moving on
Jennifer worked in the Engineering Faculty for 14 years. She had been fed up for a long time but was not desperate to take action. She found herself moaning a lot and then funding in TORG was cut and she found herself with a half time job. She gained another half time job in CPE (Centre for Process Engineering), where eventually, a full time post may have become available.

Jennifer did make attempts to find an alternative, more secure position, within the university:
A Lectureship was applied for and led to short-listing. Jennifer prepared long and well. She made and enjoyed a presentation and felt in control. At the interview she was the best dressed person and felt she presented herself well for the position. She was disappointed and angry not to be successful.

Jennifer also applied for an admin post in the Medical School, feeling she had a lot of evidence of suitability for the position and had some medical background, as well. She feels her strengths are organising a project to effective outcome and working well in a team which is working hard and pulling together to achieve in a challenging situation.
She spent time on the application, had a good interview and was led to believe that she had responded well to the questions. Not only did she not get the job, but she waited weeks for the rejection letter. She was surprised and disappointed but decided she must get on with what she'd got.
Exploration of Options and Sources
Jennifer took holiday and took time to unwind and then came the call to send her C.V. to her present employer. A friend who had been a colleague in TORG and now worked for a consultancy contacted Jennifer and suggested she send her CV to the local office Director.
Jennifer was excited by this prospect and did so, following a telephone call to the Director to talk about the possible opportunity for a vacancy and the work which was involved. The discussion also included Jennifer explaining what she had been doing which led to an invitation to put her C.V. in the post.

She spent the evening, in conjunction with her Engineering lecturer husband composing a letter of application which would make the right impression and would be relevant to the conversation over the telephone. Her husband has the right background to give appropriate feedback and some changes were made, before sending it off.

An invitation to interview followed. It was an informal affair - very much at ease and two-way. Jennifer was asked what she could offer and this led to a discussion. Working in another city was mentioned and dismissed by Jennifer for family reasons. The pay offer was less than current as a Senior Research Assistant, but the job offered an exciting promise. An offer followed and was accepted.

Messages for Contract Research Staff
· Jennifer advises fellow Contract Research Staff to
· Try to stay positive about their work whilst they seek an alternative and to keep trying, even when disappointed - or even worse.
· Be aware of transferable skills and what you would like to do, so that opportunities arising are immediately obvious as such.
· Be clear, too if you have any constraints (such as geographical, or financial) so that you are clear at once what to reject as potential opportunities.
· Be prepared to think ahead and see the potential of something which may not be everything you want immediately, yet could be in time. Know what is most important to you and if that is available, what might you compromise to have that.
Civil Engineering - Rhys

Background
I worked for a firm of Consulting Engineers for twelve months before starting as a Research Associate at the University where I obtained my degree and Ph.D. in Civil Engineering. My contract research work, primarily funded by the Science and Engineering Research Council in collaboration with British Gas and the Water Research Centre, considered the influence of seasonal ground movements on buried services. Numerical and experimental studies helped the national utilities prioritise their maintenance schedules. During that time I developed a very keen interest in research and wanted to continue it but within an academic environment. So the natural progression was to a lectureship, which I set as a target for myself.

My personal contacts were a great help to me and I was fortunate that an opportunity arose to apply for a lectureship at the University whilst still being funded as a Research Associate. My interview was not that different to the one for my Research Associate position although the focus was more on my ability to work and conduct research independently. There was no time lapse between the two jobs and now my lecturing duties cover soil mechanics, engineering analysis, environmental geotechnics, information technology and getting involved in field courses.

Transferable skills development
The transferable skills that I developed during contract research work include:
- Communication - Speaking knowledgeably and enthusiastically at the level of others. Writing clearly using simple words and phrases that are easily understood.
- Decision making - Taking risks and making decisions with only limited information. Seeing through unpopular decisions and working objectively in emotional situations. Basing decisions on intuition, logic, information and data.
- Planning and organising - Planning work to achieve objectives. Making use of available resources and planning and co-ordinating the work of others.
- Problem solving - Making independent conclusions from complex data and information. Using observation and perception to develop enterprising solutions to problems that demonstrate a flexible and versatile approach.

In my new role I had to become more aware of the internal politics and my role in them and I had to develop my general management skills in order to perform effectively.

Messages
If you are interested in lecturing as a career move then you will find that recruitment like most other aspects of the job is currently dominated by the Research Assessment Exercise. To make sure that you stand out from others, publish as extensively as your work allows and get involved in planning new research projects as much as your current position allows.
After completing a Masters course in the Civil Engineering department, David held one contract for nine months before leaving to work as a learning mentor in a secondary school.

**WHAT PROMPTED YOU TO CONSIDER OPTIONS OUTSIDE ACADEMIA?**
Although initially working in academia interested me, and the environment was informal and flexible, the research was not working for me. I felt there was very limited support and could not see a future in my job even though I had been offered an extension on my contract. I also had a strong desire to work with people, to be in a team environment.

**HOW DID YOU FEEL ABOUT THE TRANSFERABILITY OF YOUR SKILLS AND KNOWLEDGE?**
My Masters course had helped me identify and develop a wide range of transferable skills. I was not afraid of the challenge and knew I could do it. I was also learning new skills through doing practical courses and was very positive about my ability to continue learning. In the event the job I got marries up very well with where I wanted to be.

**COPING WITH THE TRANSITION**
I realised half way through my contract that academia was not for me and it then took 4-5 months to do the research, apply and get the job I am currently in. I had a very strong need to change and that spurred me on. It was also helpful that I saw lots of vacancies that appealed. I used my research skills to good effect, looking on the net, in magazines and newspapers, the Careers Service vacancy bulletins, city council vacancy lists, temping agencies, the Volunteer Bureau and of course word of mouth. I have been able to integrate into my new environment very quickly and extremely easily.

**THE APPLICATION & INTERVIEW PROCESS**
I had to complete an application form for the job I got. In the interview a lot of questions were asked and the job outlined was far more specific than my academic post. When asked about my motivation to leave academia, I was honest and said it wasn't for me. I felt the preparation for the interview was vital and would encourage people always to ask for feedback and not to get downhearted. Use it positively. For me the whole process was quick and painless. Afterwards I felt I could achieve anything and was surprised at the ease of it.

**YOUR CURRENT JOB AND FUTURE PLANS**
My current job involves working with children who are under-achieving at school - trying to enable them to realise their full potential. I really enjoy the fact that there is a huge people focus, that I have freedom in which to work and am part of a strong team. The work is worthwhile and meaningful and I get support from the team - very different from my experience of academia. It's not all roses. People do fight their corner and there are boundaries, but I value the chance to share ideas and the feeling of not being isolated.
The working hours and pattern is not dissimilar to university, but I work with a very wide range of people coming from youth work, community work, teaching and commercial backgrounds. On a typical day I start work between 8 and 9 am, having planned the night before who I will try to see that day. When I get in, I start with paperwork, talking with colleagues and having casual chats with teachers. Then I'll see referrals for the rest of the morning, taking a break before lunch to walk around the school, meeting the kids informally and showing an interest in what they do. The afternoons I try to keep free so that I can see people on spec (and do more paperwork!), then of course there are the meetings with other staff to promote the scheme and keep the momentum going.

As the communication structure is quite hierarchical, it's important not to leave anyone out of the loop. The main skills I am using now are, listening, organising, dealing with meetings, planning, report writing, time management, networking and counselling. In fact counselling is the area I would like to move into eventually so the job, as well as being extremely satisfying, is reinforcing my definite direction. The work is definitely not more stressful than work in academia and I would not consider going back.

HINTS AND TIPS
- Don't worry. If things are properly thought through, and the skills you have are transferable, then everything will work out.
- Consider developing other useful skills through evening classes and voluntary work.
- Make contacts, speak to people, bang on doors.
- Don't be timid.
- Use everything as a positive experience.
- Be prepared to need a lot of energy - it may be a rough ride.
- Most people can achieve exactly what they want to achieve.

On a practical note, David found the University Careers Service and reference to the book, "What Colour is Your Parachute?", extremely helpful. He would also recommend keeping a log as a reference for self-reflection and skills-logging.
**Electrical Engineering - Richard**

**Background**
I was a Research associate for over five years following my B.Sc. in Physics and Ph.D. in semiconductor physics. My first position was in a Department of Physics and Astronomy researching Applied Optics and my second position was in the Circuits and Systems Group at a school of Engineering. I enjoyed academic research but I never really saw myself as a lecturer, so I gave myself a target to get out of academia by the time I was 30.

During my contract research work I slowly evolved from a physicist to a practical engineer, so a move into electronic engineering seemed a logical application of my physics and research background. I submitted my C.V. to 3 or 4 specialist engineering recruitment agencies, specifying South Wales as my preferred job location.

From sending out my first CV it took about three months to find my current job as an Analog Integrated Circuit Design Engineer, involved in computer-aided design and simulation of integrated circuits for use in telecommunications applications. At my interview it seemed that the company was only interested in matching my technical skills to the vacancy and less interested in my personal qualities and any additional skills that I have which might be useful to them.

**Transferable skills development**
The transferable skills that I developed during contract research work include:
- Communication - Using sentences and bullet points to break up large bodies of text to facilitate easy reading. Oral skills include asking questions and listening to the answers to involve people and agree outcomes.
- Planning and organising - Planning resources to achieve goals and targets and developing contingency plans to overcome problems. Reviewing progress against objectives and revising as necessary.
- Problem solving - Analysing, evaluating and assessing relevant data and information to come to independent conclusions. Considering alternative solutions and strategies to make creative and enterprising solutions.
- Research and analysis - Writing technical reports and planning and organising laboratory and fieldwork.
- Teaching, training, coaching and development - Presenting information clearly and confidently without using jargon or complicated words.

I only use my technical skills now, the other useful skills I developed as a researcher are not being used at all.

**Messages**
As far as possible work in a field of research that is of direct relevance to industry and make every effort to develop contacts with people of influence in that industry in the form of collaborative projects. Get help with writing your C.V. when you decide to make the move away from contract research. The C.V. course that I went on helped me to think more about what I wanted to do as well as tailoring my C.V. to appeal to an industrial rather than an academic employer.
Electronic Engineering - Shaun

Route into HE
Shaun went straight from school to a first degree in Physics and a Ph.D. in Electronic Engineering at a traditional northern university.

Route into Contract Research
Shaun enjoyed research and felt he was good at it. Post doctoral research just seemed to follow on from the Ph.D. The department was familiar with his work and his recruitment to a post-doctoral position was done informally.

Nature and range of work
- Experimental and computer modelling research.
- Supervision of research students.
- Writing papers.
- Presenting at conferences.

Likes about Contract Research
- His research subject was interesting.
- Pleasant working environment. Shaun particularly enjoyed receiving positive feedback on his progress.
- Discussing research with colleagues.

Dislikes about Contract Research
- Seeing friends earn more money in less challenging jobs.
- Never felt fully 'at home' in academic research.

Reason for moving on
Shaun realised he wasn't as motivated as his colleagues and didn't have a long term interest in the research.

Exploration of Options and Sources
Shaun used a variety of sources - newspapers, speculative applications, the internet and university careers service - to look for opportunities. A three day EPSRC course designed to improve the career management of contract researchers gave him the opportunity to explore ideas with like-minded contract researchers, network and set up work shadowing. The group tutor, a former contract researcher, was a particularly useful 'sounding board'.

Being offered a job in the first company where he 'shadowed' and having to turn it down because of an unrealistic expectation on start dates was a big setback for Shaun, but he continued to be positive, set up work shadowing at two further organisations and made plans to build new contacts at upcoming international conferences. He was then invited to interview by the first company where he had shadowed and after an interview with Human Resources and a company director, Shaun was again offered a job with an immediate start. This time, he negotiated a compromise that meant he was able to give reasonable notice.

He is now a consultant with one of the world's leading telecommunications and IT consulting companies. His role involves strategy development, network design,
modelling, advising on out-sourcing strategies, project management and on-going implementation support. Shaun enjoys the emphasis on understanding clients' business environments and the fact that he can add significant value to clients' businesses through his expertise and experience.

Messages for Contract Researchers

• It's important to understand what you want from life and question your own values to establish whether academic research is really for you.
• If you decide to move on, investigate your options and use the help available (the EPSRC course and resources such as the internet and the Careers Service).
• Try to enjoy the career planning process and find some fun in it.
• Build a support network of like-minded people who can help keep your momentum going and share ideas and contacts.
• Think outside the box.
• Although technical knowledge is vital, other things are as important, e.g. ability to communicate and deal with people at different levels.
• Use examples from outside your research to present a rounded picture of yourself (Shaun was involved in the running of a community radio station).
• Seize or create opportunities to develop knowledge and skills outside pure research (Shaun taught himself computer programming and web design skills and learnt the basics of business finance).
Sven held one research contract prior to his Ph.D. in Electronic Engineering, and worked as a consultant for the department during his Ph.D., before moving to a company in the U.S.A. to work as a design engineer.

WHAT PROMPTED YOU TO CONSIDER OPTIONS OUTSIDE ACADEMIA?
I wanted to gain hands on experience and take on bigger challenges - particularly in terms of developing design skills in an industrial environment. I enjoyed very much the academic research in my university, however there did not seem to be much scope for career development and I did not push for my development in the university at that time.

HOW DID YOU FEEL ABOUT THE TRANSFERABILITY OF YOUR SKILLS AND KNOWLEDGE?
Although I felt skills never seem enough, I felt good about my knowledge. I hoped I would be able to have an active role from the beginning so my main concerns were about integrating into a new team / work environment and keeping myself up to date. I had developed patience, research and commitment through my academic work and knew that these would still be useful.

COPING WITH THE TRANSITION
My time-scale to move from academia to industry was one year. It took a few months to identify vacancies, during which time I sought advice from people who I believed were trustworthy and motivated to help. I faced one issue at a time, related the issue to my overall goals and dealt with it, involving others where appropriate. I found the whole process painful - with one of the biggest challenges being the logistics of relocating to the USA. Having a good supervisor at the university, who understood my desire to move and was very supportive, was a great help. Networking generally was vital.

THE APPLICATION & INTERVIEW PROCESS
I needed a CV for the job I now have. I kept it to two pages and focused on my strengths, but was honest. My interviews were fair but demanding. I found them very intense - focusing on my skills and work experience. This was quite different from my academic interviews as they focused on the specific project in hand and my willingness to work on it. When asked why I wanted to move out of academia, I said that I wanted to gain hands on experience in an industrial rather than academic environment. Although the process made me feel like a fish being grilled, it taught me things about myself that I was not aware of. Finally, luck is always welcome!

YOUR CURRENT JOB AND FUTURE PLANS
My job now goes from design to production of integrated circuits. Basically I get enormous satisfaction from seeing my circuits actually placed in everyday items. Although carrying out an assignment within a project mirrors the process that I experienced in academia, the demands are much greater and the time-scales much tighter. I work with people from a mix of academic / commercial backgrounds and find that the boundaries between academia and the commercial work I am now doing are rather blurred.
The technical and personal skills I use have broadened, incorporating things I used in my research work combined with the commercial requirements of my present company. I am really happy in what I do and enjoy being part of projects that integrate different expertise; it’s rewarding to feel like a peer among peers! I want to continue to acquire industrial experience, to increase my understanding of how low level requirements affect the performance of the whole system. That said, the freedom that academia grants you to drift your focus towards unknown areas is something I have not felt for a while! I maintain my academic contacts as much as I can and would definitely consider re-entering the university sector once I have gained enough experience and exposure to different issues.

**HINTS AND TIPS**

- Don't do it for the money - do it if it will make you happy.
- Focus on what you want to achieve.
- Take time to make every step of the transition successful (do not rush if possible).
- Broaden your interests in order to develop additional skills.
- Seek advice from people you know to be trustworthy and dependable.
Energy Studies - Alistair

Route into HE
Alistair took the traditional route from school to University, where he achieved a B.Sc. in Applied Maths and a MSc. in Atmospheric Physics and a Ph.D.

Method of entry to Contract Research
Alistair replied to a job advertisement and also used a personal contact to get his two year post-doctoral EC project (energy evaluation of a sports centre). This was followed by a two year post-doctoral post to develop software for building modelling.

Nature and range of work
The work involved mainly software development; analysis of energy use in building (from computer monitoring and site visits); report writing and data analysis.

Likes about Contract Research
· Alistair enjoyed the freedom to decide how to work, hours etc. as well as his intellectually stimulating colleagues.
· He was grateful for the satisfaction of doing research rather than a repetitive job.

Dislikes about Contract Research
· On the other hand he enjoyed less sometimes poorly managed projects and working alone a lot.
· Alistair did not always feel it was useful or directly relevant work and it was not always good for his career (experience in 'real world' highly valued).

Exploration of Options and Sources
Alistair made his transition at a time of severe financial recession in the world and there were not many jobs available to apply for. He used Employment Agencies, Careers Services and the press. It was a slow process, which caused even more frustration and concern. He had hoped not to have to move his family from the north-east, but it was not to be.

The job which he found involved re-location, but the attractions of the post - including greater security and a better salary as well as intrinsically interesting work - convinced him that this was the right move for him and his family. Nine years later Alistair is still working in industrial research on the analysis of energy use in the electricity industry. Supervision of Ph.D. students maintains his links with academia.

Messages for contract researchers
· Use as wide a range of sources for job hunting as possible (Alistair was seeking a job in a recession) including Careers Service; recruitment agencies and press - national and specialist.
· If your background is wide-ranging be aware of the full range of your competences to relate to job advertisements and further details.
· Prepare well for your interview by thinking what they are likely to want you to be able to demonstrate evidence of/know.
· Do not become too despondent if it takes time to let you know the outcome - try to stay positive.
· Do not stop looking until you know you have something.
. Better career counselling is possibly needed. Alistair sometimes feels that he spent too much time in research without much career progression (though he enjoyed most of it). He was lucky to find a semi-academic job at the end; most don't.
Materials Engineering - Colin

Background
Entering contract research work with a B.Eng. and M.Phil. in Materials Engineering was a means to an end as I wanted to stay in employment whilst writing up my Ph.D. I also wanted to avoid explaining gaps in my C.V. at some future date when attending interviews. I was free to plan and organise my work and become involved in extra-curricular activities where, if I am honest most of the transferable skills, particularly my interpersonal skills, were developed. The research work provided brilliant C.V. material, but was unrealistic and sheltered me from the real world.

My prospects for progressing were limited as I had no interest in pursuing a lectureship and my only motivation was the pay rise each year. I started searching the job advertisements, but was just dabbling with no real focus. At the same time I had several (about 4 or 5 in all) appointments with an adviser from the Careers Centre to sort out my C.V. Shortly after this, I met someone from the recruitment section at the University's Careers Centre who also assessed my C.V. and helped me to focus on what I wanted to achieve. I set myself a target date to leave that summer.

One of several interviews I had was with an automotive engineering company (initial contact was made by the Career Centre's recruitment section), which represented a significant change from my previous qualifications and experience. However, my communication skills helped me get the job as they were interested in my potential and me as a person as well as what I could already do.

Transferable skills development
The main skills I developed in contract research and my extra-curricular activity include:
- Planning and organising - Making effective use of available resources, providing relevant information to, and monitoring the progress of others. Developing contingency plans and agreeing changes with others. Able to work unsupervised.
- Interpersonal skills - Leading, motivating and co-operating with others. Listening and giving constructive feedback. Building and developing relationships with others. Support and encourage others to achieve goals and objectives. Resolving difficult situations that require tact and diplomacy.
- Oral and written communication - Illustrating complex points to help understanding and conveying enthusiasm and interest. Being assertive but not aggressive and encouraging involvement of others.

I use all of these skills in my job as well as needing to develop the following:
- Technical problem solving - Specifically related to the automotive industry and the specific business specialism. Analysing, evaluating and assessing relevant data and considering alternative solutions and strategies before making independent judgements and conclusions.
- Communication - Presenting complex data and information in a format and way that others can understand and can act on.

Messages
I believe it is vital to focus on what you want and to plan how to get it. I worked hard on my interview technique and also attended a one-day course run by the University's
Career Centre on how to build a C.V. and interview skills. For me, the best part of the course was the video role-play of a job interview, which was played back for discussion. I would advise everyone to contact his or her University Careers Centre for help and guidance on how to succeed in finding employment.
Materials Engineering - Tom

Background
I started as a contract research worker in the electrical engineering department of the University where I gained a first and a Ph.D. in Chemistry. I worked on various projects for the next ten years, had research papers published, supervised undergraduate projects, represented the University at functions, made presentations at national and international conferences, and set the groundwork for new research proposals. I also worked as an external consultant and helped a client patent an idea that I had developed.

My last contract research position was in materials engineering which gave me more responsibility and the opportunity to work with and supervise Ph.D. students. My personal circumstances changed and, aware that I was becoming too institutionalised and my career development was limited to available funding with no job security, I decided to get out and look for a specialised industrial role based in South Wales.

I let it be known generally that I was looking for a move and eventually a company needing specific expertise to strengthen a historically weak department that determined the potential corrosive nature of their products approached me. At my interview the questions were designed to determine my level of knowledge and expertise in that specific area.

Transferable Skills Development
The main skills that I developed in my contract research role include:
- Communication - Particularly outlining aims and objectives, using short words and sentences and presenting data in a way that can be understood by all.
- Decision making - Taking risks and making decisions based on limited amount of information.
- Planning and organising - Meeting deadlines targets goals and objectives.
- Levels of problem solving - Demonstrating flexibility and versatility when solving problems.

The key skills that I have had to develop in my new role are:
- Communication - Encouraging involvement through asking questions, discussion and summarising to test understanding.
- Technical problem solving - Specifically related to the type of industrial and business specialism.
- Teamworking - Working with people in a teaching and advisory role. Encouraging and supporting others when they feel low and reconciling individuals to create mutual respect
- Project management - Managing people directly and the range of skills associated with planning and organising the activities of others.

Messages
Try to gain maximum exposure through contributing to meetings, conferences and seminars. Identify your weaker skills and discuss with your supervisor or mentor how to create suitable situations and opportunities to develop them. Take every opportunity to develop your skills as a professional approach to self-development will always be recognised and rewarded by any prospective future employer.
Mechanical Engineering - Daniel

Route into HE
Daniel had a mixed industrial/academic background in shipbuilding/marine fields. He did an industrial apprenticeship/ONC and HNC (ONC/HNC Mechanical Engineering) and HND Naval Architecture, then gained design experience. Next he read for a full time degree leading to B.Eng. Class 1 in Naval Architecture. This led on to a Ph.D. in Engineering. His qualification of Chartered Engineer (C.Eng) came with further industrial experience and project management/commercial experience.

Route into Contract Research
Daniel responded to an advertised post as well as using personal contacts within University and a formal interview led to an offer. Six years as a contract researcher followed as a Research Associate and later as a Senior Research Associate at a research centre for urban and regional development in a northern redbrick university.

Nature and range of research work
Daniel was part of the research centre's Innovation Group. His interests/work included: Engineering design and product development; Mechanical Engineering/Capital Goods industries. It included interview surveys, case studies, benchmarking company processes and practices.

Likes about Contract Research
- Self managed.
- Working in areas of personal interest.
- Opportunity, at an early stage in career, to interact at a senior level in industry and academia.

Dislikes about Contract Research
- Insecurity of employment - consequences of not seeing renewal of contracts can be high.
- Politics and self interest amongst senior academics.
- Academics/academia can be a bit insular/inward looking.
- Insufficient focus on value of results.
- Lots of stress. This probably reflects the fact that in industry there is a greater degree of influence on events. Contract researchers often 'carry the can' when things don't work out and are often in a limited position when it comes to influencing research directions, proposal preparation and the expediency with which they are done.
- Insufficient team work and empowerment.

Exploration of Options and Sources
Daniel sourced possibilities widely, using the press, journals and, especially, building close and specific relationships with employment agencies, notably those equipped to find people with his skills and qualifications the right type of post. He selected agencies afar finding out about them and what they could offer. He worked on his C.V. to ensure that it reflected what he could offer and would be immediately attractive to prospective employers, whom he'd be interested in working with. He found he had to battle against the academic badge because some employers assumed they would not be able to meet his expectations for stimulation and fulfilment, after being in an academic environment. Despite unsuitable leads and frustrations and
disappointments, Daniel stayed positive and gave himself proper breaks to relieve the tension and freshen himself and keep fit. Eventually, his luck changed and he found satisfactory employment as a project director in a medium-sized engineering company.

**Messages for contract researchers**

- Be aware of things about your situation which are causing you concern at a personal level; list them and see whether they are fundamental to your current and future position.
- Take things into your own hands, if contract renewal or length of contract is a burning and distracting issue.
- Think about your career - get everything into perspective.
- Think about you - what have you to offer, outside your technical competence? How can you prove you are adaptable, communicative, responsive, strategic, analytical, competitive, self managed etc.
- Look for sources of help - careers advice; friends/family; mentor; trainers for other things etc.
- Look at your CV and how likely it is to impress people you'd want to impress - what will prospective employers be seeking evidence of in your recent past? What is important to your present employer but may be just the opposite to a prospective employer - so needs to be played down?
- Spend time on applications to match what you are being told and not told - the organisation is likely to be looking for.
- Tailor each application.
- Apply - don't just send off a C.V. Tell them, in a well thought out and well presented letter/application form how you match their requirements.
- Spend time preparing for interviews. Try to anticipate, from information you have, how they are likely to frame questions.
- Prepare, each time, your questions for them.
- Spend a lot of time, on your own and with others who can help, trying to anticipate how prospective employers might (mis)perceive your current situation and so not pursue an application, if you highlight your current position inappropriately (some employers may assume a high powered and glamorous or very varied life as a researcher, if you travel, for example, or if you spend a lot of time with managers from a range of companies).
- Be open and alert to approaches/opportunities which are unexpected, from within your
- Be prepared for interviews at short notice - have an interview 'vision' and a method ready for preparing quickly and efficiently, in case it is necessary. Be ready to respond quickly and smartly.
- Maintain and extend your network, regardless of other pressures - it is critical.
- Be pragmatic - be clear what that means you will be thinking and feeling and develop it - life is not always fair.
- Be focused and do not allow your feelings to distract you (for long).
- Be very broad in your search for possible opportunities.
- Be actively selective in using agencies - make sure they have the competence to help you by asking questions which will tell you if they understand your hoped-for line of work and which employers they are likely to think appropriate.
- Build relationships with named individuals in agencies by talking to them frequently and about specific things - such as your preferences for duties, level of responsibility, relevant experience etc.
· Apply for everything which looks as if you could use your specific technical and/or transferable skills.
· Be very aware of your stress levels and make sure you have stress busters which you use, regularly. Whatever you like doing and which takes your mind off pressures, must be fitted in to your schedule.
The Competences displayed by Contract Research Staff who make a successful transition from one career to another

1. COMMUNICATION

1.1 Making an impact
- writes to provide evidence of suitability
- writes concisely and unambiguously, with a variety of layouts to help the reader
- presents self effectively in interviews and presentations with the intention of demonstrating strengths for the post
- asks questions to ensure the post and organisation are appropriate for the candidate
- articulates constraints (such as geographical limitations) effectively

1.2 Networking effectively
- networks with people who can influence
- uses a wide range of sources of information, both print and electronic
- builds relationships with named people in careers services or recruitment agencies
- asks questions of careers/recruitment staff to ensure that they understand what is sought and what will be suitable
- scans the environment by asking questions, visiting appropriate web sites and listening to people who might have an idea about the future

1.3. Persuading
- uses well reasoned arguments in applications, interviews and presentations
- is thoroughly prepared for application and interview - having researched the organisation and its environment and being fully self aware
- provides a range of examples of achievements which used relevant key skills

2. COGNITIVE

2.1 Positive/analytical thinking and use of judgement
- positive thinker, when things go wrong, looking forward and putting effort into next attempt
- sees potential in things which are not immediately obviously suitable
- uses judgement to assess the suitability of a post in relation to key skills, preferences and potential
- analytical thinker in identifying own strengths, key skills from experience in the present and previous positions and relating them to requirements of new posts
- makes timely decisions to take action (or not)

2.2 Lateral/creative/conceptual thinking
- lateral thinker, in looking far outside the expected posts in seeking a change - systematically assembles and presents relevant data about self and links it to qualities required for posts
- makes connections between unrelated fields of work and the application of key skills
- innovative in seeking posts and presenting oneself as a candidate
- uses initiative to make self known to people who can help

2.3 Political/Collaborative thinking
- strategic thinker, planning the 'campaign' for finding a new career
· understands the political implications of situations and events by being sensitive to the environment in which an organisation is operating and to interview questions or answers to candidate's questions
· collaborates with colleagues, friends and advisers who can give advice or feedback to help the process of changing career

3. SELF DEVELOPMENT

· undertakes voluntary work/work shadowing to get experience to help in decision making
· uses mentors to support transition
· gets additional qualifications to help transition
· has an ongoing personal development plan which is regularly updated

4. SELF MANAGEMENT

4.1 Positive/enthusiastic
· realistic about how long things will take and expectations
· has energy
· is enthusiastic - talks with passion/sees a positive side to everything/does things does with good spirit even when they are not preferred tasks
· responsible - works to standards expected/meets deadlines/has pride in work and self

4.2 Persistence/stamina
· persistent in making applications despite disappointments
· stamina to keep making consistently high quality applications and attend and make an impression at interviews whilst still maintaining standards in current duties and responsibilities

4.3 Flexible/open-minded
· flexible, in listening to feedback which requires action not previously thought of and in applying for posts which had not appeared appropriate formerly
· open minded in applying for a range of posts which require key skills but will need a lot of new learning as well
· inquisitive about what the world outside academia has to offer
· does not dismiss anything

4.4 Self confident and self controlled
· talks objectively about strengths, needs for development and achievements - with evidence
· self aware - has a list of everything to offer an employer, backed by evidence for previous performance (at work or elsewhere)
· objective - looking at things as they are - without bias from past experience
· adaptable, being willing to try new things which are necessary to progress in the direction required to fit a career plan
· assertive
· self controlled when facing anger, disappointment, frustration and able to vent these emotions quickly and then move forward positively
· has a clear vision for self
· insightful - knows how to build a positive reputation
5. DRIVE TO ACHIEVE

- immerses self in finding knowledge about new career field
- proactive in seeking new opportunities
- uses external resources to help achieve goals
- pays attention to detail