



# ASA ECR WORKSHOP

Jobs outside Astronomy

# A job outside of Astronomy

Why? *Because success isn't necessarily a PhD = a lifetime employment as a research astronomer. It's what fits your vision of your life and makes you happy 😊*

What? *What on earth could I do?*

How would I move & how could I prepare?

What do we know ....?

Useful links & contacts

# What we will focus on...

- Being ready for a move
- What might you do...
  
- Adapting your
  - CV
  - “pitch” & outlook (academic -> commercial)
  - Interview skills
  - Networks
  - Presentation (your dress sense?!)

*be alert, not alarmed* – don't wait until you're at the end of a contract with no-where to go and then panic to get a job *anywhere*.

# Carole Jackson – there's another ppt!

UK high school -> commerce (City of London)  
& engineering (ICT management for EU base of major US SI: Litton)

After ~10 years @ work attended Cambridge University (Natural Science Hons & PhD)

-> Sydney Univ & RSAA – Research postdocs

-> CSIRO management of Technology projects & collaboration

Role as 'specialist consultant' and 'business development manager'

-> NOW – WAF Curtin University

Combining skills from all of the above.

# The landscape

- You are a postdoc – well done!
- PhD graduate numbers are increasing world-wide
- An international ‘market place’ – competition is fierce
- Post doctoral positions have **significantly** increased in numbers in last 15 years. Postdoctoral ‘x terms’ are now commonly 7 - 10 years before getting tenure. (average age ~40)
- **Number** of Faculty/Tenured jobs haven’t kept pace. In many cases they have reduced. Astronomy is popular & well-paid (yes, really).

# Planning your future career

- Have a near-term plan (1-3 years) and know where you want to be well ahead of that (5-10 years)
- Is academic life for you? What about national facility work?
- Nothing wrong with stepping beyond astronomy/academic life. Better if you do it purposefully. Don't be pushed or panic.
- Some options & what you have to offer...

# Example moves ...

- Stephen
- ICT; software, SPC's
- Research in Industry, Government agencies (not nec scientific – ASIO... )
- Teaching – all levels via Grad Dip Education (1 year)
- Policy, analytics, economics, patent attorney
- Banking – specialist analyses (derivatives trading)
- Communication; outreach, science centres, journalism, publications, freelance...

Things to consider –

Got to a specialist agency (need to ensure they are what they say they are!)

Retrain more broadly

Consider professional coaching (o/s of astronomy) – expensive but can be very valuable.

# Translating what you know

What good is an astronomy PhD anyway?



Pros +

Independent analysis and self-directed research skills

Probably good at math and ICT (high-end, SPC) – high end logic

Opportunity to develop communication skills

People will always ask you what you do.... And probably impressed that you are a 'Dr'

Cons -

Can make you over-qualified (i.e. scary!) for some positions

Does not always come with communication or interpersonal skills (blame Big Bang Theory!)

People will always ask you what you actually do/did.



# Adding to your skill base

Highly transferable skills –

- Grant writing – the art of selling a well-bounded project
- Paper writing – discipline, accuracy, logic.
- Tutoring/teaching/supervising
- Writing PR/communications articles, popular magazines
- Working in teams/collaborations
- Leading/first author work
- Reviewing, examining; setting tasks.
- Writing great job applications; interviewing
- Conferences – networking, presenting to large audiences
- Public outreach – being ‘the’ expert; representing your organisation, team, subject

.....

# Adding to your skill base early & often

Of the translatable skills –

- Grant writing – the art of selling a well-bounded project
- Paper writing – discipline, accuracy, logic.
- Tutoring/teaching/supervising

**Build these skills – University, practice, mentors, external courses.....**

- Working in teams/collaborations
- Leading/first author work
- Reviewing, examining; setting tasks.
- Writing great job applications; interviewing
- Conferences – networking, presenting to large audiences
- Public outreach – being ‘the’ expert; representing your organisation, team, subject

.....

# Adding to your skill base

- Professional skills you can & should acquire - don't muddle through
- Project management
- Financial management
- Management – People/HR/recruitment (direct reports/staff)
- Large team management (bottom up or top down!)
- You use many skills beyond what you've learnt at University.
- Build on these & your talents
- There are many external opportunities....

# Thinking about moving?

Networks – find them, exploit them

Some ideas: try an internship

Discuss possibilities – find a mentor in the industry

Build your CV – ‘test’ it...

Apply for a range of positions if you’re unsure

# Academic R&D -> Commerce

Appreciate a change in outlook –

Academic R&D is blue-sky

Commercial work (even if industry-based R&D) rarely is...

Be aware of the different demands; 2 separable cultures

Risk vs Reward

Be prepared to defend and to reframe work; being held to contract, time & \$'s

Projects in academic terms – can start any time, use as much (of your) time as required.... Etc;

In the 'real world' you will be billing your time to projects – and they have to have real money!

# The boomerang principle?

Can you possibly return to astronomical research?

Yes; but don't underestimate the challenges

(even Univ – CSIRO – Univ can be hard...)

If you have a gap in your research career –

- Ensure you have skills to bring significant other expertise to offset missing academic track record
- Network and be known
- look to work your way back slowly – get involved (intern? become adjunct, cost!)
- Find a senior ally or supporter (collaborator or director)

# CJ's useful bits & bobs

- A favorite list of ACTION words
- Have some \$ savings ...for travel & to tide you over
- Keep your CV bang up to date; include skill list in non-academic terms  
And achievements in terms which a layperson can understand.
- Go along to non-core seminars – explore the wider world
- Look at ASA jobs listing “adjacent” jobs – not all research.

# Useful guides & books

BOOKS – There's a whole genre e.g.

**Put Your Science to Work: The Take-Charge Career Guide for Scientists - Practical Advice, Proven Techniques (P.Fiske)**

**Alternative Careers in Science, Second Edition: Leaving the Ivory Tower (Scientific Survival Skills) (C Robbins-Roth)**

And spanning the more general to e.g.

**What colour is your parachute?**

(goto [AMAZON](#) & search)



# Useful links 1

On Campus? Generally University careers offices only deal up to PhD graduation, however they realize that they need to do more for early career researchers so it might be worth asking for help.

- Many university guides, e.g. (note US focussed) on line overview

<http://www.careereducation.columbia.edu/resources/tipsheets/non-academic-career-options-phds-sciences-engineering-and-mathematics>

Curtin: <http://www.careersfortomorrow.com.au/your-career/>

Self awareness, occupational awareness etc - all great advice

## Useful links 2

- VITAE – case studies & a lot more (UK)

<https://www.vitae.ac.uk/researcher-careers/researcher-career-stories>

- 

- AAS – career descriptions – in and out of astro.... there are many examples to inspire & provide possible contacts

<http://thesiswhisperer.com/2014/04/30/what-if-i-never-get-a-job/>

- 

- Career reflections/setting a deadline & how to assess whether to move...

<http://www.academiccareer.manchester.ac.uk/foryou/>

# Useful links 3

- 
- A summary of useful resources

<http://blogs.discovermagazine.com/cosmicvariance/2011/06/02/unsolicited-advice-non-academic-careers/#.U3CM417lefo>

- pros & cons either way

<http://scienceblogs.com/goodmath/2009/12/23/academia-vs-industry-an-update/>

- the postdoc challenge

- <http://www.the-scientist.com/?articles.view/articleNo/32445/title/Opinion-The-Postdoc-Challenge/>

- AAS career profiles; <http://aas.org/jobs/career-profiles>

## NETWORKS ---- online – LINKED IN

- AAS Non academic astronomers Network – names, roles etc
- <http://imis10.aas.org/career/nonacademic/bycareertype.cfm>

