

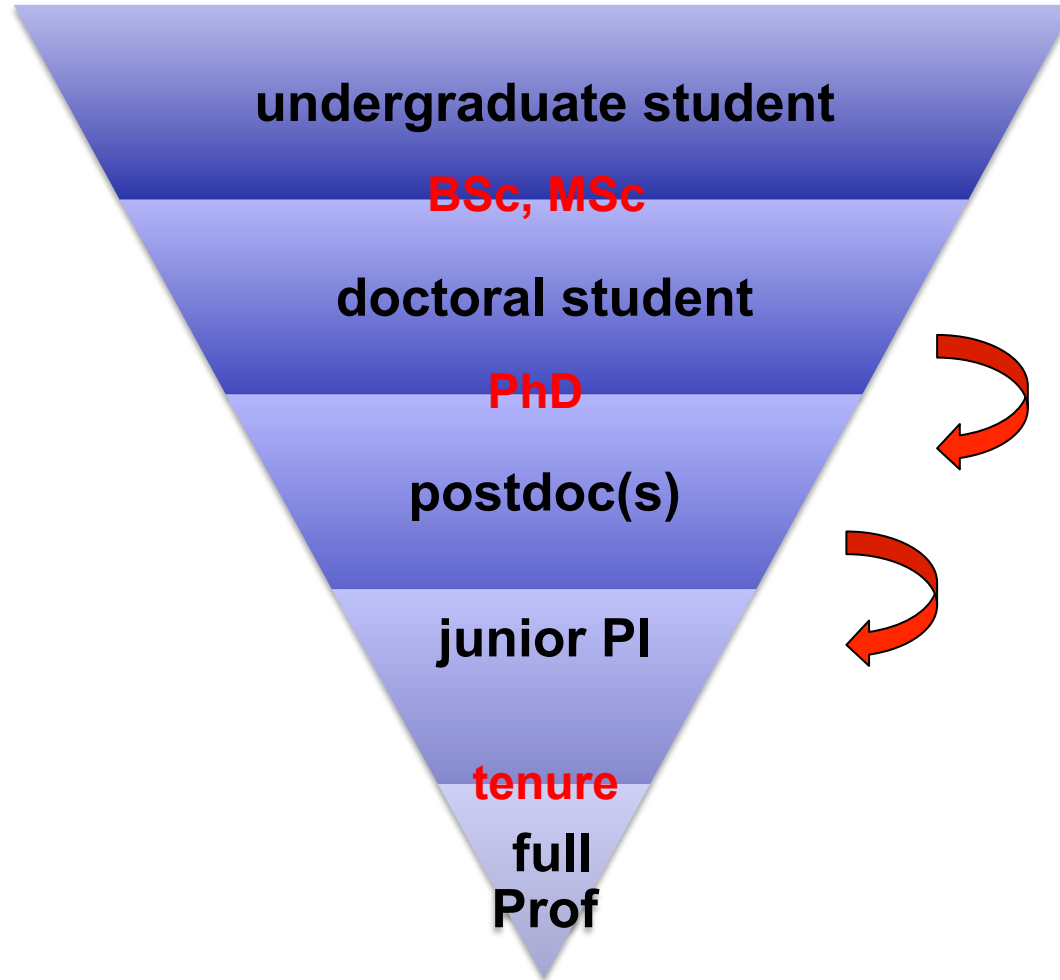
Transitions in a basic scientist's career: *Student to Postdoc & Postdoc to PI*

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Basic science career path



What this talk will cover...

- **finding a postdoc lab**
- **applying for PI positions**
- **what to do (and not to do) as a PhD student / postdoc aiming to become a PI**
- **examples / advice based on personal experience**

What this talk will NOT cover...

- **advice specific to clinician scientists**
- **careers outside academia**
- **how to run a lab & how to apply for grants**

Identifying postdoc labs

- **plan well ahead** (start ~ 2 years before graduation)
- **identify research topics that excite you**
 - it is possible to change area when starting a postdoc
 - what you do as a postdoc is likely to determine what you do as PI
- **identify geographical restrictions** (e.g. language, partner)
- **identify labs in your chosen research & geographical areas:**
 - read literature
 - speak to your supervisor & mentors
 - go to talks (WIMM, student lunches, conferences, etc.)
 - focus on the leading labs in the field

Applying for postdoc positions

- **do not wait for job advertisements** (top labs often don't advertise)
- **contact several PIs**
 - personalized email (with CV in attachment)
 1. *briefly summarize your CV*
 2. *why this lab?*
 3. *give one or two ideas for projects*
 4. *your timeframe*
 5. *fellowships*
 - meeting PIs at conferences

Postdoc interviews

- **read as many papers from the lab as you can**
- **seminar**
 - prepare & rehearse well
 - give a good and broad introduction
 - show you are technically skilled (controls, etc.)
 - talk about implications and future directions
- **questions for PI**
 - potential projects (make suggestions!)
 - overall direction of the lab & field
 - lab organization and management style
 - funding
- **questions for lab members**
 - projects
 - PI
 - current jobs of past lab members
 - ask for the “bad things”; if people don’t answer, ask again & again
 - accommodation & life outside the lab
- **visit the lab, institute and facilities**
- **visit the town**

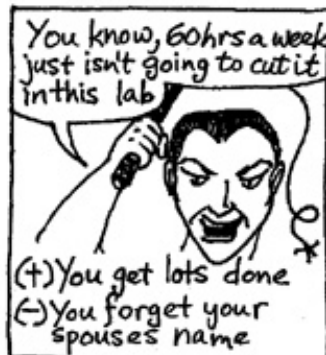
National Institutes of...

THE NINE TYPES OF PRINCIPAL INVESTIGATORS

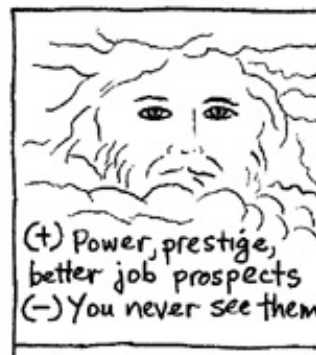
Big Talker



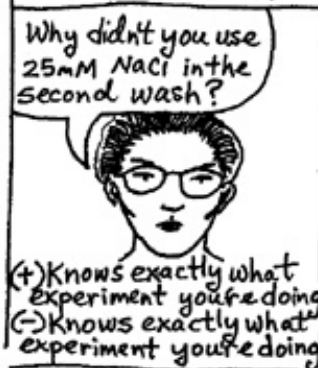
Slave Driver



Demi God



Control Freak



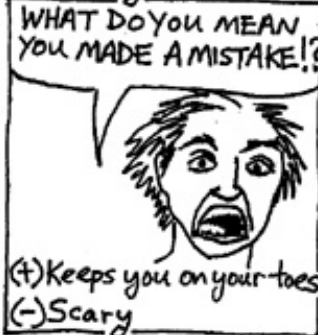
Science Wonk



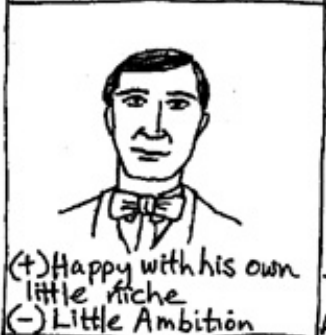
Laid-Back



Psycho



Small Town Grocer



Rising Star



What Pls look for...

- **evidence of scientific achievements**
 - publishing as a student is often essential to get into top labs
 - focus on how to get the data for a strong manuscript
 - avoid unnecessary & time-consuming distractions (e.g. courses you don't really need; activities that don't advance your research)
 - nobody will look at your thesis
- **where you did your PhD** (lab & institution)
- **references**
 - list three referees in your CV with email and telephone nb.
- **intellectual skills**
- **technical skills**
- **presentation skills**

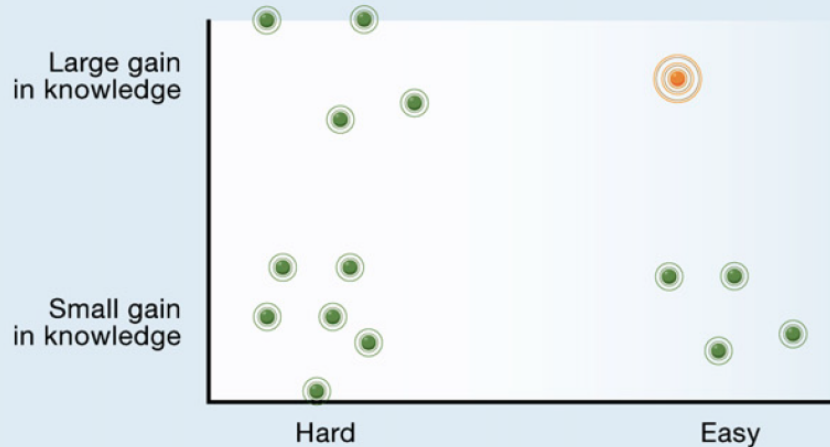
Starting a Postdoc

- **take a break and recharge your batteries**
- **take time to find accommodation and sort out your life**
- **apply for fellowships**
 - eligibility for many fellowships is restricted to one year post PhD
 - e.g. EMBO, HFSP, FEBS, Marie Curie, Sir Henry Wellcome
- **don't overestimate yourself**
 - regularly seek advice from PI & lab members
 - be prepared to do things differently

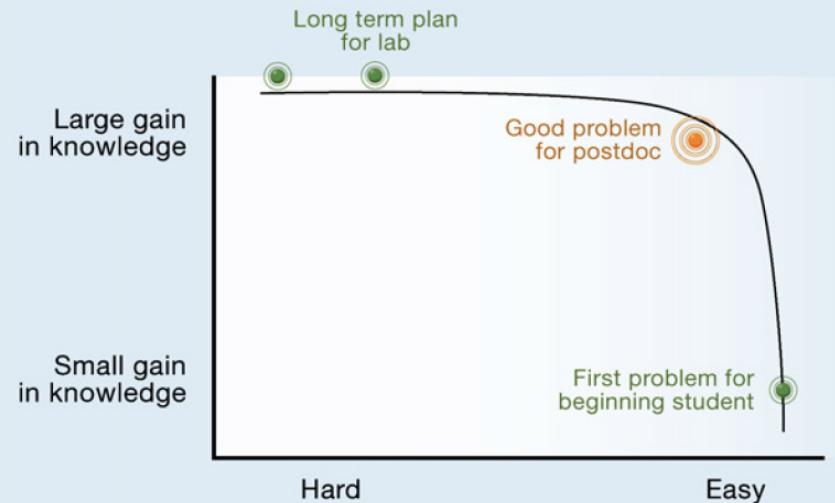
Finding good postdoc projects

- work on multiple projects and/or have side projects
- use multiple approaches in parallel to answer your research question

Problems can be ranked in terms of ease and interest



Choice of problems along the Pareto front moves with life stages of scientist



from Alon, Mol Cell 2009

find something that really excites you

Postdoc



focus on your research	activities (courses, etc.) that do not directly advance your science
collaborate with reliable and committed partners if likely to advance your project	rely too much on collaborations
join efforts for co-first authorships	spend too much time on other people's projects

teaching

multiple postdocs

Preparing for the next step...

- **plan well ahead** (start ~ 2-3 years in advance)
- **ask your PI to:**
 - **help with reviewing manuscripts & grants**
 - **give talks on his/her behalf**
 - **write a review together**
- **talk about your plans with your PI, with junior group leaders in your institute and mentors**
- **develop a research plan**
 - think about big & important questions
 - something that you are fascinated by and highly motivated to do
 - something that a group of 3-4 can achieve in 5 years
 - make a list of ideas for projects
 - write this up as a brief (half page) abstract

Finding the right institute for your future lab...

- **identify geographical restrictions** (e.g. language, partner)
- **identify institutes/departments/units in your chosen research & geographical areas:**
 - read literature
 - speak to your supervisor & mentors
 - go to conferences & talks, meet speakers
- **find out**
 - if key equipment and facilities are available (e.g. FACS, animal house, sequencing, mass spec, microscopy, etc.)
 - what the expertise of other labs in the unit is (Will your colleagues understand and be interested in what you do? How would you fit in? Potential collaborations?)
 - whether other junior PIs work in the unit and how they are funded

Applying for PI positions

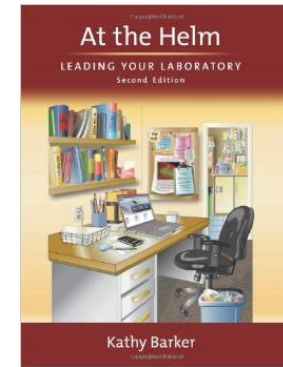
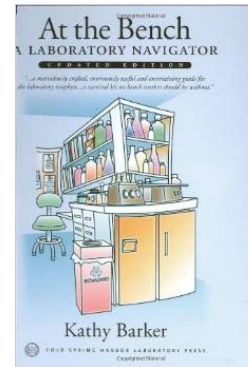
- **subscribe to Nature Jobs, Science Careers, etc.**
- **make sure people know you are looking for independent positions**
- **directly contact head of departments / unit directors**
 - CV
 - research plan
- **assessment criteria:**
 1. past research achievements (= publications)
 2. sound research plan that fits with the department's strategy
 3. evidence for success in raising money (e.g. fellowships)
 4. teaching experience

PI interviews

- **typical programme:**
 - research seminar (public)
 - chalk talk (private)
 - 1:1 meetings with head of department and other PIs
 - dinner
- **assessment criteria:**
 - quality of talk
 - vision & strength of research plan
 - being able to defend the research plan
 - being a colleague who would enrich the department
 - teaching experience

Resources

- **mentoring**
RDM scheme: <http://www.rdm.ox.ac.uk/rdm-mentoring-scheme>
- **WIMM website**
<http://www.imm.ox.ac.uk/wimm-post-doc-association>
- **At the Bench & At the Helm**



- **lab management & grant writing courses, e.g. EMBO & WIMM**
- **Yewdell, Nat Rev Mol Cell Biol 2008**
- **Alon, Mol Cell 2009**

ESSAY

How to succeed in science:
a concise guide for young biomedical
scientists. Part I: taking the plunge

Jonathan W. Yewdell

Cell
PRESS

Molecular Cell
Forum

How To Choose a Good Scientific Problem

Uri Alon^{1,*}

Why be a PI?

What I like about it:

- developing an independent & long-term research programme
- pushing the boundaries & exploring uncharted territory
- being part of the scientific community & building a network
- being exposed to lots of science & talking to lots of scientists
- travel (seminars & conferences)
- building, managing & working with a team

Thank you...

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