Research statements for lectureships

Liz Simmonds, Postdoc Careers Adviser
Today’s session

- A focus on research statements for Lectureship positions in UK
- Assumes you have an idea…
- Essential content of a research statement
  - Context
  - Track record
  - Future plans
- Prompt questions to get you started
- Structure, format & style
- Further sources of support
Delivering your own work – not someone else’s

Developing a long-term vision

High impact – what does impact mean?

Research Excellence

You are using the research statement to convey:
That you are making an impact in your field.
That you have coherent research plans for the future.
That you have the potential to become a future research leader.
That you will be an asset to your chosen institution.
Setting the context

Introduce your research area concisely (and potentially quite broadly)

Sell! You are pitching your research against other unrelated areas

Key questions:
• What are the big issues in your field?
• What is the most important question you want to address?
• Why is your research proposal important and timely?
• How will your proposed research impact on important issues in the field?
• How will your research impact on wider society?

Tip: Don’t forget that impact can be both academic (progressing the field) and more broad (applications/societal/economic).
My research approach has been both data-driven, hunting for clues constraining the deep Earth; and forward-modelling, predicting the possibilities and limitations of seismic data based on recent results in mineral physics and geodynamics.

My research interests lie in the improvement of storage requirements of cold-chain biologicals and how this affects the ways we make use of these products. I am addressing the challenges associated with emerging regenerative medicines and blood products. Supply chains cannot be developed if there is no standardised and appropriate way to store biologicals in adverse conditions. Health care should not be limited only to countries with temperate climates and good infrastructure. Even something as ubiquitous as blood is limited in terms of its use owing to the need of cold storage and relatively short shelf life.
Your track record

Demonstrate the impact you have made so far in your career.

Convince them you have the ability to deliver your proposed research.

Key points to include:
• The main outcomes of your research from PhD onwards and their impact on the field
• Noteable breakthroughs, major publications, prizes/awards, invited talks
• Any funding you have personally secured
• Collaborations you have initiated
• Other evidence of an emerging independent research programme and/or leadership potential
This work for the most part has been led by my ideas, and has yielded 7 papers in leading international journals in the last 2 years. In particular, my work on bimolecular recombination is likely to have a profound impact as it explains for a wide range of phenomena in photovoltaic, light-emitting diode and field-effect transistor structures.

My experimental research has not only quantified the pre-stall increase in irregularity in a compressor, but has also led to the positive identification of a new form of disturbance. The existence of some sort of flow disturbance underlying the change in tone has been suggested in the past, but until now, no such disturbance has been positively identified. I presented the work at the American Society of Mechanical Engineers' conference (ASME Turbo Expo) in Vancouver in June 2011 where it won a best paper award.

In 2010 I was the programme chair and local organiser for the international Eurohaptics conference held at the University of Warwick. This role involved co-ordinating the submission and review process, securing industry sponsorship, and soliciting input from recognised experts as keynote speakers. The conference was very successful and has gone on to form part of the IEEE accredited “World Haptics” series of conferences, as well as allowing me to make multiple international contacts in the research field.

Earlier this year, an idea to solve challenges faced in the tissue engineering of hollow structures through the magnetic patterning of cells put me on the winning team of EPSRCs Dragon’s Den style research funding competition. And only few weeks ago, a collaborative partnership with a surgeon at the clinical school in Addenbrookes’ Hospital led to the awarding of a Confidence in Concepts grant for improving cryopreservation of human haematopoeietic stem cells and pancreatic islets, for which research work will commence in January 2015.
Your future plans

Long-term vision; concrete, fundable plans

Key questions
• If you had a research group, what would be the focus?
• What do you want to be known for in 5/10 years’ time?
• Do you have a vision for where your field is going?
• How do your ideas fit in?
• What are your short, medium and long-term goals?
• How does your approach differ from competitors?
• Where would you seek funding for your ideas? Why would they be interested?
• What would success look like in 5/10 years?
They want: Money, papers, impact (reputation)

Department strategy – to fill gaps or build strengths?

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<th>Key questions</th>
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<td>How will your research enhance the department’s reputation?</td>
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<td>How does your research fit with what is already happening in the department?</td>
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<td>With whom could you collaborate – be specific</td>
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• **If you had a research group, what would be the focus?**

‘I have used the freedom granted to me by my Research Fellowship to branch out into tidal power generation – a comparatively new area of research for the Whittle Laboratory.’

• **Do you have a vision for where your field is going? How do your ideas fit in?**

‘…in which field there are many interesting fluid mechanics problems. Accurate turbulence measurements are also vital to the success of the tidal power industry, and both Alstom and the European Centre for Marine Energy (EMEC) have expressed an interest in working with me…’

• **Where would you seek funding for your ideas? Why would they be interested?**

‘I plan to continue building the tidal group into a world centre for hydrodynamics research, and hope to supplement funding from Alstom and future SUPERGEN calls with money from an EPSRC First Grant.’
• **What are your short, medium and long-term goals?**
Short term/specific: ‘I would like to set up a PhD project to bring together the test data from the different Trent engines and use this alongside CFD and low-order modelling…’

Longer term/visionary: ‘Further into the future, the framework and collaborations developed here can be extended to many aspects of compressor design.’

• **How will your research enhance the department’s reputation?**
• **How does your research fit with what is already happening in the department?**
• **With whom could you collaborate – be specific**

‘This link is of great strategic importance to future research by at both universities, and other academics (Prof. Rich Carter and Dr Graham Williams) have already expressed an interest in undertaking projects at Purdue.’

‘The Whittle Laboratory’s rapid prototyping and low-TRL facilities, combined with the higher-TRL facility at Purdue, will shorten the cycle from design idea to engine prototype.’
Hints on structure & style

- Stick to the brief and the page/word limit
- Write actively and engagingly – not like a scientific paper
- Make an impact early on
- Consider an introduction rather than going straight in to past research
- Don’t bury key achievements in scene-setting/context
- Be explicit – the reader doesn’t want to work too hard
- A good research proposal should excite someone from any discipline.
Language and style

Simplify language and sentences – not concepts

Imagine (or practice) explaining it to someone else (preferably not in the field).

What style do you use?

What are the important points you’re trying to convey?

What detail do they need to know in order to understand these points?
Powerful phrases (NOT grandiose claims)

- The proposed project seeks to **open a new research front** within the field...

- Outputs from the project will be a **complete understanding of the properties of these** new objects and a **road map charting the next steps for research in the field**.

- An **innovative and emerging** materials science led approach is now required to understand the factors at play limiting xxx, thus opening the door to realising their functional potential. ... This **proposal strikes at the heart of all these issues** ...

- Our study will **provide decisive evidence on this debate** by proposing a **new methodology** for studying the impact of economic policies on public health, and in so doing **advancing an emerging new research tradition**...

- Paleomagnetism has played a pivotal role in developing our modern understanding of the Earth, and remains one of the primary tools used to study the structure and dynamics of the Earth and other planets...... Adopting **cutting-edge techniques from physics and materials science** ...

- Some of the most interesting and controversial periods of Earth’s history occur far beyond the current limits of our confidence in the paleomagnetic signals used to study them. xxx **will solve this problem by**...
Checklist

**Track record**

- Topic set in context
- Main research outcomes to date
- Papers, funding, prizes, awards, collaborations
- Showing independence and leadership potential

**Future plans**

- Short, medium, long-term research goals
- How they address the main issues in the field
- Uniqueness of your approach
- Potential for funding
- Fit with institution
Further support

- CVs and cover letters for PhDs and postdocs
- Academic interview skills guide
- US applications – ‘The Professor is in’
- Seek support from academic colleagues, mentors and your PI
- Appointments with Liz or Madelaine pdocphys@careers.cam.ac.uk