Charting Your Course to Career Success

www.asbmb.org
Patricia Labosky
Program Leader
Office of Strategic Coordination
Office of the Director
National Institutes of Health
Suzanne Barbour
Dean of the Graduate School
University of Georgia
ASBMB Education and Professional Development committee
How can you position yourself for your next professional step?

Career planning
Skills
Research progress

Technical Skills
Writing
Presentation
(story, clear, engaging, delivery)
Managing projects, time, resources
Working with, supervising others
Setting clear expectations
Difficult conversations
Managing conflict
Collaboration, team science
Cultural competency
Managing up
How can I *fit this all in*, without negatively impacting my research productivity?

**Career preparation**

**Skills**

**Research progress**

Start early.

*Have a sense of your long-term career goals.*

*Be *strategic* & *targeted*…*

Create an *Individual Development Plan*

*Advocate for yourself; seek out mentorship!*
Agenda

- What is an IDP?
- Define your long-term career goals
- Identify your gaps
- Set goals to address your gaps
- Following through on your plan
- myIDP: an online tool
What is an Individual Development Plan?

A list of goals for the next 9-12 months (and beyond).
Created by you, informed by discussions with mentors.
Informed by your long-term career goals.

- Research progress
- Skills
- Career preparation

Thematic/chronological list: career.umassmed.edu

Timeline:
Vincent, Mol Cell 2015

@CnFuhrmann
3 Steps to Career Success and Satisfaction
Your career plans should be based on YOUR interests and preferences. They might also be influenced by geographic constraints, compensation needs, work environment preferences, and family issues.
Define Plans A and A’

• Know yourself
• Research career options
• Conduct informational interviews
• Plan activities during your PhD that will match your career interests
• Reevaluate periodically: look for patterns that might reflect a career interest you hadn’t identified before
Audience Poll

Please select the options that are closest to your Plan A and Plan A'. (Your selections will be anonymous and aggregate results will be displayed in real time.)

![Graph showing number of responses for different options.]
Step 2 – Identify Your Gaps

Your background and experience

Your gaps

Requirements of your dream job
How Can You Identify Your Gaps?

- Review job advertisements
- Ask hiring managers of desirable positions what they look for
- Interview current professionals
- Seek feedback after an unsuccessful application
Audience Poll

Select the top 3 gaps that you need to bridge to be successful in your career. (Your selections will be anonymous and aggregate results will be displayed in real time.)

- Other (write answer in chat box)
- Lack of experience working in teams
- Insufficient teaching experience
- Need improved communication skills
- Missing expertise or credentials
- Lack of project mgmt experience
- Lack of grant writing experience
- Unproven abilities in career path
- Meager publication record
- Undersized personal network
Step 3 – Set Goals to Fill the Gaps

• Guest lecture
• Take elective courses or credential training
• Develop a new research collaboration
• Write a grant
• Volunteer in the tech transfer office
• Ask the lab manager to show you the lab budget
Create your own opportunities

• Develop and teach an outreach module for a local school
• Freelance writing/editing
• Offer to help your PI write/edit a grant proposal
• Contact local colleges for guest lecture opportunities
• Start a career interest group
• Offer to help an instructor revamp a course
• Mentor an undergraduate
• Develop and teach a workshop
• Network to get ideas and find more opportunities
Agenda

- What is an IDP?
- Define your long-term career goals
- Identify your gaps
- Set goals to address your gaps
- Following through on your plan
- myIDP: an online tool
Following through on your plan

- Write down goals
- Specify the actions you will take
- Consider how to hold yourself accountable
  - Goals that are “important but not urgent”
- List the goals chronologically
- Map start and end dates onto a calendar
- What resources will you need? Ask for them.
- Set an “IDP check-in meeting” for 3-6 months later
- Use an online IDP as a framework – myIDP or ChemIDP
Four sections guide trainee
Scientific Skills Assessment

Assess your proficiency in these areas on a scale of 1-5 where:

1 = Highly deficient
5 = Highly proficient

### Scientific Knowledge

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Broad based knowledge of science</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Deep knowledge of my specific research area</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Critical evaluation of scientific literature</td>
</tr>
</tbody>
</table>

### Research Skills

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Technical skills related to my specific research area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Experimental design</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Statistical analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Interpretation of data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Creativity/innovative thinking</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Navigating the peer review process</td>
</tr>
</tbody>
</table>

### Communication

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Basic writing and editing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Writing scientific publications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Writing grant proposals</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Writing for nonscientists</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Speaking clearly and effectively</td>
</tr>
</tbody>
</table>
The table below lists career paths commonly followed by PhD-level scientists.

Click on the percentages in the right-hand columns to see how your skills and interests compare to the skills and activities most important to each career path category (as rated by professional career advisors). Return to the Quick Tips to learn about how these match scores were calculated. NOTE: Do not feel that these results limit your career options. You may be able to improve key skills to allow success in any career path.

Click anywhere in the "Values" column for a list of questions to help you think about how your values may fit into each path. Keep these questions in mind as you learn more about each career path in later sections of the module.

<table>
<thead>
<tr>
<th>Career Path</th>
<th>Skills Match</th>
<th>Interests Match</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science policy:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public affairs/government affairs staff at scientific societies, foundations, government entities, or think tanks</td>
<td>85%</td>
<td>79%</td>
<td></td>
</tr>
<tr>
<td><strong>Science education for non-scientists:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education or public outreach specialist such as at a science museum or scientific society</td>
<td>84%</td>
<td>79%</td>
<td></td>
</tr>
<tr>
<td><strong>Science writing:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science, medical, or technical writer or journalist; science editor; science publisher</td>
<td>75%</td>
<td>76%</td>
<td></td>
</tr>
<tr>
<td><strong>Science education for K-12 schools:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom teacher; curriculum developer; science specialist</td>
<td>75%</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td><strong>Sales and marketing of science-related products:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical science liaison; technical sales representative; marketing specialist</td>
<td>82%</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td><strong>Teaching-intensive careers in academia:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A primarily teaching faculty position in a research university, liberal arts college, community college</td>
<td>77%</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td><strong>Support of science-related products:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support of science-related products</td>
<td>85%</td>
<td>59%</td>
<td></td>
</tr>
</tbody>
</table>
Consider Career Fit

The table below lists career paths commonly followed by PhD-level scientists.

Click on the plus sign to see additional questions in each category.

Click anywhere to edit your ratings.

The table compares your ratings with those of experts.

**Skills Matches for Principal investigator in a research-intensive institution**

<table>
<thead>
<tr>
<th>Scientific Knowledge</th>
<th>Your Rating</th>
<th>Expert Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad based knowledge of science</td>
<td>2</td>
<td>4.07</td>
</tr>
<tr>
<td>Deep knowledge of my specific research area</td>
<td>3</td>
<td>4.93</td>
</tr>
<tr>
<td>Critical evaluation of scientific literature</td>
<td>4</td>
<td>4.87</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Skills</th>
<th>Your Rating</th>
<th>Expert Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical skills related to my specific research area</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>Experimental design</td>
<td>3</td>
<td>4.87</td>
</tr>
<tr>
<td>Statistical analysis</td>
<td>2</td>
<td>4.6</td>
</tr>
<tr>
<td>Interpretation of data</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Creativity/innovative thinking</td>
<td>4</td>
<td>4.67</td>
</tr>
<tr>
<td>Navigating the peer review process</td>
<td>3</td>
<td>4.53</td>
</tr>
</tbody>
</table>

Support of science-related products:

- 85%: [Skill 1]
- 59%: [Skill 2]
Resources for "principal investigator in a research-intensive institution"

Articles:
- Making the Leap to Independence
- Are You PI Material? Assess yourself
- Academic Scientist’s Toolkit (collection of articles)
- Competition and Careers in Biosciences
- Working in a Government Lab
- Getting a Job with the Federal Government (presentation and handouts)
- Listing of federal government research centers in the U.S.

Books:
- Academic Scientists at Work: Navigating the Biomedical Research Career
  Jeremy M. Boss and Susan H. Eckert
- Tomorrow's Professor: Preparing for Academic Careers in Science and Engineering
  Richard M. Reis
  New York: Wiley Interscience 1997
- At the Helm: A Laboratory Navigator
  Kathy Barker
- Making the Right Moves
  Research Triangle Park, NC: Burroughs Wellcome Fund 2004
  Chevy Chase, MD: Howard Hughes Medical Institute 2004
Tips for building a professional network.

Talk to People

Why is this important?
The most effective way to learn about a highly specialized career is to get advice from someone who has traveled down that path before you. The process of gathering information about a career path from another professional who is experienced in that field is called “informational interviewing”.

Through the informational interviewing process, you can learn:
- the pro’s and con’s of a career path
- how to make a successful transition onto that new path
- how to conduct an effective job search in that field

How to conduct an informational interview
1. Email an invitation to your informational interview “target” (download example correspondence).
2. Tell him or her that you seek advice, not a job offer.
3. Ask to set up a 30-60 minute appointment to talk.
4. Take a customized list of questions to your meeting (view a list of questions related to your top values, and download other general questions).
5. Conduct the informational interview.
6. Follow up with a thank you note (download example correspondence).
7. If appropriate, follow up periodically.

Keep a log
Click the My Activities tab above, and keep track of your informational interviews. Include information such as the person’s name, their title, and briefly what you learned from that discussion. These notes will be helpful if you follow up with him or her later to share your progress.
Tips for building a professional network.

Questions to Consider Regarding Values

We have not provided match scores for your values. This is because values are so subjective—and so dependent on individual jobs/employers—that it would be misleading to provide scores for them in this context. However, values are extremely important to keep in mind as you read articles, attend events, and do informational interviews to learn about these career paths in-depth—an activity you will be guided through in the next sections.

Based on your top rated values, here are some things you should consider as you learn about career paths:

<table>
<thead>
<tr>
<th>Your top values</th>
<th>Questions to consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Pace: work in a busy atmosphere with frequent deadlines</td>
<td>What do you know about the environment? Will there be enough activity for you?</td>
</tr>
<tr>
<td>Independence: work with little direction from others</td>
<td>Are people in this field allowed to have a high degree of control over their daily tasks?</td>
</tr>
<tr>
<td>Expert Status: be acknowledged as an expert in a given field</td>
<td>Are people in this field given adequate recognition for their expertise?</td>
</tr>
</tbody>
</table>

How to conduct an informational interview

1. Email an invitation to your informational interview “target” (download example correspondence).
2. Tell him or her that you seek advice, not a job offer.
3. Ask to set up a 30-60 minute appointment to talk.
4. Take a customized list of questions to your meeting (view a list of questions related to your top values, and download other general questions).
5. Conduct the informational interview.
6. Follow up with a thank you note (download example correspondence).
7. If appropriate, follow up periodically.

Keep a log

Click the My Activities tab above, and keep track of your informational interviews. Include information such as the person’s name, their title, and briefly what you learned from that discussion. These notes will be helpful if you follow up with him or her later to share your progress.
Edit SMART Goal

Select a skill to add a goal for:
- Statistical analysis
- Writing scientific publications
- Broad based knowledge of science

SMART Goal
Read textbook on stats, and do practice problems

Is this a recurring activity? No

Start Date
2/6/2012

Target Completion Date
2/24/2012

How will you be accountable?
Ask Joe to give me his sample data to analyze, & discuss.

Is Complete?

Save
Outputs a printed, unique IDP

INDIVIDUAL DEVELOPMENT PLAN FOR

Jillian Markovitz, March 15, 2012

Title: Postdoctoral Fellow
Institution: Akamai University
Position start date: July 1, 2010
Expected completion date: June 30, 2013

Research area: Biological Sciences
Research project(s): Identifying the atomic mechanism for DNA binding to X-protein using computational and x-ray crystallography methods.

CAREER GOALS

Plan A:
Long term career goal: Editor at scientific journal
Short-term or transition career goal: Postdoc or science writing internship?

Plan B:
Long term career goal: K-12 curriculum specialist
Short-term or transition career goal: Volunteer in K-12 schools

GOALS SUMMARY

<table>
<thead>
<tr>
<th>Month</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2012</td>
<td>Write &quot;results&quot; section each Friday for the work I did (weekly)</td>
</tr>
<tr>
<td></td>
<td>Take science writing course</td>
</tr>
<tr>
<td></td>
<td>Read books on teaching techniques for K-12</td>
</tr>
<tr>
<td>February 2012</td>
<td>Take science writing course</td>
</tr>
<tr>
<td>March 2012</td>
<td>Mentor undergard in the lab</td>
</tr>
<tr>
<td></td>
<td>Attend Science Education conference</td>
</tr>
<tr>
<td>April 2012</td>
<td>Mentor undergard in the lab</td>
</tr>
<tr>
<td>May 2012</td>
<td>Read articles/books about science writing careers</td>
</tr>
<tr>
<td>June 2012</td>
<td>Mentor undergard in the lab</td>
</tr>
<tr>
<td></td>
<td>Ask PI if I can volunteer in K-12 schools next fall</td>
</tr>
<tr>
<td></td>
<td>Mentor undergard in the lab</td>
</tr>
</tbody>
</table>

MENTORING TEAM

<table>
<thead>
<tr>
<th>Mentor</th>
<th>Primary mentoring role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janet Shim</td>
<td>Primary research advisor</td>
</tr>
<tr>
<td>John Schmidt</td>
<td>Teaching careers (middle school teacher)</td>
</tr>
<tr>
<td>Jim Austin</td>
<td>Science writing careers</td>
</tr>
<tr>
<td>Alok Narlikar</td>
<td>Writing (day-to-day help to improve)</td>
</tr>
</tbody>
</table>
Sends a monthly e-mail reminder

Individual Development Plan Update

noreply@aaas.org

To: Fuhrmann, Cynthia

Target completion date: 9/24/2012
Accountability plan: Will tell PI I intend to start writing in June, and finish in September.

Smart Goal: Attend science education conference
Target completion date: 8/1/2012
Accountability plan: n/a

Smart Goal: Prepare for Thesis Committee Meeting
Target completion date: 9/26/2012
Accountability plan: Thesis committee meeting already scheduled.

Smart Goal: Prep for and give journal club presentation
Target completion date: 9/24/2012
Accountability plan: Will have to present journal club (date already set)

Smart Goal: Write & submit abstract to ASSMB conference
Target completion date: 10/22/2012
Accountability plan: Jeff and I are both applying; will check in with one another.

Smart Goal: Do informational interview with 3 more science writers
Target completion date: 12/20/2012
Accountability plan: Take George to coffee to tell him about what I learned (he'll also be doing info interviews)

Completed a goal?
Great! Click "update" next to the goal to check it off your list.

Need to re-evaluate your plan?
Sometimes it is difficult to estimate an appropriate completion date for goals. Research—and life—can be unpredictable. Goal-setting is an iterative process, and sometimes requires adaptation. Of, perhaps you did not set a realistic timeframe; over time, you will learn how to set more realistic goals. To edit the completion date for a goal, click on the "update" link beside the goal to return to your Individual Development Plan. You can also add new goals to your plan.

Keep up the good work!

This is an automated reminder sent to you based on the Individual Development Plan that you revised on 11/27/2012. To opt out of these emails, click here. myIDP is hosted by ScienceCareers.org, an affiliation of AAAS/Science magazine.
As you progress…

• Make time for your professional development
• Consider your long-term career options
• Identify your gaps
• Create a plan, take action!
• Advocate for yourself:
  – Watch for lucky opportunities
  – Identify and engage multiple mentors
Additional resources

- ASBMB career resources:  http://www.asbmb.org/careers/
- BEST website:  http://www.nihbest.org/
- If you are interested in learning more about different National Institutes of Health programs or extramural opportunities, please contact Lynn Morin (lynn.Morin@nih.gov) at the National Institute on Alcohol Abuse and Alcoholism.
- myIDP (online career planning tool):  http://myidp.sciencecareers.org
- myIDP Articles Collection at ScienceCareers (tips for everything from self-assessment to building a network to planning an informational interview to setting goals effectively): http://www.sciencemag.org/careers/2013/05/content-collection-myIDP
- Creating an IDP: http://www.umassmed.edu/gsbs/career/plan/idp/
Additional resources

- Sample IDP:  http://www.umassmed.edu/gsbs/career/plan/idp/students/stage2sample/
- Additional resources on career pathways:  http://www.umassmed.edu/gsbs/career/pathways/overview/
- National Research Mentoring Network:  https://nrmnet.net/
- Science Careers website:  http://www.sciencemag.org/careers
- NIH intramural postbac program:  https://www.training.nih.gov/programs/postbac_irta
- NIH-funded postbac program:  https://publications.nigms.nih.gov/multimedia/map/prep/