Essentially IDP is a career planning tool that is designed to help support, plan, and track your career development and learning opportunities. It’s a tool that NIH strongly encourages a mentor and mentee would use and periodically review and update throughout the mentee’s research training.
Example of Career Training Needed

Researcher
Cambridge, Cambridgeshire, United Kingdom

Microsoft Research Cambridge is seeking an expert in ethics and AI to help us develop human-centric AI systems for the real world. We are seeking a researcher who will take on a lab-wide role to carry out research into these crucial issues, in cooperation with experts from government and academia, and to engage with projects across our AI portfolio to ensure our technologies have our users’ best interests at heart.

This will involve working collaboratively with our world-leading machine learning experts on ambitious projects. Projects will often be multidisciplinary and could involve social scientists, designers, ethicists and biologists, as well as computer scientists and engineers. We also aim to work closely with extramural end-users to ensure our projects can design and develop systems which can be evaluated in the real world. Our projects cover major areas of AI application most especially aimed at transforming the future of healthcare and the future of work.

Responsibilities:
- Advise the state of the art through internal research in the area of AI and ethics.
- Develop and lead a program of research which will be highly valued by the field, including new methodologies.
- Represent the lab externally through talks, lectures, conference papers, panels, press events and advice to government.
- Track the rapidly evolving trends and research across a variety of relevant fields.
- Work collaboratively with project teams to create more human-centric AI technology by:
  - Developing conceptual tools and frameworks for analysing and guiding projects in the research portfolio.
  - Designing and conducting studies which focus on the ethical implications of our systems with users.
- Converting findings into actionable results for developers and designers.

Qualifications:
Ph.D. in a related field (including the social sciences and humanities)

Preferred Qualifications:
- Passionate about real-world applications and impact.
- Track record of publications in top journals and conferences.
- Ability to apply research findings to guide the design and development of real systems.
- Ability to design studies to evaluate systems and demonstrate data analysis.
- Adept at applying technical and scientific trends.
- Highly effective communication and collaboration skills with demonstrable ability to speak to different audiences, ranging from product groups to academics and government regulators.
- Experience in industrial research is a plus.

Need to Start Career Planning Early in Graduate Training
Think Like a Designer

• **Curiosity**
  • Generate lots of ideas and explore options

• **Bias to action**
  • Prototype experiences and conversation

• **Reframing**
  • Step back, examine biases and move toward a solution

• **Radical collaboration**
  • Build a mentoring team
Explore career path matching your interests, skills, and values
gathering information on a career (for example, by reading)

Would this career let me do work I find interesting and exciting?
Would this career involve a tolerable amount of work that does not interest me?
Do I like the people I’d interact with in this field? Do I want to be like them?
Does it suit what’s important to me? (align with my personal core value)
What do I need to do to make myself marketable, and am I willing to do it?
Perspectives and candid information about various career paths
Versatile PhD – General Information

What it is

“Policy” means laws, regulations and priorities that collectively define how national issues are addressed by government and society. Science policy can be understood in two ways: science for policy (the use of scientific data to inform laws and regulations) and policy for science (the rules, regulations and priorities that guide research funding decisions, and those that affect the ultimate impact of scientific discovery). Science policy professionals do secondary research on diverse scientific subjects that cut across disciplines. Science policy work is done in a wide variety of organizations such as nonprofits, think tanks, government agencies, even corporations.

Starting points

A superb starting point is the AAAS Science and Technology Policy Fellowship; similar fellowships are offered by some state governments. But with the right background, one may simply apply for policy analyst jobs.

Advancement

From a policy analyst position, one can progress in a multitude of directions, including into either types of organizations and up their respective management chains. One can even move on to policy jobs at some other career, if desired. Policy analysis experience is very versatile.

Disciplines

All STEM disciplines are valued in the field of science policy.

Personality and outlook

This occupation is more scholarly and less-oriented than most, making it an appealing choice for someone who is deeply interested in ideas and their implications and who likes to approach these ideas through reading, writing and conversation. It is helpful to feel comfortable in the backroom role of providing information to decision-makers rather than being the decision-maker.

Preparation

Pick a policy issue you care about and read about it daily. Blog, tweet and comment about it to slowly establish yourself as an informed and reputable public voice on that topic. Identify organizations related to your issue. Conduct informational interviews with policy analysts and AAAS fellows.
Online Q&A panel discussion on different career paths for PhDs. Recent panels include:

- Career in the federal government
- Management consulting
- Technology transfer
- Medical writing
LinkedIn has ~147 industry categories
On-Campus Job Search Tool – Career Fairs

- Engineering EXPO
- Technology and Science Career Fair
- Communication Job & Internship Fair
- Liberal Arts Career & Internship Fair
- Bioscience and Biotechnology Career Fair

*Great Career Exploration and Networking Opportunity*
On-Campus Job Search Tool - Handshake
As a PI, you are, for all intents and purposes, running a small non-profit organization. Your time is split between raising money, administering finances, recruiting students and staff, and dealing with a myriad of administrative tasks which are absolutely necessary but do not represent areas where your value added is high.
Career and Professional Development Opportunities

- Career exploration and professional development for non-academic careers
  - Panel discussions with PhDs in a variety of careers
  - Seminars focused on: job search strategies; resume and cover letter guidance; interview preparation
  - Networking and recruitment events
- Grant-writing workshops: utilizing the expertise in the Vice-President for Research Office
  - NSF-GRFP, NIH NRSA Awards, K99/R00 Awards
- Academic careers workshops: helping students prepare for the academic job market
- Training programs
  - Concentration in Teaching and Mentoring; 3-seminar series offered through TIDES (the Texas Institute for Discovery Education in Science)
  - Texas Venture Labs, a business/entrepreneurship training program offered through the McCombs School of Business
  - Partnering with both McCombs School of Business and Moody College of Communication to develop Concentration in Leadership and Project Management and Concentration in Communicating Science, respectively
- Responsible conduct of research training
  - Core sessions to include: research misconduct; publication/authorship; peer review; conflict of interest & financial management/collaboration
Individual Consultations Available

- Career exploration
- Job/internship search strategies for non-academic jobs
- Academic job search (faculty and postdoc positions)
  - CV, cover letter, research statement and teaching statement
- Identifying the skills that transfer to non-academic jobs
- Converting CV to resume
- Resume and cover letter review and editing
- Interview preparation
- Networking
- Offer evaluation and salary negotiation

Po-Tsan Ku, Career Development Specialist for Graduate Students and Postdocs

Make an appointment in two ways:
- Call the Career Services at 512-471-6700
- Schedule online: https://utsns.joinhandshake.com/login
Summary of Resources for IDP

- MyIDP from AAAS
- Versatile PhD
- LinkedIn
- Career Fairs
- Handshake
- Making the Right Moves
- Career and Professional Development Opportunities
- Individual Consultations
Now you have chance to do self-assessment (skills, interest, value) and explore possible career paths, what do you do next? How do you make a decision as to which career path to pursue.

A useful strategic planning tool for you to use is to conduct a SWOT analysis.

Purpose of a SWOT Analysis.
The purpose of a Strengths, Weaknesses, Opportunities, and Threats framework is to get managers thinking about everything that could potentially impact the success of a new project. It helps them to avoid making poor business decisions but rather taking prudent actions to take their business in a positive direction.
Prototyping Experiences in Career Planning

[Diagram showing career exploration methods and engagement continuum]

- Exploratory phase, Low risk
- High engagement, High career clarity

Career Exploration Methods
"Continuum of Career Engagement"
Informational Interviews

- Purpose – to obtain information from people in different career
- Learn duties, qualifications, and personality traits of people in the target role
- Learn experience needed
- Learn trends in career field
- Ask for additional professional contacts
- Identify your connections – friends, relatives, fellow students, co-workers, neighbors, professional organizations, organizational directories, and LinkedIn
## Set Skills Goals

<table>
<thead>
<tr>
<th>Scientific Knowledge</th>
<th>Skill Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve</td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td>Broad-based knowledge of science</td>
</tr>
<tr>
<td>✓</td>
<td>Deep knowledge of the specific research area</td>
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<tr>
<td>✓</td>
<td>Critical evaluation of scientific literature</td>
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<tr>
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<td>Technical skills related to the specific research area</td>
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<tr>
<td>✓</td>
<td>Experimental design</td>
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<tr>
<td>✓</td>
<td>Statistical analysis</td>
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<tr>
<td>✓</td>
<td>Interpretation of data</td>
</tr>
<tr>
<td>✓</td>
<td>Creativity/innovative thinking</td>
</tr>
<tr>
<td>✓</td>
<td>Navigating the peer review process</td>
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</table>

<table>
<thead>
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<th>Skill Area</th>
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</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>✓</td>
<td>Basic writing and editing</td>
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<tr>
<td>✓</td>
<td>Writing scientific publications</td>
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<td>✓</td>
<td>Writing grant proposals</td>
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<tr>
<td>✓</td>
<td>Writing for communication</td>
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<tr>
<td>✓</td>
<td>Speaking clearly and effectively</td>
</tr>
<tr>
<td>✓</td>
<td>Presenting research to scientists</td>
</tr>
<tr>
<td>✓</td>
<td>Persuading in presentations</td>
</tr>
<tr>
<td>✓</td>
<td>Teaching in a classroom setting</td>
</tr>
<tr>
<td>✓</td>
<td>Mentoring and mentoring individuals</td>
</tr>
<tr>
<td>✓</td>
<td>Providing advice to colleagues and mentors</td>
</tr>
<tr>
<td>✓</td>
<td>Negotiating difficult conversations</td>
</tr>
</tbody>
</table>

*Set goals to improve the skills that are necessary for your chosen career path*
It takes a village. It’s very hard to succeed on your own. Your path towards a successful independent career will be greatly facilitated by having mentors and sponsors who are looking out for your interests and helping you.

Mentoring Team

• Choose a mentoring team
  – Seek multiple mentors, each with a different perspective or expertise that fit your development needs.
• Build a mentoring relationship
• Review and revise your career plan
LinkedIn for Networking – Advanced People Search

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Company</th>
<th>Location</th>
<th>Functional Relevance</th>
<th>Relative Seniority</th>
<th>Location</th>
<th>Connections</th>
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<td>Jane Doe</td>
<td>Senior Sales Executive</td>
<td>XYZ Corporation</td>
<td>Austin, TX</td>
<td>3</td>
<td>7</td>
<td>New York, NY</td>
<td>200</td>
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<tr>
<td>John Smith</td>
<td>General Manager</td>
<td>ABC Inc.</td>
<td>Houston, TX</td>
<td>5</td>
<td>6</td>
<td>Chicago, IL</td>
<td>150</td>
</tr>
<tr>
<td>Sarah Lee</td>
<td>Marketing Director</td>
<td>DEF Corp.</td>
<td>Los Angeles, CA</td>
<td>4</td>
<td>8</td>
<td>San Francisco</td>
<td>120</td>
</tr>
</tbody>
</table>

Choose contacts: functional relevance > relative seniority > location
Professional Society Meetings for Networking

- American Astronomical Society
- American Physical Society
- American Society for Biochemistry and Molecular Biology
- American Society for Cell Biology
- American Society for Microbiology
- American Society for Nutrition
- American Society of Plant Biologists
- Society for Neuroscience
Why New Hires Fail

A three-year study compiling results from hiring managers found that 50 percent of newly hired employees failed before finishing their second year due to poor interpersonal skills, such as accepting feedback, conflict resolution, and managing emotions; and only 11% failed because they lacked the necessary technical skills.

Why New Hires Fail (Emotional Intelligence Vs. Skills):
Must Have Career Readiness Competencies

- Survey of employers nationwide has identified four “must have” career readiness competencies:
  - Critical thinking/problem solving
  - Conflict management
  - Team work/process management
  - Write and speak with clarity and ease
- For each of the four “must have” career readiness competencies:
  - What employers expect of you
  - How to develop this competency
  - How to demonstrate this competency

Job Outlook 2016 Spring Update, National Association of Colleges and Employers - See more at:
http://www.naceweb.org/201602016/four-career-readiness-competencies.aspx?utm_source=spot-
call&utm_medium=email&utm_content=text&utm_campaign=recontent#hash_qjlyg4f1_dpuf
Complete an Annual Assessment Template – either CNS version or your program-specific version
Secret Mindset of a Meaningful Career and Life

Turning Pro is a mindset, a philosophy, and a practice. It refers to the day that you decide to quit procrastinating, quit making excuses, quit taking the easy way out, and simply do what needs to be done. You quit acting like an amateur in your life and instead act like a professional.
APPENDIX
What Got You Here Won’t Get You There

Po-Tsan Ku, PhD, MBA
Career Development Specialist for Graduate Students and Postdocs
June 14, 2016
Luminex Sample Job Description – Senior Scientist

JOB REQUIREMENTS

Competencies:
- Conflict Management—settles disagreement and disputes equitably
- Problem Solving—identifies complex problems and reviews related information to develop and evaluate options and implement solutions
- Process Management—ability to simplify complex processes and to organize people and activities
- Timely Decision Making—decisions can be made quickly even under tight deadlines and pressure

Required Education/Training:
- PhD in Physics, Biophysics, Electrical Engineering, Materials Science, Biomedical Engineering, or related field. MS with equivalent experience.

Required Certifications/License/Special Skills:
- Experience developing instrumentation used for biological testing.
- Experience in the use of statistical methods in the interpretation of clinical/biological data.
- Entrepreneurial determination and ability to drive ideas through initial barriers.
- Ability to influence the way others look at problems.
- Demonstrated ability bringing highly complex systems from concept to market is a plus.
- Demonstrated ability to root cause failures in complex systems.
- Expertise in C++ programming, MATLAB, LabVIEW, R, Python, JMP and/or Perl highly desirable.
- Ability to work independently and with minimal supervision.
- Ability to handle the pressure of meeting tight deadlines.
- Highly organized with proven time management and prioritization skills.
- Enthusiastic and highly motivated.
Genentech Sample Job Description – Sr Scientific Researcher

Who You Are
Technical skills:

The successful candidate will have many of the following characteristics: a detailed knowledge of biochemistry and protein engineering, experience in the use of protein conjugation and protein purification techniques including affinity, ion exchange, size exclusion (SEC), hydrophobic interaction and reverse phase chromatography using HPLC and FPLC platforms. Detailed knowledge of protein characterization by techniques such as mass spectroscopy (LC/MS), SEC / Laser Light Scattering (MALLS), calorimetry, (DSC or ITC), SDS-PAGE, ELISA and immunoblot, as well as determination of ligand binding constants and enzyme kinetics using surface plasmon resonance (SPR), fluorogenic reagents and ligand assays. Knowledge of related techniques such as protein expression in mammalian cells and mammalian cell culture will be helpful.

Education and Experience:
A Masters of Science (M.S.) or Ph.D. in biochemistry, chemistry, molecular biology or related discipline and three or more years of technical experience in areas related to protein chemistry are required. Excellent communication and interpersonal skills are essential and demonstration of these skill will be an important component of the interview process. Expertise with standard text, graphic, and presentation software required and familiarity with database/data archival software systems is desired.
Apple Sample Job Description – Software Tools Developer

Key Qualifications
• 3+ years of C and/or C++ programming experience. High level application development with Multithreaded programming experience. SW version control.
• Python/Perl and Unix scripting
• Understanding of computer architecture, hardware, firmware, operating systems, and user applications, and the interactions between them
• Familiarity with Mac hardware and software is preferred
Other desirable but not required qualifications:
• Experience developing SW drivers for Ethernet, UART and USB communication
• Experience to read Board-level schematics
• Experience using and automating test using Lab equipment (Multimeters, power supplies, oscilloscopes etc)

Soft Skills:
• Exceptional problem solving skills
• Independent, self-starter, with good interpersonal skills, and ability to lead.
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- For each of the four “must have” career readiness competencies:
  - What employers expect of you
  - How to develop this competency
  - How to demonstrate this competency

Job Outlook 2016 Spring Update, National Association of Colleges and Employers - See more at:
CRITICAL THINKING/PROBLEM SOLVING
What Employers Expect of You

- Solve problems associated with your daily tasks to keep projects moving
- Deal with confusing or ambiguous situations and make timely decisions
- Identify and solve complex problems in a logical and rational manner across departmental groups boundaries
  - Identify and define problem
  - Gather facts/review related information (statistics, time factor, history, all parties involved)
  - Identify the root cause (personnel, process, procedure)
  - Brainstorm possible solutions (be creative)
  - Narrow list to the best solutions
  - Evaluate solutions (pros, cons, resources required)
  - Implement the final solution (who, detailed process, timeline, communication)
How to Develop This Competency

- Develop creative solutions to problems associated with your thesis projects
- Freelance scientific consulting
- Internship or short-term projects in industry
- Texas Venture Labs, McCombs School of Business
How to Demonstrate This Competency

• Describe a relevant experience in your resume
  – Ensure bullets show a specific task (what is the problem, issue, challenge), action (how do you accomplish the task), and quantifiable result/impact

• Behavioral interview questions
  – From time to time we all deal with confusing or ambiguous situations. Tell me about a recent work experience when you had to solve a problem without having all the necessary background information readily at hand.
  – Tell me about a difficult decision you have made in the past year in your work life.
  – Describe an instance when you had to think on your feet to extricate yourself from a difficult situation.
Use Vivid Examples to Respond to Behavioral Questions

- **Problem or Situation**
- **Action You Took**
- **Result**
- **Lesson Learned**
CONFLICT MANAGEMENT
What Employers Expect of You

• Settles disagreement and disputes equitably
• Build and sustain professionally significant and interdisciplinary relationships
  – Knowing how to relate well to people significantly contributes to organizational effectiveness
How to Develop This Competency

- Learn about and appreciate different cultures
- Learn about different personalities and how they approach various situations and how they would like to be treated
- Learn the techniques on how to hold crucial conversations (as these create significant shifts in attitude and behavior) in a positive space when surrounded by highly charged emotions
  - Start with the heart (i.e. empathy and positive intent)
  - Stay in dialogue
  - Make it safe
  - Don’t get hooked by emotion (or hook them)
  - Agree a mutual purpose
  - Separate facts from story
  - Agree a clear action plan

Emotional Intelligence by Daniel Goleman
Crucial Conversations: Tools for Talking When Stakes Are High, Second Edition by Kerry Patterson

- Start with the heart
  - We must therefore ensure we understand the differing perspectives/meanings people have of an event in order to hold an effective debate.
  - Furthermore, we need to maintain a place of mutual respect.

- Make it safe
  - We need to make a person feel ‘safe’ The safer they feel, the more likely they are to open up. The greater their fear the more likely they will either close down or fight back.
  - Not ridicule, laugh, make light, attack
How to Demonstrate This Competency

- **Describe a relevant experience in your resume**
  - Ensure bullets show a specific task (what is the problem, issue, challenge), action (how do you accomplish the task), and quantifiable result/impact

- **Behavioral interview questions**
  - Tell me about a time when you had a conflict or difference of opinion with a colleague and how did you resolve the conflict.
  - Can you give me an example of a time when you had to give someone feedback/criticism and s/he did not respond well?
TEAM WORK/PROCESS MANAGEMENT
What Employers Expect of You

- Work well as part of a team across functional, business units locally, nationally, or globally (overcoming personality, language, cultural and time zone barrier)
- Function well both in-person or on-line
- Guidelines for successful team effort:
  - Set clear, unambiguous objective(s)
  - Follow responsibility assignment matrix, also known as RACI matrix for effective process management
    - Responsible: Those who do the work to achieve the task.
    - Accountable: The one who is ultimately answerable for the correct and thorough completion of the deliverable or task.
    - Consulted: Those whose opinions are sought, typically subject matter experts.
    - Informed: Those who are kept up-to-date on progress, often only on completion of the task or deliverable.
  - Clear, unambiguous, regular communication between team members
  - Resources readily available
  - Timeline
How to Develop This Competency

- Seek out opportunities to collaborate with other researchers locally, nationally, or globally
- Join student organizations on campus such as Graduate Student Assembly
- Volunteer in community services/organizations
- Work as a team on course projects
- Texas Venture Labs, McCombs School of Business
How to Demonstrate This Competency

• Describe a relevant experience in your resume
  – Ensure bullets show a specific task (what is the problem, issue, challenge), action (how do you accomplish the task), and quantifiable result/impact

• Behavioral interview questions
  – Can you give me an example of a time you had to work on a team and talk about both positive and negative aspects of that experience?
  – Describe a situation where you were able to motivate others to do a good job on a particular assignment.
  – Describe a situation where you had to arrive at a compromise or guide others to a compromise.
WRITE AND SPEAK WITH CLARITY AND EASE
What Employers Expect of You

• Communicate effectively within organizations and with outside audiences
  – **Written**: Written communication could apply to writing for the web, composing
    interoffice memos and correspondence or legal briefs, constructing employee
    handbooks or technical manuals or drafting performance appraisals
  – **Listening**: Employee is expected to be capable of communicating in a fluid, back-and-
    forth manner that engages other employees, managers, supervisors and executives alike
  – **Verbal**: Employee is expected to develop a rapport with your audience, whether they're
    rank-and-file employees, executives in the board room, irate customers or customers
    who are so satisfied they want to express their appreciation
  – **Audience**: Employee is expected to be capable of adjusting their communication style to
    suit the audience, detecting what their needs are and how best to deliver a message to
    them

• Go beyond the basics of good grammar, composition, and public speaking
to include the ability to influence people from their view points to yours,
or to that of your department or organization
  – The ability to communicate through persuasion and justification is highly valued

Rapport: a close and harmonious relationship in which the people or groups
concerned understand each other's feelings or ideas and communicate well.
How to Develop This Competency

• Take every opportunity to hone and refine your writing and oral skills
  – Research papers and review papers
  – Journal club
  – Seminar
  – Poster sessions at academic conferences
  – Email communication
  – Especially grant proposals

• Consider joining toastmasters

• Develop the skill of selling
  – Attunement: Get out of your head and learn to see things from your customer’s perspective.
  – Buoyancy: In sales, you face a lot of rejection—“not a pond, an ocean”. Try to quickly get over it and move on.
  – Clarity: To convince someone to buy your service or product, identify the problem they’re trying to solve then explain how you can help.

To Sell is Human: The Surprising Truth About Moving Others by Daniel Pink
How to Demonstrate This Competency

• Resume and cover letter
• Your publications
• Interview manner: listen attentively, speak calmly and confidently, and engage with the interviewer, making eye contact and asking questions where appropriate
• Behavioral interview questions
  – Tell me about a time when you had an idea and others didn’t agree with you. How did you go about convincing them to go along with you?
  – Describe a situation in which you were able to use persuasion to successfully convince someone to see things your way.
Resources on Professional Skills Development

- *What Got You Here Won’t Get You There: How Successful People Become Even More Successful* by Marshall Goldsmith

- Emotional Intelligence by Daniel Goleman

- InternQube: Professional Skills for the Workplace by Michael True

- *To Sell is Human: The Surprising Truth About Moving Others* by Daniel Pink

- Crucial Conversations: Tools for Talking When Stakes Are High, Second Edition by Kerry Patterson
Professional Development & Career Support Available

- Career exploration
- Job/internship search strategies for non-academic jobs
- Academic job search (faculty and postdoc positions)
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