Fellowship Skills and Life after a Fellowship

Gert Aarts
Congratulations on having obtained a fellowship!

- A bit about me
- Academic career
- Some experiences

Note that my remarks are mostly how I perceived things, experiences by other fellows will most likely differ (to greater or lesser extent)
A bit about me:

- Undergraduate and PhD: Utrecht University (NL) 1990-1999
- Postdoc Heidelberg University (DE) 1999-2001
- Postdoc Ohio State University (USA) 2001-2004
- PPARC/STFC Advanced Fellow (Swansea) 2004-2009

Research in theoretical particle physics:

- Quantum fields/QCD under extreme conditions
- Thermal and non-equilibrium field theory
- Lattice gauge theory
- . . .
Academic career

From fellow to lecturer to professor:

- Typically, no-one will ask you whether you would like a job or apply for promotion

- The initiative will have to come from you! This might be daunting at first

In my case:

another Advanced Fellow was paving the way. I followed in their tracks.
(and I have learnt along the way -- clearly a transferable skill)
Academic career

- In Swansea an ERF/URF is (used to be) converted into a lectureship immediately.

- If not: negotiate, preferably early on. How this works will depend on the institution, but remember that you bring research funding and salary for 5 years.

- 5 years is a long time.

- People with ‘power’ (Head of Dept, Head of Science, Pro-Vice-Chancellor, etc) may move on.

- Try to act quite quickly and have it formally agreed.
My academic career

✓ 2004-2007: lecturer (with immediate limited teaching)
✓ 2007-2009: senior lecturer (taking on more admin roles)
✓ 2009-2011: reader
✓ 2011-now: professor
✓ 2013-2015: Leverhulme Research fellow
✓ 2013-2018: Royal Society Wolfson Research Merit Award
✓ 2017-now: group leader of Particle Physics & Cosmology Theory Group
✓ 2019-now: Director of UKRI Centre for Doctoral Training in AI
The UKRI CDT in Artificial Intelligence, Machine Learning and Advanced Computing provides 4-year, fully funded PhD opportunities across the broad areas of particle physics and astronomy, biological and health, and mathematical and computer sciences. Training in AI, high-performance computing (HPC) and high-performance data analytics (HPDA) plays an essential role, as does engagement with external partners, which include large international companies, locally based start-ups and SMEs, and government and Research Council partners.

The CDT is built upon longstanding research and training collaborations between the universities of Aberystwyth, Bangor, Bristol, Cardiff and Swansea. In addition, Supercomputing Wales and the University Computing Academies provide bespoke support via Research Software Engineers and access to HPC facilities in a coordinated fashion.

Training

The programme consists of a substantial training component in the first year, including cohort-based training in AI and computational methods, to establish a common base. Engagement with our external partners is embedded throughout and includes short-term placements in Year 1 and 2 and a 6-month placement in Year 3/4. Transferable skills training is delivered via residential meetings, at our annual CDT conference, and in cooperation with the Alan Turing Institute. More details can be found on the Training page.

Research

Our doctoral training programme is constructed around three research themes:

- T1: data from large science facilities (particle physics, astronomy, cosmology)
- T2: biological, health and clinical sciences (medical imaging, electronic health records, bioinformatics)
- T3: novel mathematical, physical, and computer science approaches (data, hardware, software, algorithms)

While the themes are diverse as academic disciplines, in our CDT they are linked through the use of AI, machine learning and advanced computing methods. Therefore, a crucial role is played by knowledge exchange across themes via cohort training, joint supervision, peer-to-peer interaction and student mentoring. Research projects are embedded within one of the themes, with supervisory support across themes, to develop new synergies. More details can be found on the Research page.

Fully funded PhD positions

Fully funded PhD positions are available for students with a strong interest and aptitude in computational science and in one of our research themes. Positions are funded for 4 years, including the placements with the external partners. The CDT will recruit 5 cohorts, with a minimum of 11 PhD students per cohort. The first cohort will start in October 2019. For details on how to apply, see the Applications page.
How to develop yourself

- Find a mentor, i.e. someone you trust, is a friend, you can discuss anything with, including doubts and frustration

If you have secured/have the possibility to secure a permanent post:

- Teach and become part of the staff in the Department
- Take on minor admin roles

This will improve your life: you are no longer a postdoc, you are faculty!
How to develop yourself

- Do research
- Develop your own research programme: “future research leader”
- But also adapt to what is going on in the Department
- Be open-minded and flexible
- Opportunities to apply for grants, e.g. collaboratively, will increase your visibility and enhance your cv
- When you apply e.g. for promotion, the committee will look at the overall picture, including teaching, admin, research
- Your ERF grant is a major boost, but there are more boxes to tick
How to develop yourself

You will be invited/have the opportunity to:

- Review (publications, research proposals, fellowship proposals)
- Join panels
- Organise meetings and workshops
- Make decisions about other people, e.g. other researchers

All of these might feel slightly uncomfortable at first, but you will get used to it
My view on this

• I actually enjoy most of these and I hardly ever say no
• Hence I have organised approximately one meeting/year since 2012 (and indeed, the more often you do something, the easier it gets)
• Currently Chair of Scientific Board of ECT* in Trento (IT) and on the Joint Scientific Council of FAIR/GSI (DE) and on the Management Committee of COST-THOR network (EU)

But this is very personal, some people do not like these activities
My advice is not to say “no” too quickly
How to develop yourself

And in a slightly different vein:-

When you start teaching, become Academic Mentor, Head of Year, etc:

You will have to talk with students, in distress, with well-being issues, make decisions about suspensions, etc, which is something we are probably least prepared for

Again, this might be slightly uncomfortable at first
How to develop your research

- Someone once told me that a good researcher changes direction every 5-7 years

- Looking back, I would say that my experience is consistent with this

- But it happens by itself, i.e. quite naturally

An interesting thought to keep in the back of your mind...
That’s it!

✓ Enjoy the Fellowship

✓ Work on the next stage of your career

✓ Transition from postdoc to faculty member

✓ Do excellent science