

5. Career Development skills

some parts of this talk are borrowed from:

"Job Possibilities in astronomy"

Stéphane Blondin & Peter Shaver (ESO)

and papers in the references

Career development skills

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graph TD; A[Career development skills] --> B[What's the use of your PhD]; A --> C[Job hunting]; A --> D[Pearls of wisdom]; B --> E[Should I continue in research?]; C --> F[Interview]; F --> G[Efficiency];
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What's the use of your PhD

Should I continue in research?

Job hunting

Interview

Efficiency

Pearls of wisdom

What's your PhD good for?

- 3+ year work experience in research environment
- Certification of proficiency and autonomy in a given field of science
 - Critical for life long learning
- Certification of achievement
 - Your PhD is a personal achievement
- Use your PhD experience to decide if you want to stay in science
 - Do you like the profession?
 - Do you like the life your supervisor/postdocs are having?

Will I stay in science?

- You should be able to answer this question at the end of your PhD
 - Don't decide in the middle of your PhD "depression"
 - Nor just after your PhD defense
- Do you breath science?
- Do you sweat science?
- Do you have specific talents important to be a scientist?
- Do you enjoy the tension, collaboration, competition, beauty, mobility?
- Is your work respected? Was the jury impressed?
- Are aware of the commitments of a career in science?

- Do you feel that a career in science will develop you as a person?

- Do you feel confident about
 - you
 - your career
 - your choice

if (stay) jobhunt;
else jobhunt;

I will focus on scientific job hunting only – sorry!

Job hunting

- Requires time
- Requires knowledge of the system
- Requires preparation
- Requires a systematic approach

- Use you PhD skills to job hunt

- We will focus on post-docs
- National systems change a lot from country to country
 - Understand how the system works
 - Beware of mythology...

Astronomy job market 2001

Gibson, B.K., astro-ph/0301061

- Positions
 - No. of available Post-Doctoral Fellowships ~ 300
 - No. of astronomy/astrophysics Ph.D.'s awarded ~ 250 (50% US)
 - No. of permanent (US?) positions per year ~ 70
- Will you get a postdoc?
 - $\sim 3/4$ of Ph.-D. graduates will end up in a post-doc
 - $\sim 100\%$ including voluntary drop-outs
- Over-production of Ph. D.'s to permanent positions in astronomy (US?) ~ 3 (?)
- 60% of the positions have predefined area

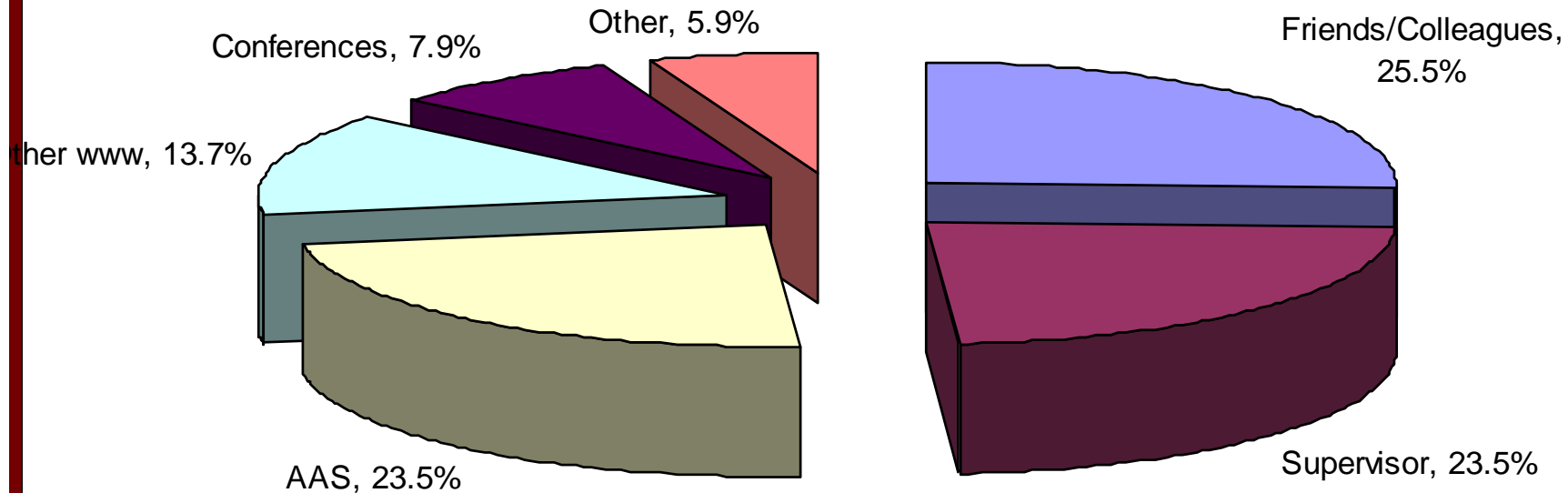
Astronomy job market 2001

- Recipe for success for Ph.D. (also applies to post-docs)
 - Investigate past history of school/supervisor
 - Know what's "Hot"
 - Get experience writing grants (and proposals)
 - Be sure to network
 - Avoid excessive observing/schools/confs
 - Be wary of undertaking post-docs in very large teams
 - Move institutes for your Ph-D and PDF, and be prepared to emigrate
 - Be aware of the competition (most folks have ~ 10 papers by the end of their first post-doc).

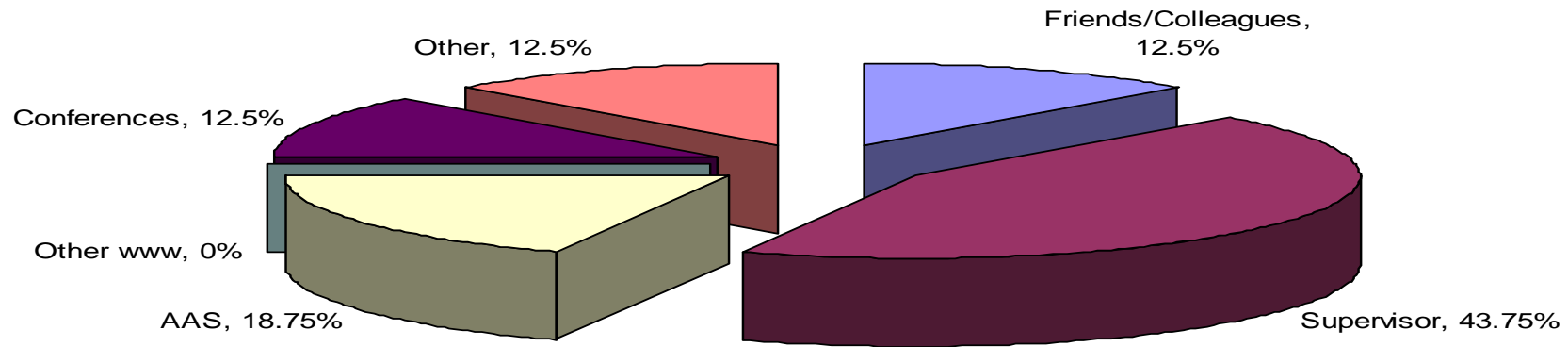
Job hunting: ESO survey

- Q: How did you get to (do you plan to) hear about your 1st post-doc (ESO survey)?

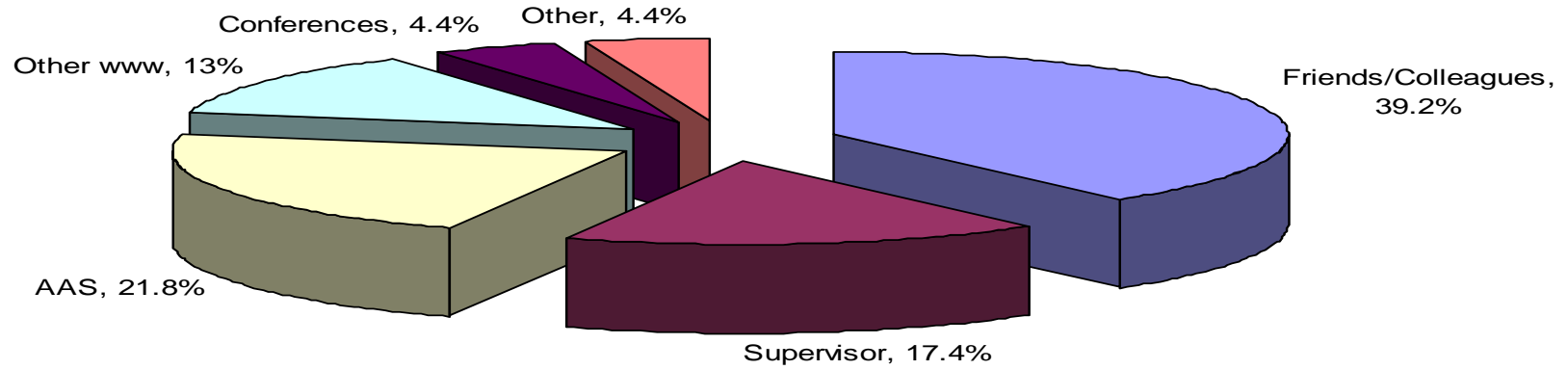
Staff+Fellows+Students (51)



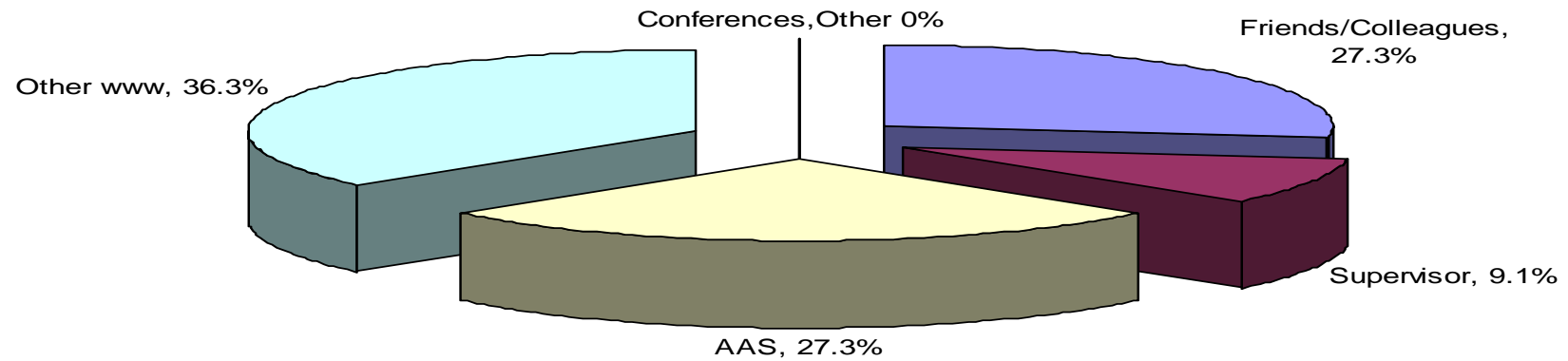
Staff only (16)



Fellows only (23)

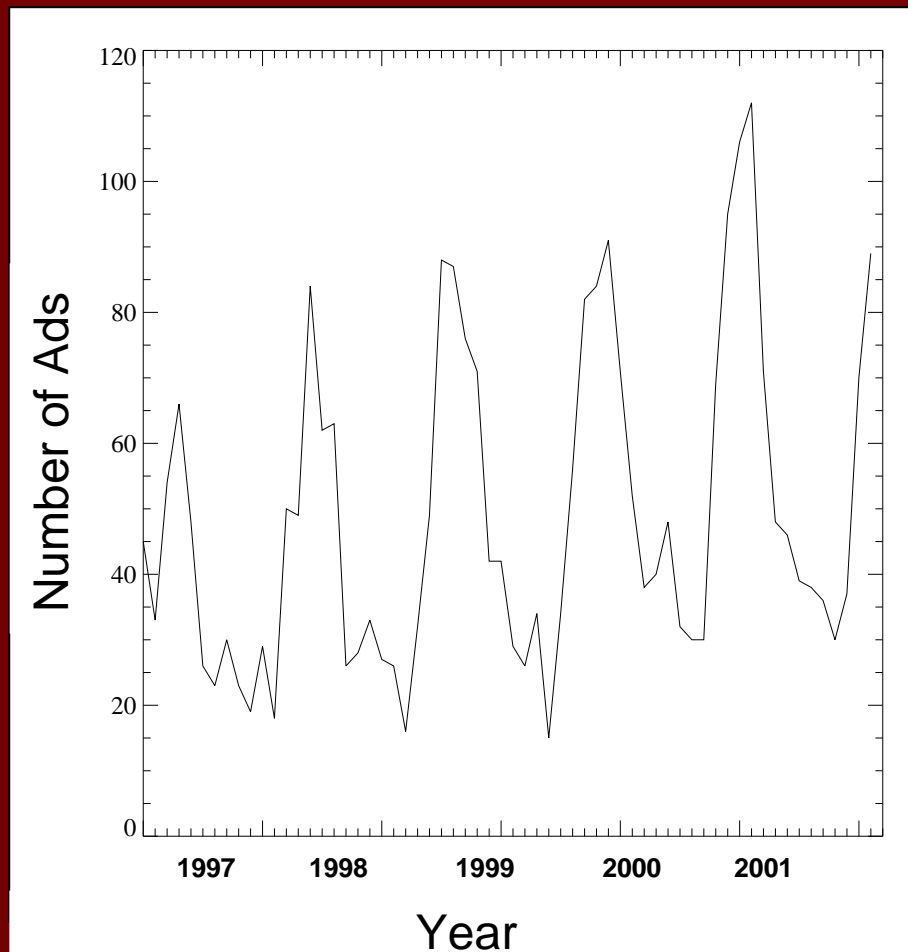


Students only (11)



Job hunting: AAS job register

- <http://members.aas.org/JobReg/Jobregister.cfm>



- ~550 ads yr-1
- Peak period in November(?)
- Check also
 - <http://www2.iap.fr/eas/>
 - http://www.ras.org.uk/html/ras_joblist.html

Job hunting: WWW

- **Astronomical Societies:**
 - American Astronomical Society (AAS): <http://members.aas.org/JobReg/Jobregister.cfm>
 - European Astronomical Society (EAS): <http://www2.iap.fr/eas/index.html>
 - Royal Astronomical Society (RAS): http://www.ras.org.uk/html/ras_joblist.html
- **Fellowship/Studentship Programmes:**
 - Chandra: http://cxc.harvard.edu/fellows/Chandra_fellow.2004.html
 - ESO: <http://www.eso.org/gen-fac/adm/pers/vacant/studentship2003.html> and <http://www.eso.org/gen-fac/adm/pers/vacant/fellows2003-4.html>
 - Marie-Curie: <http://www.mariecurie.org/> http://ec.europa.eu/research/fp6/mariecurie-actions/action/action_en.html
 - PPARC: <http://www.pparc.ac.uk/Rs/Fs/Fw/Fellindex.asp> and <http://www.pparc.ac.uk/Pg/Stu/studentships.asp>
 - STSci: http://www.stsci.edu/stsci/STSciI_Fellow.html
- **Specific Institutes/Observatories/Organisations:**
 - Cambridge University: <http://www.ast.cam.ac.uk/~sjs/postdocjobs.html>
 - Centre National de Recherche Scientifique (CNRS): <http://www.sg.cnrs.fr/espaces/personnels.htm>
 - European Southern Observatory (ESO): <http://www.eso.org/gen-fac/adm/pers/vacant/>
 - European Space Agency (ESA): <http://www.esa.int/hr/vn.htm>
 - Joint Astronomy Centre (JAC): <http://www.jach.hawaii.edu/JAClocal/admin/jobs/>
 - Mount Stromlo Observatory: http://www.mso.anu.edu.au/astronomy/astroweb/astro_jobs.html
 - Particle Physics and Astronomy Research Council (PPARC): <http://www.pparc.ac.uk/Ap/Rc/Vacant/Vacancies.asp>
 - UK Astronomy Technology Centre (ATC): <http://www.roe.ac.uk/atc/>
- **Science Magazines:**
 - Nature: <http://www.nature.com/naturejobs/>
 - New Scientist: <http://www.newscientistjobs.com/>
 - <http://sciencecareers.sciencemag.org/>
- **Astrophysics Jobs Rumor Mill** <http://www.hp-h.com/b/astromill/?p=home>

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- Selection process can be very slow...
- Only contact the department if you have another job offer and want to make a decision
- If you were not short-listed answer with a polite letter
- If you were short listed
 - The committee considers you highly and is very curious about you
 - There is a very high probability of being selected
 - If you are not selected you will learn a lot

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- Before You Go
 - Know as well as possible the department and how you can fit in it
 - Try to have an idea of salaries etc
- What to expect
 - The interview is the critical part of the selection process
 - You should be reimbursed your travel expenses – keep all receipts
 - Someone might meet you at the airport – don't dress like a vagabond
 - Arrive the day before – have some rest
 - Have your transparencies ready in 2 backups (hardcopy/memory stick)
 - Dressing...

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- During the interview
 - May last a couple of hours, one or more days
 - You will meet different people to different backgrounds
 - Greet each person with a firm handshake and meet their eyes
 - Are you able to explain them your work with different levels of detail?
 - What are your plans for future research?
 - Where you expect to receive funding for them?
- During the seminar
 - The seminar is the critical part of the interview
 - How are your presentation skills???

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- During the seminar
 - Have you practiced in front of people?

Table II: Suggested Structure for the Interview Seminar

Content	Time (min)	Target Audience	Detail Level / Purpose
Background	15	Everyone present	Your parents would understand it
Your approach	10	People in related fields	Show you know the field
Your results	10	People who work in your field	Show that you are the world expert on something
Summary	10	Everyone in the room	Relate your results to the big picture

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- Your place in the interview
 - You're are selling your self
 - You're also buying a position
 - How are the facilities? Ask for a laboratory tour.
 - What are the problems?
 - What is the tenure percentage?
 - Meet young untenured faculty and graduate students.
 - What is the start-up package?
 - If you are a post-doc ask for health/social insurance etc.

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- After the interview
 - Think carefully for a couple of days if you want or not the job
 - Send a thanking letter – if you don't want the job inform them in the letter
- If you get rejected
 - It is normal to feel bad
 - Think positively – you made it to the first division!
 - Writing a letter thanking them

Job interview

LANDING AN ACADEMIC JOB: Jonathan A. Dantzig

- If you get accepted
 - Never say immediately yes
 - Start by thanking
 - Check through a checklist to have an exact idea of what are you getting
 - How long will it take for a formal letter?
- If you have several offers
 - Inform them
 - How much time do you have to decide?
 - Decide rationally
 - include in the process your subjective impression
- Your partner needs employment?
 - Ask if there is any support on this but don't make it central for your interview

Efficiency

- Set your goals: short and long term
- Set and prioritize activities for reaching them
- Be action oriented
- Work habits
 - Office chatting – interruption
 - email/www dependency
 - Travel
 - Do administrative work when you are tired
 - Do research in your “prime time”
- Charges (includes teaching)
 - Do them well
 - But never use more time than the one allotted to them

Efficiency

- Give grad students control and responsibility
- Show respect for your students and administration
 - listen more and talk less
- Stay fairly close to your area of expertise
 - but don't continually repeat the same research
 - Before starting a new project ask, "Do I have the skills, time and energy to do a good job?"
- Before writing proposals do a cost/benefit analysis
- Handle stress
 - Environment
 - Perception: catastrophe syndrome, perfectionism
 - Relaxation techniques
- Discuss efficiency with your colleagues

Pearls of wisdom: burnout

- Burnout cycle is a runaway process
 - Overworking
 - Loss in efficiency
 - Loss in debit
 - Compensate by Over-overworking
 - Loss in efficiency
 - Loss in debit
 - Compensate by Over-overworking
 - ...
 - Depression, burnout
- Avoiding burnout
 - Personal life
 - Learn to say No

Pearls of wisdom: collaborators

- Your today's collaborators are your tomorrows competitors
- Your today's competitors are your tomorrow collaborators
- Respect them if you want to be respected
- But be aware of unethical behavior
 - protect yourself
 - do not become a paranoiac

Pearls of wisdom: papers

- Most papers from most astronomers are not first author papers
- Collaborate more
- Lead less but better

How to improve

- **What do PhDs do?**

UK GRAD Programme®/Graduate Prospects

[http://www.grad.ac.uk/cms/ShowPage/Home_page/Resources/What Do PhDs Do / p!eXeccLa](http://www.grad.ac.uk/cms/ShowPage/Home_page/Resources/What_Do_PhDs_Do_/p!eXeccLa)

- **Landing in an academic job**

by Jonathan A. Dantzig

<http://quattro.me.uiuc.edu/~jon/ACAJOB/>

- **Enhancing the Postdoctoral Experience for Scientists and Engineers,**

National Academies Press

<http://www.nap.edu/catalog/9831.html>

- **A Ph.D. Is Not Enough: A Guide to Survival in Science,**

by Peter J. Feibelman

- **Teaching Engineering**

by Phillip C. Wankat & Frank S. Oreovicz, Purdue University

https://engineering.purdue.edu/ChE/News_and_Events/Publications/teaching_engineering/index.html

Thank you!