

# BUILDING A SUCCESSFUL CAREER IN SCIENCE

HOW TO APPLY & INTERVIEW FOR SCIENTIFIC POSITIONS

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# LEARNING OBJECTIVES

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- How to draft appealing CVs & convincing cover letters
- How to prepare for a job interview

# THE PROBLEM WITH THIS TOPIC

- Maths, Physics, Chemistry, Biology...  
...deal with evidence-based, objective facts
- “Soft” topics: No/few universal rules  
→ Uncertainty, subjectivity

**+ Cultural differences**



# YOUR APPLICATION

= First impression you make on a potential employer



Make sure it's a good impression

# YOUR APPLICATION SHOULD COMPRISE

- Cover letter / email
  - Who you are
  - Why you are interested in the position & lab
  - What relevant expertise & experience you have
- CV
  - Personal data
  - Positions held
  - Academic training & degrees
  - Any other relevant info / skills
  - References / referees



# KEY RULES FOR DRAFTING CONVINCING APPLICATIONS

- Make your cover letter & CV **visually appealing**
- **Target** them to the job
- Allocate space according to importance (= **relevance**) of info
- Keep them as **concise** as possible

# WHAT TO CONSIDER BEFORE APPLYING

What type of boss/organisation do you want to work for?

- Big name → Lots of resources, influence, experience & connections
- Junior group leader/start-up → Time for you, innovative ideas/area, enthusiasm

Check the track record of a potential boss

- Long-term: consistent record of good publications?
- Short-term: still publishing well?

Group embedded in an innovative & successful environment with good infrastructure?

- Other good groups to learn from, get help or collaborate with?
- Lively scientific atmosphere with lots of invited speakers, meetings, workshops etc.?
- Sufficient funding, equipment & other resources?

# ARGUABLY THE MOST IMPORTANT CONSIDERATION

- Work on a topic / project you care about with interesting & motivated people you like

# START BY APPLYING FOR JOBS YOU'RE NOT KEEN ON

## Why?

- Gives you experience
  - Writing good CVs & cover letters
  - Interviewing
  - How employers see you & how much you are worth to them
  - What is offered & what you can negotiate
- Security (when you already have an offer)
- Leverage when negotiating for the job you really want
  - Competing offers make you more attractive

# INCREASING YOUR LEVERAGE WHEN APPLYING/NEGOTIATING

Make sure you're (i) self-confident & (ii) in a strong position

1. Get experience in applying/negotiating
  - Start by applying for positions you're less interested in
  
2. Know what you need & want
  - Be able to explain why
  
3. Have a plan B
  - i. Alternative offer(s) → Always apply for more than 1 position
  - ii. Apply from a secure position

# INCREASING YOUR LEVERAGE WHEN APPLYING/NEGOTIATING

## 4. Find out what the employer needs

- Requires expertise in a given area
  - New group/institute that wants to grow fast or is restructuring
  - Has made a major investment/strategic decision in a particular area
  - Funding with a limited lifetime, specific eligibility criteria...
  - ...
- Allows you to identify & better present your strengths; leverage to negotiate
- Be concrete & direct when stating what you would bring to your new employer

## 5. Learn as much as you can about the constraints of the other side

- Often employers cannot negotiate certain aspects of an offer
- Offer range of ways they could sweeten the deal for you and be flexible

# IN A NUTSHELL...

- Your application is often the first impression you make  
→ Ensure it's a good one
- Cover letter & CV must be
  - Informative
  - Attractive
  - Targeted
- Research potential employers before applying



# THE CV

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- Cultural differences
- Information a CV should include
- How to make a CV appealing

# INFORMATION GIVEN IN YOUR CV MUST BE...

- Accurate & precise
- Well structured, e.g.
  - Concise clear headings
  - Table format: When → what
  - Reverse-chronological
- Consistent
  - Always the same info for all items
  - Always same formatting for identical/similar items
- Complete, i.e. no gaps
- Concise, i.e. the fewer words, the better
- Relevant to the position you're applying for

# YOUR CV SHOULD INCLUDE INFORMATION ON...

- **Personal data, incl.**
  - Full name & contact details
  - Maybe: Links to pages with additional information, e.g. LinkedIn, webpage...
  - (Nationality, birth date & city, photograph)
- **Positions held, incl.**
  - Institution(s)
  - When you worked there
  - Names of supervisors
  - Topics of projects worked on (also for BSc, MSc & PhD theses)
- **Academic training (high schools & university studies), incl.**
  - Institution(s)
  - When you studied there
  - Fields of study
  - Degrees, incl. when obtained & grades

# EXPLAIN WHAT MAY NOT BE OBVIOUS

## Grades of your degrees

E.g. in Germany

1. *summa cum laude* (“with highest honour”)
2. *magna cum laude* (“with great honour”)
3. *cum laude* (“with honour”) = lowest ~10% of graduates
4. *rite*

In The Netherlands

*cum laude* = top 5-10% of graduates

# LACK OF EXPLANATION IN AN ACTUAL CV

## **Achievement:-**

1. Selected on panel of 3 people delegates from INDIA for cancer research by global health, AUS (2014).
2. 5<sup>th</sup> rank from Maharashtra state in Maharashtra University of Health Science doctoral entrance exam (2010).
3. Awarded as Future Young Leader (2014) by MOSAICQUE Magazine.

Not clear what there achievements are, e.g.

- What is “cancer research by global health”?
- Ranked 5<sup>th</sup> of how many—5 or 5,000?
- What is “MOSAICQUE Magazine”—a students’ magazine at a local school or the most widely read weekly in all of India?

# LACK OF EXPLANATION IN AN ACTUAL CV

## Grants:-

1. Comparison of Post-licensure safety surveillance of Bivalent and Quadrivalent Human Papillomavirus vaccines in Healthy Women Rs. 4 lakh grant approved from B. J. Grant Medical Trust.

In India: lakh = 100,000 (rupees)

2. Comparison of Post-licensure safety surveillance of Bivalent and Quadrivalent Human Papillomavirus vaccines in Healthy Women Rs. 50,000 grant approved from Vikas Oberoi, Oberoi Reality Group.

Rupees? Official abbreviation: INR

## EXAMPLE OF A CV WHERE EXPLANATION WAS GIVEN

“I was awarded a scholarship of the German National Academic Foundation (*Studienstiftung*). This foundation supports students in Germany that stand out both academically and due to social commitment. It grants competitive scholarships to approximately 0.25% of the student population. Awards are made after a multi-stage selection process and are based on grades, specialized exams, letters of recommendation and interviews with staff and affiliates of the foundation.”

# YOUR CV SHOULD INCLUDE INFORMATION ON...

- Techniques & skills you have acquired
- Publications
  - Papers (original papers, reviews, book chapters)
  - Poster or oral presentations (name of event, when, where)
  - Patents
- Funding
  - Grants (for projects, travel...)
  - Fellowships
    - Funding body, funding granted, time period
- Distinctions you have received
  - Fellowships
  - Awards or prizes
- People who act as referees
  - Names
  - Contact details

# REAL-LIFE EXAMPLES OF IRRELEVANT INFO

I recruited a Grant Manager for the Institute of Molecular Biology

## Research statement

My main areas of research comprises computer modeling and simulations in nanostructured materials (zeolites), the understanding of complex systems at a molecular level using molecular simulations (Monte Carlo) with particular emphasis on phase equilibrium of model systems which exhibit liquid crystal phases. Another research line at the crossing between applied mathematics, statistical

→ 1½ page

## Publications

→ 2 pages

## Participation in International Conferences

→ 2½ pages

## Courses

School Psychology, Pedagogy, Methods of Mathematics Teaching, Methods of Physics Teaching, Pedagogical Practice of Mathematics and Physics

# ADDITIONAL INFO THAT **MAY** BE RELEVANT

- Work experience, e.g. vacation work / part-time jobs  
→ Be concrete about your tasks & responsibilities
- Presentations at conferences (oral or poster)  
Popular-scientific / other publications
- Fellowships, awards, prizes
- Fundraising
- Teaching & supervision
- Special training courses
- Scientific collaborations
- Consulting
- Outreach activities
- Time spent abroad
- Language skills
- Hobbies
- ...

# SHOULD YOU MENTION HOBBIES IN YOUR CV?

Example from an actual application for a PhD position:

*“I participate in a variety of hobbies, which include surfing the internet & reading.”*

Make sure that the info you include is either

- relevant to the position, or
- makes you stand out (in a positive way)



# DON'T CROWD YOUR CV & DILUTE KEY INFO

Include only

- (i) Info relevant to the position / employer
- (i) Key info that makes you stand out

Summarise

E.g. when you have a lot of publications:

- Give total number (+ key metrics, e.g. total citations, h-index...)
- List only the 5 most important ones



# KEEP YOUR CV SIMPLE & FORMAL

Study by BI Norwegian Business School, Oslo  
(*Eur J Work & Organisational Psychology*, Vol. 19, p. 221)

Professional recruiters presented with same CV in 3 different formats:

- (1) Conventional: formal layout on white paper
- (2) Formal layout on pastel paper
- (3) Very unconventional layout intended to stand out

(1) Was most successful, (3) the least in obtaining invites to interview

→ Make your CV stand out with a clean format & the info you provide

# MAKE YOUR CV ATTRACTIVE & EASY TO READ

Simple, clear layout

- Headings for different sections
  - Table format
  - Reverse-chronological order (newest on top; no gaps)
  - Don't crowd your CV:
    - As short as possible
    - Only relevant info
    - The fewer words, the better
  - Key words in bold
- Allows employer to quickly find info of interest to them

# AVOID “BUZZWORDS” IN YOUR CV & COVER LETTER

Words like team player, ambitious, highly motivated, people person...

- Heavily overused & may make your CV / letter appear empty
- Can actually be detrimental rather than help

You may be all of these things → but prove key characteristics with examples (“telling a story”) from your recent past

# STATEMENTS IN YOUR CV SHOULD BE SPECIFIC

## OBJECTIVES:

- To contribute effectively to the achievement of a set goal by making use of available resources to achieving the set goal.
- To work in a challenging environment, which offers opportunity for growth and development and also rewards creativity, initiative and superior performance, where honesty and integrity are norms.
- Most importantly, to carry out my responsibilities safely with zero accident level.

## Objective:-

I am an oncologist who is seeking a career position within an institution/ pharmaceutical company/ hospital. I am hard working and organized individual who does everything with a passion even under

# SKILLS LISTED IN CV MUST BE MEANINGFUL

## Skills

- Technical skills Windows, Word, Excel, Point. Office equipment (fax, modem, server, copiers),

## Other Skills and Activities

- Competent using technology (Microsoft office, RF scanning)
- Extensive cleaning experience (Closing a delicatessen, cleaning food slicers, keeping a clean work environment and laboratory work space, waste removal and documentation)

## ...and realistic

During my undergraduate studies, I have been exposed to many, if not all, of the laboratory practices that I could possibly encounter in my whole career

# RESEARCH THE INSTITUTION YOU'RE APPLYING TO

My earnest desire to continue further studies at IMB because it is one of the best and most reputed research institute having a long time record of academic excellence...

At the time, IMB was 6 years old.

# IN A NUTSHELL...

The info you give in your CV must be

- complete
- concise
- accurate
- well-structured
- relevant to the position



# THE COVER LETTER/EMAIL

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- Information a cover letter should include
- How to make a cover letter appealing

# PURPOSE OF THE COVER LETTER/EMAIL

## Self-advertisement

- Employer should get impression that you are...
  - Interesteded in the job
  - Interesting for the job
- Highlight only aspects of your education, work experience & personal qualities most relevant to the job
- *What can you offer to this employer?*

# THE COVER LETTER/EMAIL

No longer than 1 page

Should state:

- Your full name, address & other contact details
  - Who/what & where you currently are
  - For which position you're applying & why you are interested in this position, employer, type of work, line of research...
  - What relevant expertise, skills... you have & how you are planning to contribute to the project / lab / organisation
  - Any other information you consider relevant
  - Keywords, e.g. from ad (esp. when applying to companies)
- Emphasise that what you have & want matches what they seek

# THE STYLE OF YOUR APPLICATION

- Write in a clear & concise manner
- Neither too formal, nor too informal
- Confident (“sell” yourself), but not overbearing
- Support claims with evidence

# SUPPORT CLAIMS YOU MAKE WITH EVIDENCE



# THE STYLE OF YOUR APPLICATION

- Write in a clear & concise manner
- Neither too formal, nor too informal
- Confident (“sell” yourself), but not overbearing
- Support claims with evidence
- Be concrete in what you can offer
- Not longer than 1 page

# THE COVER LETTER/EMAIL

If you are applying to a top lab/institution

→ Make sure your application stands out:

- Targeted
- Concise

"I didn't have time to write a short letter,  
so I wrote a long one instead."

*Blaise Pascal*, French mathematician



# EXAMPLES FROM ACTUAL COVER LETTERS

**From:**

**Sent:** 09 September 2013 12:44:14 (UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna

**To:** Press IMB

**Subject:** postdoc position

Dear *Professor* Ralf Dahm

My name is \_\_\_\_\_, and I am very interested in becoming involved in your research team. I have got *PhD degree in molecular genetics*. I have reviewed your faculty profile and am interested in the work that you have done.

Now there is call for postdoc position full fund from \_\_\_\_\_ government and DAAD(Deutscher Akademischer Austausch Dienst ) here in \_\_\_\_\_ and there web site <http://www.daad.de/>.

To apply in this fellow ship they need German Professor as supervisor, I hope we can cooperate .

I attached my C.V and I look forward to hearing from you.

Thank you and all of best wishes

Sincerely,

# EXAMPLES FROM ACTUAL COVER LETTERS

## PHD STUDY

Sent: Do 17.10.2013 16:01

To: Dahm, Dr. Ralf

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Dear Dr.

I am , M.Sc. in biology/ Parasitology from University of  
I want to study in PhD. Degree in Biomolecular Sciences, in your university, Please give me  
more information.

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**Sincerely Yours**

# PROVIDE EXAMPLES THAT SUPPORT YOUR CLAIMS

I am a highly motivated individual with outstanding organisational and communication skills...

In parallel to my PhD (*done in a short time & with great success* → CV), I completed an MBA (graduating top of my class) and was one of three PhD student representatives for our graduate programme. As PhD rep, I organised the institute's first PhD symposium with 6 invited speakers and 137 participants. This event was fully funded via extramural funding I raised (€14,560).

# EXAMPLES FROM ACTUAL COVER LETTERS

## Applications for a PhD in Molecular Biology

“My interest in biology arose as a child when my parents bought me the book “Plant and Animal Encyclopedia”, which deeply impressed me and convinced me to study the beauty of Nature. My desire to explore biology grew in high school when I ...”

“I have always had burning desire to do cutting edge research.”

# EXAMPLES FROM ACTUAL COVER LETTERS

## Applications for a PhD in Molecular Biology

“Germany, its famous Oktoberfest and World War II history; it’s beautiful scenery, castles and literature has always fascinated me. I would love to be a part of its rich history, culture and lifestyle. IPP would not only make my dream come true but would also quench my desire of research and development and make a difference in people’s lives.”

# EXAMPLES FROM ACTUAL COVER LETTERS

## Applications for a PhD in Computational/Systems Biology

“In my opinion the future of biology is systems biology and synthetic biology. Richard Feynman once said: “What I cannot create I do not understand.” We don’t necessarily have to build life molecule by molecule in order to understand it, but model it. It’s hard to imagine that a whole mycoplasma cell now exists as a few thousands lines of matlab code. With this model, we can now embark on a whole new way of biological discovery...”

# WHAT IS SUSPICIOUS HERE?

## Reference:-

**1. Professor Dr.**

Head of Pharmacology (PhD. guide),

B. J. Govt. Medical College (B.J.M.C.) and Sassoon General Hospital,

Near  Railway Station,  - 411001, INDIA.

Mobile No. - 9922

Email -  @yahoo.com

**2. Professor Dr.**

Director of Haffkine Institute of Training, Research and Testing,

Parel,  - 400012, INDIA.

Mobile No. - 9821

Email -  @yahoo.com

**3. Professor Dr.**

Vice- Chancellor,  University of Health Science,

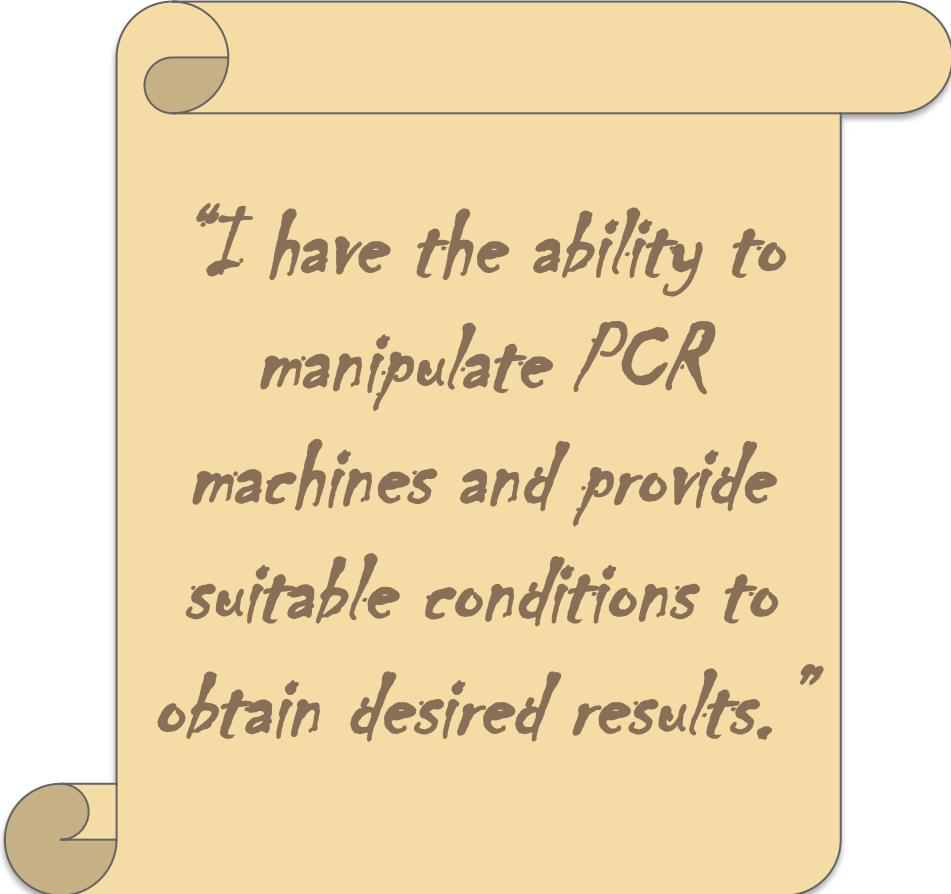
- 422004, INDIA

Mobile No. - 9371

Email -  @gmail.com

Taken from a real application

## AND ONE FINAL EXAMPLE...



*"I have the ability to  
manipulate PCR  
machines and provide  
suitable conditions to  
obtain desired results."*

# IN A NUTSHELL...

Your cover letter must convey that

- you are genuinely interested in the position
- you are well suited for the job
- have something important to offer

in a concise & appealing manner



# BRIEF YOUR REFERENCES...

... to make sure

- They know they might be contacted: By whom & for what position
- That the info they provide matches with what you state in your application, e.g.
  - When you worked with them
  - What project(s) you worked on
  - Your key achievements...
- That they emphasise relevant skills & experience

→ For letters of reference, maybe provide them with a draft to ensure:

- (i) It is correct
- (ii) It contains all the relevant information
- (iii) It is phrased appropriately

# EXAMPLES FROM REAL LETTERS OF REFERENCE

Ms [redacted] is showing all the signs of developing into a very promising research worker capable of performing at a high level on a PhD programme.

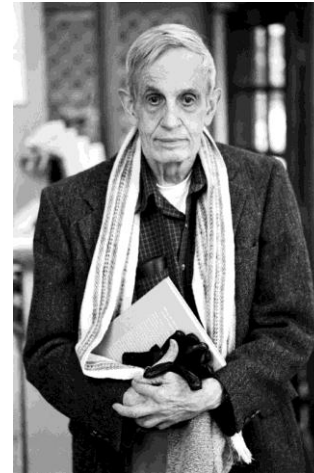
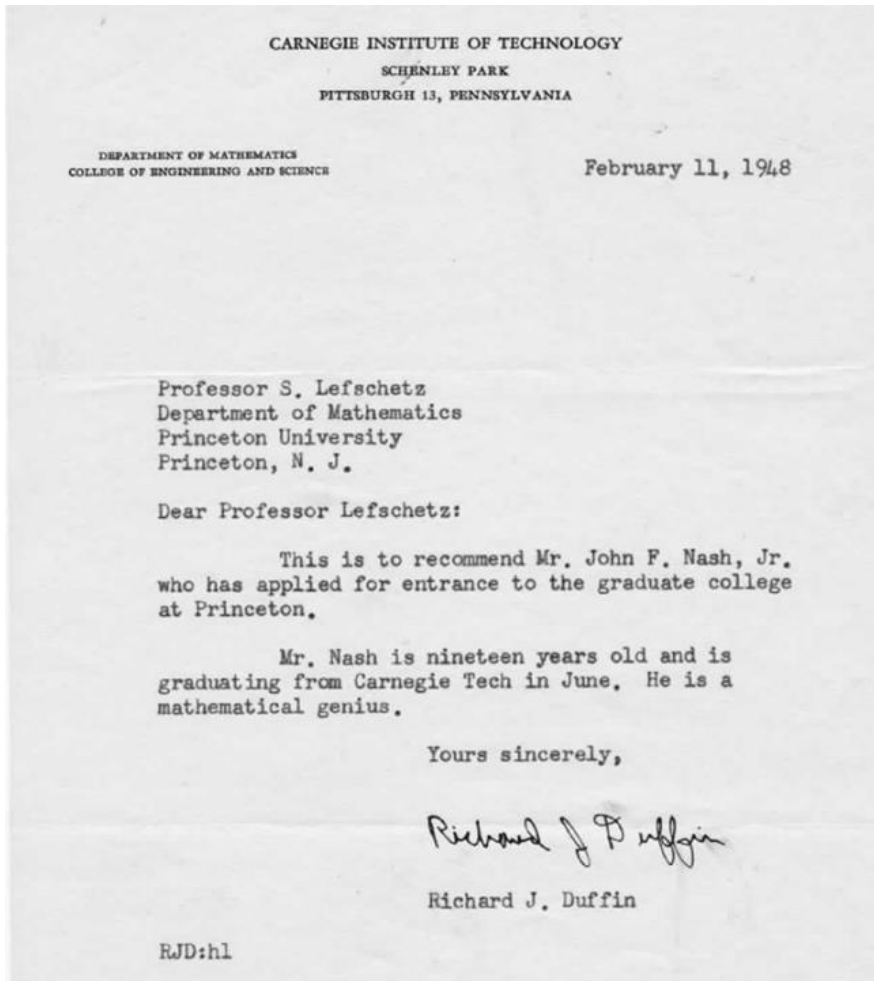
She integrates well with the other students and lab members, is happy and healthy, and I would be quite prepared to offer her a studentship in my lab should I have one on offer. It is a pleasure to have her on the course and I think that her application deserves close consideration.

Importantly, [redacted] is an extremely composed and warm person in the lab. She is always nice to people, smiling and very humble. I have never seen her having a bad day. She is also reflective and responsible, and she does not spend half the day drinking coffee and looking at her phone. She is working from the moment she enters the lab until she goes home.

The referees meant to provide positive assessments of the applicants.

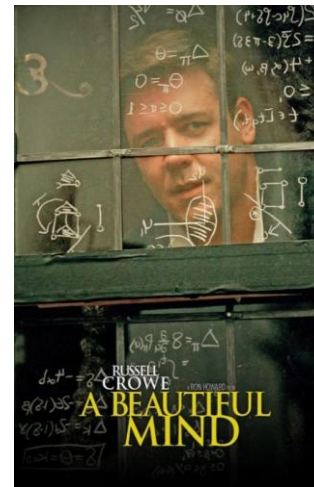
*“... However, he had to leave the Student’s Council, since now he is busy with a project dedicated to recycling paper and other sorts of municipal solid waste on the territory of Moscow State University. ...”*

# UNUSUAL LETTER FOR AN UNUSUAL PERSON



John F. Nash,  
1928-2015

Nobel Laureate  
(1994)



→ Depends on who writes a letter

# IN A NUTSHELL...

- Have someone experienced proof-read your CV & cover letter
- Brief your references

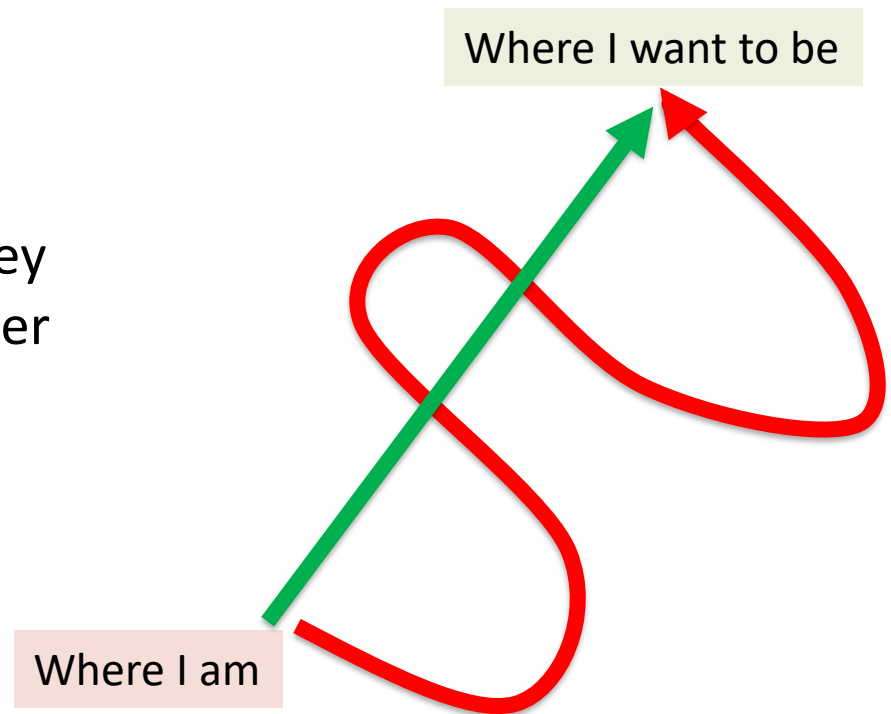


# INVEST IN YOUR CAREER

Few people plan their career strategically

- Where you want to go?
- How do you get there?

→ Invest time, effort & money to plan & shape your career



# INTERVIEWING

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# THE PURPOSE OF THE INTERVIEW

Find a match between what employer & applicant want

Interviewer: Want a person who

- can (& wants to) do the job (technical & inter-personal skills)
- fits in with the other staff
- has the potential to develop

Interviewee: Is looking for

- an interesting job
- with an appropriate remuneration
- working in a pleasant environment (colleagues, workplace...)
- with prospects to advance career

Good people are difficult to find

→ Meeting at eye level

# THE INTERVIEW

Be prepared to explain:

- What you have done so far & why
- Any “problems” in your CV, e.g. gaps, inconsistencies, changes, bad grades...
- Why you are interested in (i) the position, (ii) the lab & (iii) this area/question
- What you would like to work on
- (What resources you would need)
- General questions about yourself, your motivation, way of working & interests
- When you could start
- Possibly: salary expectations

Ask questions regarding your future project, funding etc.

Don't just talk to the boss, also to other people in the lab

→ Get an idea of what it's like to work there:

- Supervisor knowledgeable, available & a good mentor; personality & style of supervision compatible with your needs?
- Good mood & collaborative spirit in the lab?
- Sufficient resources (funding, equipment) to work successfully?

# PREPARE FOR QUESTIONS THAT MIGHT COME

- Tell me about yourself
- What are the reasons for your success in the past?
- Why do you want to work here?
- Why are you the right person for this position?
- What have you learned from your past work experience?
- What are your biggest accomplishments?
- How do you plan and organise your work?
- How would your friends describe you?
- What are your strengths / weaknesses?
- Why are you interested in this position / type of work?
- How do you cope under pressure?
- Describe how you dealt with a difficult situation. What did you learn from this experience?
- Describe a situation where your work or one of your ideas was criticized.
- What have you done that shows initiative?
- Do you prefer working with others or alone?
- Explain your role as a team member.
- Which of your skills / personal abilities are you keen to improve?
- How do you handle conflicts?
- Which kind of people would you like to work with?

# WHEN ANSWERING QUESTIONS

- Listen carefully
- Be focused: Answer comprehensively but succinctly (don't ramble!)
- Be informative, honest & accurate
- Make full use of open-ended questions
- Give evidence to support what you say; relate skills to specific experiences
- Be friendly & business-like; respond well when challenged, don't become defensive
- Be enthusiastic about your work & plans
- Be realistic about your level of attainment & job prospects
- Don't be afraid of silence & thinking before you answer

# PREPARE FOR THE INTERVIEW

- Read the job ad carefully
- Research the 'other side' as best you can
  - What are their needs?
- Know your strengths & weaknesses; be able to address them
- Prepare questions that clarify what would like to know
- Set your objectives
  - What is your ideal outcome?
  - What is your fallback position / bottom line?
- Dress professionally → Employers want scientists with great technical skills, but also employees with strong interpersonal skills

# AFTER THE INTERVIEW

- Follow up, e.g. by sending a brief message thanking them for their time, providing additional info...

# WHAT TO NEGOTIATE FOR WHEN SALARY IS FIXED

- Job description & job title
- Future salary raises / promotions
- Personnel to support you (students, technician, animal caretaker, admin/teaching support...)
- Funds for services, consumables, special equipment...
- Lab space & other resources
- Moving expenses
- Training & other benefits...

N.B.: Get everything in writing; oral agreements are easily forgotten.

# WHAT TO CONSIDER BEFORE ACCEPTING AN OFFER

Do you have funding for

- your position (fellowship, grant, staff position)
- your project

Will you be able to work on a project that

- is well defined
- is feasible (resources, tools, know-how, time)
- excites you
- is yours

Are you comfortable working in your future lab & with your future colleagues?

# WHO GETS THE JOB?

- Often not the most intelligent, the one with the most experience, the best communication & interpersonal skills...
  - Generally, the one with the right combination of skills & abilities and/or the one who is most motivated to do the job
- N.B.: Technical knowledge / skills become obsolete ever more quickly; transferrable skills typically remain relevant throughout a career (or become more important the higher you climb)
  - Develop them early on

# WHAT EMPLOYERS LOOK FOR IN CANDIDATES

- Technical knowledge / skills
- Communication skills
- Interpersonal skills
- Creativity, i.e. ability to generate thought-through ideas & innovate
- Initiative & determination
- Self-confidence
- Focus
- Ability to make good decisions, esp. when faced with complex & contradictory info
- Networking, i.e. establish range of useful relationships
- Planning & organisational skills, incl. structuring, prioritising & monitoring work
- ...

→ Find out what matters in the context you're applying in

# A FINAL WORD...

There are few strict rules regarding how to apply:

All applicants & bosses are individuals

→ Mostly guidelines

Important: Be yourself – in your CV, cover letter & interview

→ You will come across more authentically & will get jobs/bosses that fit you

# LEARN TO BE INTERVIEWED SUCCESSFULLY BY INTERVIEWING

To succeed in interviews,  
it is helpful to understand the other side

→ Take every opportunity to interview applicants

# BE PREPARED FOR THE UNEXPECTED



# FINAL ADVICE

## 1. Invest in your career

- Time
  - Networking & mentoring
  - Further training
  - Reading
  - Building a presence & reputation
- Money
  - Pay for training, advice, networking opportunities...
- Effort
  - Take it seriously & do it well

## 2. Work with top people

# WHAT WE LOOK FOR WHEN ASSESSING PHD APPLICANTS

- **Degrees from leading institutions**, in a field **relevant to the IPP** and with an **outstanding grade point average (GPA)**
- Topic of the Master's **thesis project**, with whom and at which institution it was carried out and how successful it was (e.g. grade, publications)
- **Practical experience**, especially other activities than a course as part of the degree curriculum, e.g. participation in summer schools, privately organised research stays at other institutions, assistance in research projects, as well as **international experience** (if any)
- Authorship of scientific **publications**, esp. in peer-reviewed journals (if any)
- **Other achievements** that imply high motivation or competence, e.g. awards, prizes, fellowships, travel grants or other distinctions received (if any)
- The **time frame** in which candidates achieved their respective accomplishments
- Clear **motivation** for applying to the IPP and particular research groups or topics expressed in the applicant's motivational statement
- Evaluation of the candidate's performance based on **letters of reference**
- Interests from/requirements of the Group Leader they have applied to