Career Paths Overview
(Note: PhD focused but still relevant to MDs and others)
About DOC (dropoutclub.org)

Our aspiration is to unite the global community of doctors, scientists and other biomedical professionals who seek to shape healthcare through innovative careers outside of traditional clinical and research tracks

We focus on 3 specific objectives:

- Connect members with great opportunities that leverage their unique backgrounds and experience
- Help employers rapidly source talent with highly specific biomedical and business experience
- Facilitate the online and in-person exchange of ideas, insights and opportunities among our members

Ultimately we hope that this will help improve the healthcare system by placing those who understand the real content of healthcare in leadership positions

Contact us at contact@dropoutclub.org
Contents

- **The challenge** when searching for non-academic jobs
- **Getting real** about our non-academic career prospects
- **Job market overview** for PhDs, by the numbers
- **Career deep dive:**
  1. R&D scientist
  2. Medical Science Liaison
  3. Science Writer
  4. Consultant
- **What next?**
As PhDs, we understand the academic career path ahead…

**Positions**

- Assistant professor
- Post-doc
- Grad student
- Technician
- Undergrad RA

**Promotion requirements**

- Distinctive publications, PI support
- PhD, publications
- Research experience, compelling application
- Strong academic record
- Etc.
…but if we want to change careers and know the opportunities open to us, understanding skills is key.

The two questions to answer when changing careers:

1. What careers can I change to?
2. What is my entry position within those careers?

It depends on your skills. If you know your skills and the skills employers want, then you know the careers and roles you can get.
The 3 PhD job archetypes and their skill requirements

<table>
<thead>
<tr>
<th>Job archetypes</th>
<th>Science-dependent</th>
<th>Mixed-dependent</th>
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<tbody>
<tr>
<td>PhD skills</td>
<td>Jobs heavily dependent on science / academic skills (e.g. scientific techniques, grants, publications)</td>
<td>Jobs that leverage your expertise about the scientific process or a specific area of science</td>
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<td>Less vetting of soft skills (e.g. mentoring, management, goal-setting, collaboration)</td>
<td>Additional technical skills or expertise is expected to be developed on the job</td>
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<td>Jobs that love your degree for what it signifies, but care little about what you actually studied</td>
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<td>For some careers, specific technical skills are equally as important</td>
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Where do I fit in?

**Science-dependent**
- You are in a “hot” area of science (e.g. Crispr/cas9, metabolomics, wearables, flexible displays, liquid biopsy tech, bioinformatics)
- You have a decent publication record*
- You are a postdoc*

**Mixed-dependent**
- You still love science and want to be around science, just not actually *doing* science
- You were in a somewhat applicable area of science towards the job you want

**Non-science dependent**
- You’re looking for a different adventure

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* Unless area you are in is super hot and nascent
The 3 job archetypes and their skill requirements

### Job archetypes

- **PhD skills**
- **Example jobs**

#### Science-dependent
- Tenure-track research professor
- Industry scientist
- Industry postdoc

#### Mixed-dependent
- Sensory scientist
- Application scientist
- Journal/book editor
- Medical liaison
- Biotech equity analyst
- Patent law
- Science Comm

#### Non-science dependent
- Consultant
- Science outreach
- Data scientist
- Science comm.
- Developer
- Conf/event planner
- VC analyst
The news is great for Grad Students and Postdocs

PhDs have many advantages on the job market...

- Highly developed skill sets with deep expertise
- Transferable skills to many careers
- Attractive background to employers

...that translate to great career outcomes

- PhDs are hired by every Fortune 500 company
- Average starting salary after a PhD is ~75K¹
- PhDs are among the 4.8% whose earnings have increased since 2000²

¹ www.payscale.com/research/US/Degree=Doctorate_%28PhD%29/Salary#by_Years_Experience
² U.S. Census Bureau, "Income, Poverty, and Health Insurance Coverage in the United States", 2012
We’ll dive into 3 science roles and 1 non-science role

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PhDs are involved in diverse roles in pharma/biotech

**Biotech/pharma**

- **R&D**
  - Scientist: experimentalist, postdoc required
  - Project management: Manager, training/exp req
  - Clinical research Asc: Oversee trials, entry
  - Regulatory affairs: Comm with reg agencies
  - Biostatistician: Analytic skills, PhD in TA big plus
  - Clinical data manager: Oversee data coll, exp req
  - Medical liaison: KOL mngr, PhD in TA
- **Clinical development**
  - Business dev: Drumming biz, biz know how
  - Science comms: Writer, soft skills, entry

# Jobs open (January 2016)

- R&D: 1550
- Project management: 375
- Clinical research Asc: 125
- Regulatory affairs: 60
- Biostatistician: 300
- Clinical data manager: 25
- Medical liaison: 300
- Business dev: 35
- Science comms: 100

December 2015 data
1 Industry Scientist
Big companies are still hiring

# of open jobs

- Philips
- Novartis Pharmaceuticals
- Gilead
- MSD
- Leidos
- Genzyme
- Kelly Services
- Hirelifescience
- Johnson & Johnson
- Celgene
- ELI Lilly and Company
- Illumina
- Teva
- Abbvie
- Regeneron Pharmaceuticals
- Merck & Co
- Thermo Fisher Scientific
- Pfizer

December 2015 data

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Life Science backgrounds account for 53% of jobs

PhDs requested, by background:

- Life Sciences
- Computer Science
- Interdisciplinary

December 2015 data
What skills are required?

% of R&D jobs requiring these skills

- Molecular cloning
- Human trials
- HPLC
- Cell culture
- Manufacturing
- DNA-seq
- Human stem cells
- CRISPR/Cas9
- Leadership
- Management experience

December 2015 data

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Public biotechs hiring PhDs by therapeutic area

- InVitae: 5
- Agios: 10
- Complete Genomics: 15
- Fluidigm: 65%
- Jazz
- Juno Therapeutics
- Acceleron
- Merrimack
- Relypsa
- Genocea Biosciences
- ChemoCentryx
- Ardelyx
- Concert

Genetics and oncology are up
Medical Liaison
Opportunities are concentrated at any given time

62% of the jobs in the top 5 companies

December 2015 data
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However, the jobs are widely distributed.
3 Medical Writer
Life Science backgrounds account for 64% of jobs

PhDs requested, by background

- Life Sciences
- Humanities
- Other STEM

December 2015 data
The majority of science comm jobs are at agencies

- For Comm jobs, check agencies
- 40% are “entry-level”

December 2015 data
4 Consultant
What is consulting?

The provision of external advice to organizations on a range of topics, such as strategy, organizational management, operations and technology.

What do consultants do?

- Deliver specialist expertise
- Fulfill short-term project needs
- Provide an objective outsider perspective
The consulting landscape

Some firms specialize in specific industries, functions; many advise clients in a range of industries on a range of functions.
Large management consulting firms

- McKinsey & Company (~10,500)
- Booz & Company (~9,500)
- BCG (~6,2000)
- Bain & Company (~5,000)
- Oliver Wyman (~3,000)
Healthcare consulting firms

There are a ton!!
For more detailed list go to: consultingbench.com

*Navigant Consulting (~3,000)*

*ClearView Healthcare Partners (~80)*

*L.E.K. (~1,500)*

*DefinedHealth (~30)*

*Trinity Partners (~160)*

*AcSelt (~5)*

*Bionest Partners (~150)*
What do I do next?
First, be realistic about what space you’re competitive in

Job archetypes

Science-dependent

Mixed-dependent

Non-science dependent

Science skills

PhD skills

Non-science skills

Ask yourself these questions

- What can I realistically get? What are the most cutting edge science skills I have (CRISPR or PCR)?
- Are there chances to develop more valuable technical skills?
- If I’m not on the cutting edge, am I passionate about continuing in science?
- For the careers that interest me, what experiences can I show to differentiate myself?
- How are my soft skills (presentation, conversation, leadership, management, communication)?
- How can I bolster those or more technical skills?

Then, if you have time: Build skills
If you have to apply today: 1) For any given job, ask yourself “how close to bulls-eye am I?”

Who they want to hire

Who they will actually hire

Who should not apply
Low ROI activity: Applying where you should not

“What percent of applicants are reasonably qualified?”

“Depends on the position, but 4 - 6%”
- Pfizer R&D Recruiter

“5 - 8%”
- Regeneron Recruiter

“Maybe 8%”
- Thermo Fisher Scientific Recruiter

“Less than 10%”
- Genentech Recruiter

“10 - 15%”
- Merck Chemistry Recruiter

You waste your time and hurt your reputation by applying to inappropriate jobs
Read the qualifications and requirements – they are there for a reason
High ROI activity: Applying where you are competitive

- Bullseye proximity always wins over potential or aspirations
  - No time to figure out your potential!* 
  - Aspirations not very valued by cold application reviews*
  - * Warm applications give you a chance to trump this! 
    - Especially at small companies

- If you are close to bullseye, apply!
  - Disregard 1-2 years of required experience 
    (don’t disregard hard requirements like degree type, area of expertise, licensure)
  - Rare skills > Area of expertise > common skills
  - E.g.: “Crispr biologist who works with stem cells and understands molecular cloning”
2) Write a great resume by seeking help

“We can not judge PhDs based on their resumes. In fact, the only people we understand less well from their resumes are college dropouts”

“As far as I can tell, PhDs compete to see who can list the most nonsensical nouns”

… And it’s work worth doing

“A flawless, well-written resume tells me something about a candidate. They can communicate. They’re attentive to detail. They put in the extra bit of effort on even tedious tasks because that’s the kind of person they are.”