

Creating a *Useful* Individual Development Plan

Bill Lindstaedt
Assistant Vice Chancellor
Career Advancement, International and Postdoctoral Scholars

10/27/19



What will we do?

- Experience a structured, step-wise process for making rational decisions about career options
- Work through the Individual Development Plan process to complete a rough draft version of your own IDP
- Discuss your plans and get feedback from peers and mentors during career planning poster session

Questions...

What is your current career goal?

- Post-training and a few years out
- Job type or title plus environment
 - PI/Tenure-track faculty at a large research university
 - Teaching/research faculty at state college
 - Industry researcher for drug development company
 - Policy expert in federal government
 - Field applications scientist for tools company

3

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Questions...

How confident are you that this career path is the best fit for you?

- a) I am very confident.
- b) I am fairly confident.
- c) I am still considering a range of career options.

4

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UCSF Students' and Postdocs' Career *Interests*, 2011

Survey of UCSF trainees' career preferences

-*Most considering multiple options*

-*Express low confidence in any option*

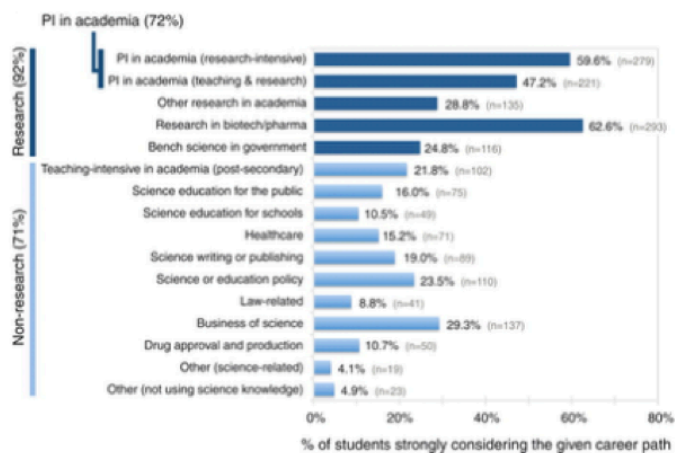
Avoid the "default postdoc"!

Career Path	% Students	% Postdocs
PI in an academic setting	45.3	53.2
Other research in academia	4.5	6.8
Research in biotech/pharma	20.3	27.8
Research in government	1.6	1.4
Teaching-intensive or education	5.8	3.1
Other science-related careers	22.3	7.8

Fuhrmann, Halme, O'Sullivan, Lindstaedt, CBE Life Sciences Education, 2011



Graduate students consider many career options at once

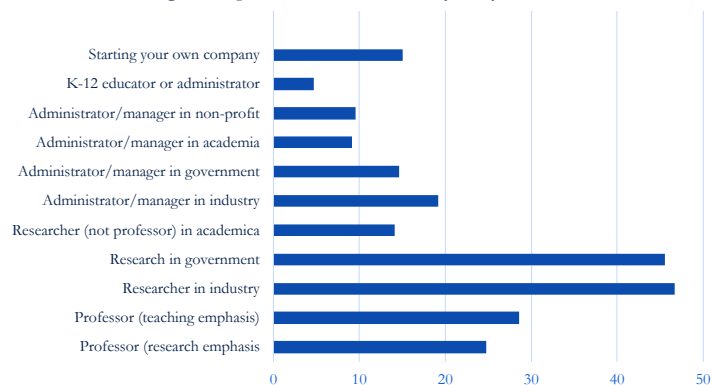


Fuhrmann et al. (2011) Improving Graduate Education to Support a Branching Career Pipeline: Recommendations Based on a Survey of Doctoral Students in the Basic Biomedical Sciences. *CBE Life Sci Educ* 10: 3239-249. doi: 10.1187/cbe.11-02-0013



Chemistry PhDs have varied career interests

Survey of doctoral students in chemical sciences
Percentage of respondents who are currently "very interested"

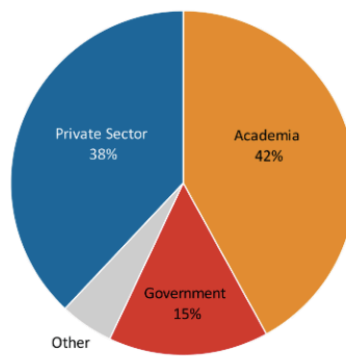


2013 ACS Graduate Student Survey
<https://www.acs.org/content/acs/en/education/students/graduate.html>

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Physics PhDs have varied career interests

Desired Future Employment Sector of New Physics PhDs,
Classes of 2015 & 2016 Combined



Note: "Other" includes nonprofit organizations, hospitals, and other unspecified employment sectors.

8

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Dizzying array of career options for PhD's

- Dozens of career options:
 - 20 categories
 - 58 job titles in myIDP
 - myIDP.ScienceCareers.org

SCIENTIFIC CAREER CATEGORIES AND THEIR DESCRIPTIONS	
CAREER CATEGORIES	EXAMPLES/DESCRIPTIONS
Principal investigator in a research-intensive institution:	Independent researcher at a medical school, private research institute, government lab or university with major teaching responsibilities
Research staff in a research-intensive institution:	Staff scientist or researcher in academia or government, lab manager, director of a multiuser research facility in an academic institution
Research in industry:	Discovery or preclinical researcher; manager of a research team or facility
Combined research and teaching career:	Faculty at a liberal arts college, master's-granting university, or doctoral-granting university whose job includes both research and major teaching responsibilities
Teaching-intensive careers in academia:	Faculty in a research university, liberal arts college, community college with major teaching responsibilities
Science education for K-12 schools:	Classroom teacher, curriculum developer, science specialist
Science education for non-scientists:	Education or public outreach specialist such as at a science museum or scientific society
Clinical practice:	Clinician such as genetics counselor, therapist, physician
Public health related:	Public health program analyst or evaluator, epidemiologist, bioinformatics medic or epidemiologist
Scientific/medical testing:	Testing specialist in an environmental, public health, genetic or forensic science setting (intelligence agencies, federal/state departments of justice), clinical diagnostician
Science writing:	Science, medical or technical writer or journalist; science editor; science publisher
Research administration:	Research administrator in private or public research institutions, government or academia, including compliance officers, grants and contracts officers; deans or directors of research programs
Science policy:	Public affairs/government affairs staff or scientific societies, foundations, government entities or think tanks
Intellectual property:	Patent agent; patent attorney; technology transfer specialist
Business of science:	Management consultant; business development professional in a biotech company; venture capitalist; market researcher; investment analyst
Entrepreneurship:	Starting your own business
Sales and marketing of science-related products:	Medical science liaison; technical sales representative; marketing specialist
Support of science-related products:	Technical support specialist; field application specialist; product development scientist or engineer
Clinical research management:	Clinical research project/trial manager or coordinator
Drug device approval and production:	Regulatory affairs professional; quality control specialist

9

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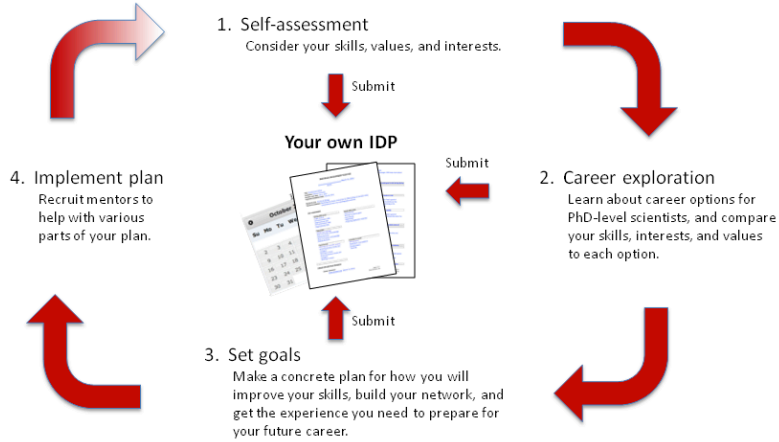
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How do I *confidently* choose a long term career goal from all the options?

- Research training does not provide knowledge about careers
 - How do I locate resources for finding out about my career options?
 - How do I choose a path?
 - How can I gain confidence that one career option is a better fit than others?
 - How can I find, meet and build relationships with role models to help me along after my training?
 - It's all competitive: How do I get the skills and experience to transition successfully onto my new path?
- Propose that a *structured* career planning and goal setting process is part of the solution - IDP

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4 Phases of the IDP Process

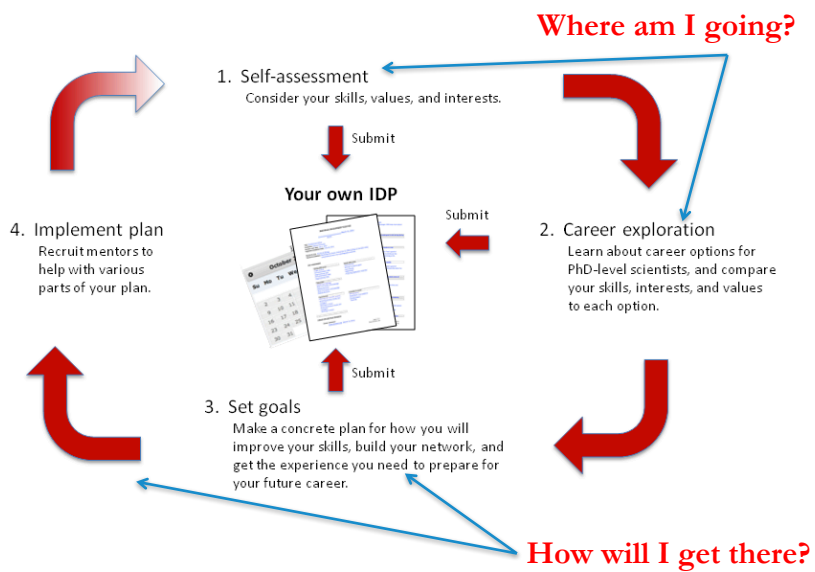


11

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4 Phases of the IDP Process



12

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What does an “IDP” *product* look like?

- A written list of **goals**, mapped onto a **timeline**
- goals lead to a **desired career outcome**
- major goal areas reached through action items

PROJECTS: (research checkpoints)

Collect data and analyze AB-Complex x-ray structure

- By end of November – Collected data (done!)
- By end of December – solve crystal structure
- By mid-February – list significant findings from structure, including questions we had previously defined. Align with and compare to previously solved structures, and the conclusions already published about these structures. Mock up figures and start writing paper during this time if it helps with analysis.

Write and submit paper

- December – draft Materials & Methods section
- January – confirm with PI where we should submit paper
- February-April – draft figures and results (and discussion?) section as a way to help with the data analysis/interpretation process
- May – finish Discussion and Introduction sections (doing so will free my time in June/July to prepare for conference)
- June – submit paper

Attend Gordon Research Conference on Computer Aided Drug Design (July 2014); try to present at corresponding Gordon Research Seminar for trainees

- December - Apply to meeting (GRC and GRS)
- February – update abstract based on research results
- March - if do not get accepted to GRC, then apply to September conference
- June – draft poster (and prepare talk?)
- July – attend conference

SKILLS DEVELOPMENT:

Crystallographic skills (data collection and analysis)

- November-December – read HKL Manual and textbook suggested by labmates, research advisor, and TRAC; get support from postdoc in lab as needed while solving structure
- December – Have postdoc review my data after it is processed, and then review with research advisor. Check in with postdoc periodically as I solve and refine structure.

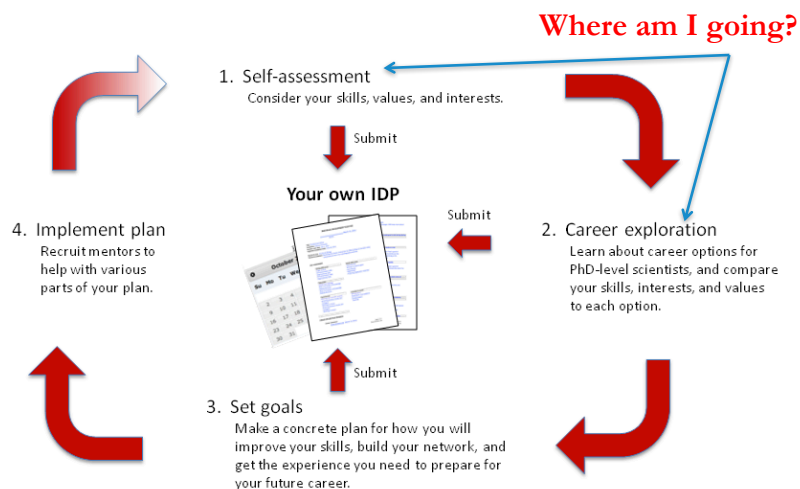
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CAREER ADVANCEMENT:

Learn more about industry trends

- December-April: Subscribe to BioWorld and read at least one article each week (weekends).
- Monthly: attend an E-Club event monthly
- ACCOUNTABILITY: have lunch with Amber and David every Thursday and compare notes about what we have heard about industry (at least 15 minutes during meal; we each contribute one update)

4 Phases of the IDP *Process*



14

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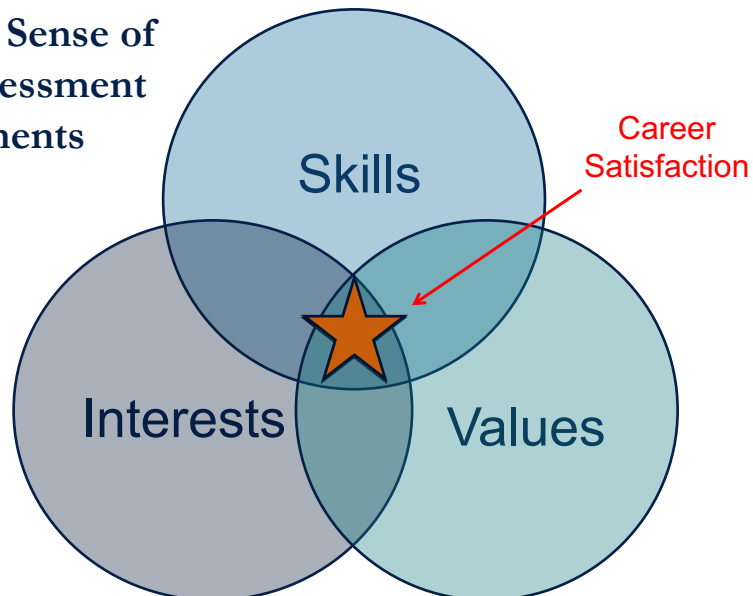
Career Self-Assessment Components

- **Skills:** **Tasks** you are good at doing (or not)
- **Interests:** **Tasks** you enjoy doing, or find engaging (or not)
- **Values:** **Rewards** or **outcomes** resulting from your work/career path

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Making Sense of Self-Assessment Components



Adapted from *Outside the Ivory Tower*, by Margaret Newhouse

16

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Values Assessment

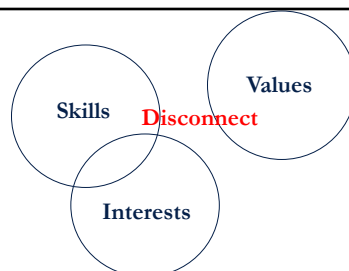
What rewards or outcomes do you most want from your future career?

17

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Case Study: Values disconnect



Teresa (career path option in microscopy sales/support)

- Basic sciences postdoc, near finishing;
- Spouse also a postdoc; feeling the money crunch
- Applied for Technical Sales position with major microscopy firm and was offered position
- Most important career values included “help others”, “help society”, “family friendly”
- Working as scientist in east coast pharma company on disease-related product close to approval

18

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Values Clarification Exercise

Think and Write:

- What is one value that you ranked as most important?
- Based on your stated career from the beginning of this workshop, what is one values-based disconnect you will encounter in that career?
- What is one challenge you will face in this career path due to that value?
- What is one potential solution to that challenge?

19

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Values Disconnects Discussion

Share with your partner:

- Introductions
- What career path are you considering?
(What did you write at beginning?)
- What is one value that you ranked as most important?
- What is one disconnect you will face in this career path due to that value?
- What is one potential solution to that challenge?
- Partner: What is ANOTHER potential solution to that challenge?

20

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Skills assessment

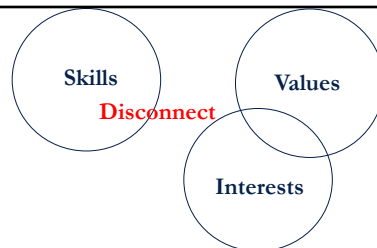
- What science career-related tasks am I good at doing?
- What tasks am I not good at doing?

- What tasks are important for success in my future career?
- How do I raise my skill level in important task areas?

- Complete the myIDP Skills Assessment sheet
- If you need a comparison group it should be your peers

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Skills disconnects



- Look back at the 1's and 2's on your skills assessment

- Skills **disconnects**:
 - Based on the career path you wrote down at the beginning of this workshop, circle the 3-5 skills you will most need to improve in order to succeed

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Skills/Interests

- Skills vs Interests
 - ◆ Both involve **tasks**
 - ◆ Skills: What tasks are you good at?
 - ◆ Interests: What tasks do you find engaging?
 - ◆ Possible that those don't fit together

- How does this concept impact career decision making?
 - ◆ When you are good at a task you don't like?
 - ◆ When you love doing a task you are not good at doing?
 - ◆ When a job requires tasks you don't like and are not good at doing?
 - ◆ Remember to break a career path down to specific tasks

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Interests assessment

- What tasks do I like to do? What tasks do I find engaging?
- What tasks do I dislike? What tasks do I find boring/drudgery?

- Complete the myIDP Interests Assessment sheet

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Skills/Interests Disconnects – Think and Write

Consider the tasks common to your long-term career goal.

- What common tasks involve skills you need to improve in order to be successful? (*skills* disconnect)
- What common tasks are you good at doing but do not enjoy? (*interests* disconnect)

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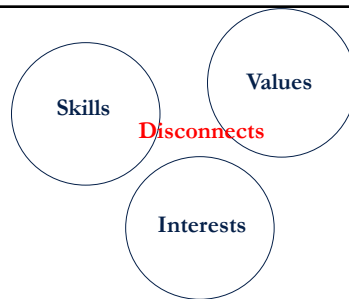
Skills/Interests Disconnects – Discussion

In pairs. (3 minutes per person)

1. Career path
2. *Skills* disconnect:
 - Share 1 skills disconnect
 - How can you improve that skill?
 - **Partner:** What is another method for improving that skill?
3. *Interests* disconnect:
 - Share 1 interests disconnect
 - What's a potential solution to that challenge?
 - **Partner:** What is another potential solution?

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Why look at career related disconnects?



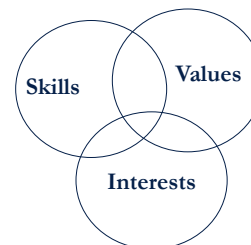
Lessons:

- No career option is perfect
 - There will be values-related challenges to every career option
 - There will be skills and interests challenges to every career option
 - Plan to deal with challenges, or move on to other career options
 - Colleagues can help you solve challenges
-
- Disconnects provide useful basis for eliminating options
 - This process **IS** how you choose a career with confidence!

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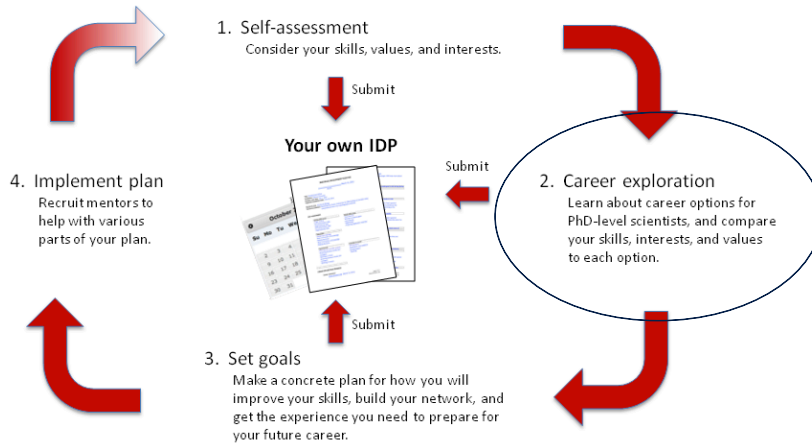
Using Self Assessment Results to Choose a Career Path



- Self assessment results are data generated about you
- Develop a finite set of career options
- **Explore** those career options with focus on your Skills, Interests, Values results
- Narrow options through **structured process of elimination**
- Iterative process: Using self-assessment data to make career decisions is a skill

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4 Phases of the IDP Process



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Career exploration problem:

How do I learn about my career options?

Where do I start?

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Career exploration problem:

How do I learn about my career options?

<https://www.youtube.com/watch?v=d-DoNgtfNcc>



Overview

- Overview Summary
- Personal Information

Assessment

- Skills Assessment
- Interests Assessment
- Values Assessment

Career Exploration

- Consider Career Fit**
- Read About Careers
- Attend Events
- Talk to People
- Choose a Career Path

Set Goals

- Career Advancement Goals
- Skill Goals
- Project Goals

Implement Plan

- Mentoring Team
- myIDP Summary

Previous Step
Next Step

Consider Career Fit

Quick Tips
My Career Path Matches

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.

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

16

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IGEN Conference 2019:
Creating a Useful Individual Development Plan

Overview

Overview Summary

Personal Information

Assessment

Skills Assessment

Interests Assessment

Values Assessment

Career Exploration

Consider Career Fit

Read About Careers

Attend Events

Talk to People

Choose a Career Path

Set Goals

Career Advancement Goals

Skill Goals

Project Goals

Implement Plan

Mentoring Team

myIDP Summary

Consider Career Fit Previous Step Next Step

Quick Tips My Career Path Matches

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

Click on the path to each career path to view more information. NO... path.

Click anywhere on the page to return to the main content.

Skills Matches for Principal investigator in a research-intensive institution

		your rating	expert rating
Scientific Knowledge			
Broad based knowledge of science	2	4.07	
Deep knowledge of my specific research area	3	4.93	
Critical evaluation of scientific literature	4	4.87	
Research Skills			
Technical skills related to my specific research area	3	4.2	
Experimental design	3	4.87	
Statistical analysis	2	4.6	
Interpretation of data	4	5	
Creativity/innovative thinking	4	4.67	
Navigating the peer review process	3	...	
Support of science-related products:		85%	59%

Career Exploration Activities

- Read about careers
 - Articles on the web, including myIDP
 - Books
 - Professional organizations
 - Job postings
 - LinkedIn
- Attend career events
 - At your institution
 - Professional meetings
- Talk to people
 - Informational interviews
 - Networking
- Get experience
 - Shadowing/Simulations
 - Courses
 - Projects
 - Internships

The screenshot shows a web application interface. On the left is a sidebar menu with sections: Overview (Overview Summary, Personal Information), Assessment (Skills Assessment, Interests Assessment, Values Assessment), Career Exploration (Consider Career Fit, Read About Careers, Attend Events, Talk to People, Choose a Career Path), Set Goals (Career Advancement Goals, Skill Goals, Project Goals), and Implement Plan (Mentoring Team, myIDP Summary). The main content area is titled 'Read About Careers' and has tabs for 'Quick Tips', 'Resources', and 'My Notes'. A pop-up window titled 'Resources for "science writing"' is open, displaying a list of resources categorized into Articles, Books, and Professional Societies. Each resource includes a title, author, and publication information, with a 'More' link next to each entry.

Read About Careers Previous Step Next Step

Quick Tips Resources My Notes

The table... interests.

Click on...

Resources for "science writing" x

Articles:

- [Careers in Science Writing and Editing \(collection of articles\)](#)
- [Careers in Science Broadcasting \(collection of articles\)](#)
- [Careers in Scientific Translating \(collection of articles\)](#)
- [Careers for Scientists in Science Communications and Public Relations \(collection of articles\)](#)

Books:

- **Guide to Nontraditional Careers in Science**
(Chapter 5)
Karen Young Kreeger
Philadelphia: Taylor and Francis 1999 [More](#)
- **Alternative Careers in Science: Leaving the Ivory Tower**
(Chapters 2, 3, 4)
Cynthia Robbins-Roth
San Diego: Academic Press 1993 [More](#)
- **Explaining Research**
Chapter 17)
Dennis Meredith
New York: Oxford University Press 2010 [More](#)

Professional Societies:

- [American Medical Writers Association \(AMWA\)](#)
- [National Association of Science Writers \(NASW\)](#)
- [Society for Technical Communication \(STC\)](#)

Career Exploration Activities

- Read about careers
 - Articles on the web, including myIDP
 - Books
 - Professional organizations
 - Job postings
 - [LinkedIn](#)
- Attend career events
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 - Projects
 - Internships

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“How long does one stay in industry research jobs before moving to leadership level?”

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Gayathri Ramaswamy · 1st
Director-Research, Alzheimer's Disease and Dementia
Research Unit at Biogen
Cambridge, Massachusetts · [500+ connections](#) · [Contact info](#)

“How long does one stay in industry research jobs before moving to leadership level?”

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Gayathri Ramaswamy
Director-Research, Alzheimer's Disease and Dementia Research Unit at Biogen

Experience

- Biogen**
1 yr 6 mos
- Director-Research, Alzheimer's Disease and Dementia Research Unit**
Jun 2019 – Present · 4 mos
Cambridge, MA
Head of a group in the Alzheimer's disease & Dementia Research Unit focused on developing AD therapeutics based on targeting lipids, vascular dysfunction and neuroimmune modulation.
- Associate Director-Research, Alzheimer's Disease and Dementia Research Unit**
Apr 2018 – Jun 2019 · 1 yr 3 mos
Cambridge, MA
Head of a group in the Alzheimer's disease & Dementia Research Unit focused on developing AD therapeutics based on targeting lipids, vascular dysfunction and neuroimmune modulation.
- Senior Principal Scientist/Group Leader**
Pfizer
Jul 2012 – Apr 2018 · 5 yrs 10 mos
Cambridge, MA
Group leader and research program lead for drug discovery programs targeting apolipoprotein E (apoE) for treating Alzheimer's disease (AD) and targeting glucocerebrosidase (GBA) for treating Parkinson's disease (PD).
... See more
- Senior Scientist**
Bio-Rad Laboratories
Jul 2008 – Jun 2012 · 4 yrs
Hercules, CA
Reagent development for gene expression applications.
- Senior Scientist**
Life Technologies
Jan 2008 – Jun 2008 · 6 mos
Foster City, CA
Developed highly multiplexed assays containing 8-9 singleplexes to detect several bacterial threat pathogens in a single tube using real-time PCR.

Post doctoral fellow

Gladstone Institute of Neurological Disease, UCSF
Aug 2003 – Jan 2008 · 4 yrs 6 mos
San Francisco Bay Area
Role of apolipoprotein E4 domain interaction in Alzheimer's disease. (Publication # 1, 2, 3)
Apolipoprotein (apo) E4 is the major known genetic risk factor for the late-onset familial sporadic forms of Alzheimer's disease (AD), which account for more than 95% of AD cases. Domain interaction is one of the two main physical properties of apoE4... See more

Education

- St. Jude's Children's Research Hospital/University of Tennessee, Memphis**
Ph.D., Biochemistry (Cell Biology)
1997 – 2003
Activities and Societies: • Tutor for Biochemistry for Dental School graduates • Graduate Student Representative for Department of Biochemistry
-Regulation of Pantothenate kinase gene expression in HepG2 cells: Ph.D. Dissertation project
-Pantothenate kinase (Pank) is a key rate limiting enzyme in coenzyme A (CoA) biosynthesis. CoA is an important cofactor in major cellular metabolic pathways in the cell such as lipid metabolism, which serves as the major energy source in diseases such as type II diabetes
-Demonstrated that only one of isoform of human Pank, hPank1a is altered in human hepatoblastoma cells in response to bezafibrate, a hypolipidemic drug, and a PPARα agonist
-Demonstrated that increase in hPank1a mRNA and protein levels results in increase in enzyme activity and CoA levels in cells
-Assembled the hPank1a cDNA and subcloned the gene into pcDNA3.1-, a mammalian expression vector
Cloning and Characterization of Pantothenate Kinase from Aspergillus nidulans species
-Subcloned the Aspergillus nidulans pantothenate kinase (aPank) cDNA into pET15b, a E.coli expression vector, overexpressed the protein
- University of Pune, India**
M.Sc, Biochemistry
1994 – 1996
Activities and Societies: • Participated in debate and elocution competitions • Active participant in journal clubs
- University of Madras, India**
B.Sc, Chemistry
1991 – 1994
Activities and Societies: • Student President, Department of Chemistry • Participated in debate and elocution competitions • Active participant in journal clubs

Yasmeen Rahimi, PhD · 2nd
Managing Director and Senior Research Analyst
Biotechnology at ROTH Capital Partners
Greater New York City Area
See contact info
367 connections

Experience

- Managing Director and Senior Research Analyst Biotechnology**
ROTH Capital Partners
Feb 2018 – Present · 5 mos
Greater New York City Area
- Director & Biotechnology Research Analyst**
ROTH Capital Partners
Sep 2017 – Present · 10 mos
Greater New York City Area
- Equity Research Associate**
H.C. Wainwright & Co., LLC
Jun 2016 – Present · 2 yrs 1 mo
- Biotechnology Equity Research Associate**
Guggenheim Partners
Jul 2015 – Jun 2016 · 1 yr
Greater New York City Area
- Scientist**
Shire Pharmaceuticals
Nov 2014 – Jul 2015 · 9 mos
Lexington, MA
Biomarker and Bioanalytical Development

Education

- Yale University School of Medicine**
Post-doctoral Fellowship, Internal Medicine
2012 – 2014
- Indiana University School of Medicine**
Doctor of Philosophy (Ph.D.), Biochemistry with minor in Diabetes and Obesity
2009 – 2012

“What transitional experience do I need, for *business of science* careers?”

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Yasmeen Rahimi, PhD • 2nd
 Managing Director and Senior Research Analyst
 Biotechnology at ROTH Capital Partners
 Greater New York City Area

Experience

- Managing Director and Senior Research Analyst Biotechnology**
 ROTH Capital Partners
 Feb 2018 – Present • 5 mos
 Greater New York City Area
- Director & Biotechnology Research Analyst**
 ROTH Capital Partners
 Sep 2017 – Present • 10 mos
 Greater New York City Area
- Equity Research Associate**
 H.C. Wainwright & Co., LLC
 Jun 2016 – Present • 2 yrs 1 mo
- Biotechnology Equity Research Associate**
 Guggenheim Partners
 Jul 2015 – Jun 2016 • 1 yr
 Greater New York City Area
- Scientist**
 Shire Pharmaceuticals
 Nov 2014 – Jul 2015 • 9 mos
 Lexington, MA
 Biomarker and Bioanalytical Development

Education

- Yale University School of Medicine**
 Post-doctoral Fellowship, Internal Medicine
 2012 – 2014
- Indiana University School of Medicine**
 Doctor of Philosophy (Ph.D.), Biochemistry with minor in Diabetes and Obesity
 2009 – 2012

4 Certifications

- Series 63
- Series 7
- Series 86
- Series 87

3 Honors & Awards

- NIH T32 Post-doctoral Fellowship in Diabetes & Obesity • NIH T32 Pre-doctoral Award
- Research Investment Fund Award

3 Languages

- English • German • Persian

Interests: Sina Safayi, DV... X Messaging

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How helpful are these resources?

Survey of myIDP users

8044 respondents

-65% PhD/Postdoc trainees

-35% BS/MS/finished training

What resources did you **use** to explore careers?

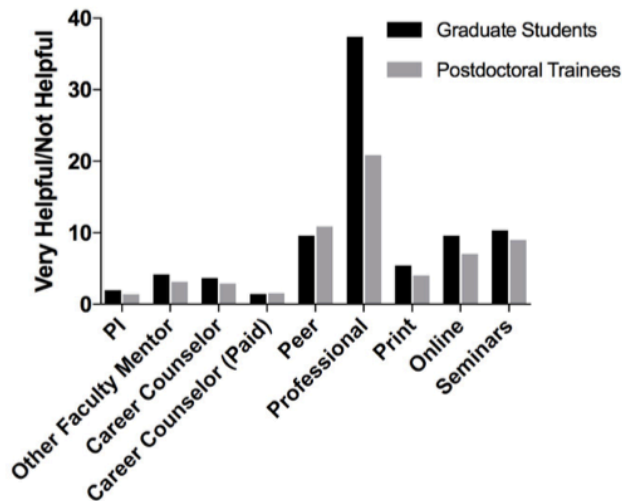
What resources were **helpful or not helpful?**

RESOURCE	% USING RESOURCE FOR EXPLORING CAREERS
Research Advisor/PI	57.1
Faculty Mentor other than PI	51.7
Career Counselor/Advisor/Coach at your institution	34.7
Career Counselor/Advisor/Coach that you paid	7.6
Peer	62.0
Professional in Career of Interest	55.3
Print Resources (e.g. books, magazines, journals)	50.4
Online Resources other than myIDP	51.9
Seminars and Workshops	55.2

Filios, Lindstaedt, Fuhrmann, Seger, Hobin, Clifford, 2019



How helpful are these resources?



Filios, Lindstaedt, Fuhrmann, Seger, Hobin, Clifford, 2019



Career Exploration Framework - Activities

- Read about careers
 - Articles on the web
 - Books
 - Professional organizations
 - Job postings
 - LinkedIn
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 - At your institution
 - Professional meetings
- Talk to people
 - Informational interviews
 - Networking
- Get experience
 - Shadowing/Simulations
 - Courses
 - Projects
 - Internships

Increasing effort

Increasing
understanding
of career path

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Informational interviews

- Deeper information on career choices
- Appointment in advance
- List of specific questions
- Not a job interview
- Try to get additional contacts
- Thank you note
- Tutorial and resources at myIDP “talk to people” section

4
6

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Informational Interviews: Learn how from myIDP “Talk to People Section

myIDP Science Careers
INDIVIDUAL DEVELOPMENT PLAN

LOG OFF | CONTACT US | MY ACCOUNT | ABOUT myIDP | SCIENCE CAREERS

AAAS

Return to Plan

Talk to People

Networking | Informational Interviews | My Activities

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.

Your top values	Questions to consider
Influence People: be in a position to change attitudes or opinions of other people	Would your day to day work allow you to have an impact on people’s attitudes?
Intellectual Challenge: perform work that is intellectually stimulating	In what ways would you find this work stimulating?
Creativity: originate and develop new ideas	In this field how will you be able to be innovative?
Location: live in a place which is conducive to my lifestyle	Does this career field cluster around certain geographic areas? Will the areas where I can work in this field meet my lifestyle requirements?
Professional Development: have a job with opportunities for growth or promotions	For the people in this field what is the next position? What is the path for continued promotions?
Work/Life Balance: balance time spent at work and time spent doing other activities	What do people in this field say about their work/life balance?
Family Friendly: have a job with policies supportive of families, including day care, flexible work schedules, etc.	What policies are common in this field that make it more or less family friendly?
Learn New Things: be challenged to learn new skills or knowledge on a regular basis	Does the work require constant learning or updating my skills?

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Sample Letter Requesting an Informational Interview:

Dear Dr. Adams:

I have been reading about the work of ABC Bio, Inc. I am beginning to think about the next step in my career and would like to explore the potential career paths available in industry research. I am hoping that you will be willing to give me some career advice, from one former UCSF immunology postdoc to another.

Would you be willing to meet in person or by telephone to talk with me about your own career path and about how scientists can transition successfully from academia to industry?

Thank you for your assistance.

Fred Jones, PhD
Postdoctoral Researcher
Department of Immunology
UCSF

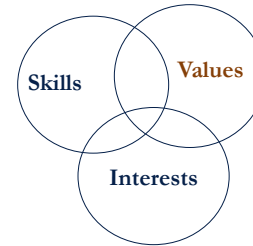
415-555-5555
fred@ucsf.edu

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How do you find people for informational interviews?

- Your own network – direct contacts you already know
- Indirect contacts - acquaintances of people in your network
- Scientific disciplinary societies
- Professional organizations
- LinkedIn
- Campus career resources

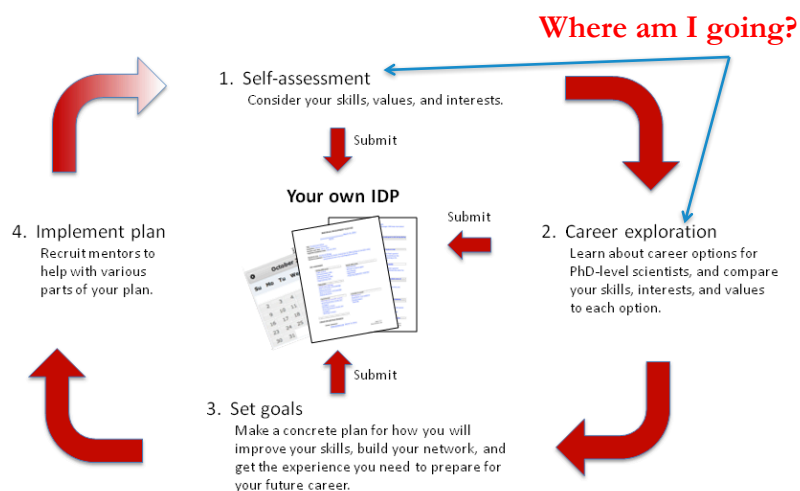
Using Self Assessment Results to Choose a Career Path



- Self assessment results are data generated about you
- Develop a finite set of career options
- **Explore** those career options with focus on your Skills, Interests, Values results
- Narrow options through **structured process of elimination**
- Iterative process: Using self-assessment data to make career decisions is a skill

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4 Phases of the IDP *Process*



52

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Career Exploration Assignment

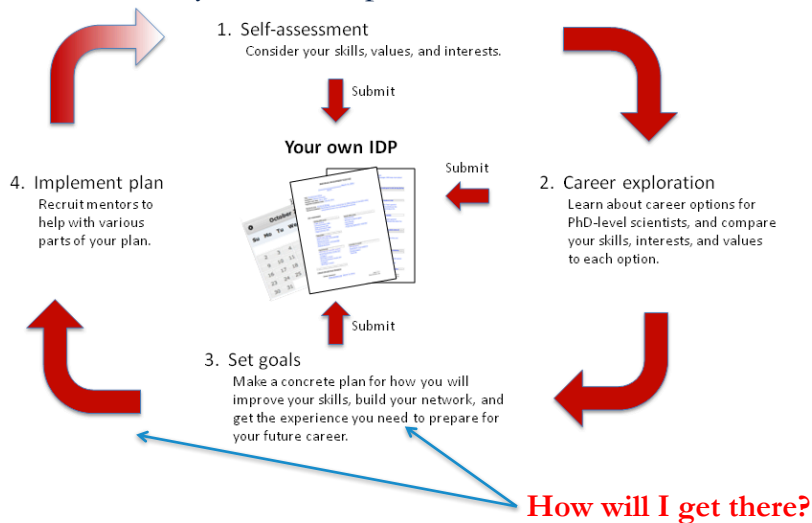
- Invest time in career exploration reading
 - articles on careers of interest
 - LinkedIn searches
 - read 20-30 job postings of interest, identify themes
- Create a LinkedIn PTO (People Titles Organizations) list with 6-10 people who are in the same general career area as your Plan A or Plan B, or who work for an organization you would like to work for. Synthesize useful info by looking for themes:
 - **Themes:**
 - Did they complete transitional *training* after PhD? If so, what?
 - What job titles or types of employers tended to be in between PhD and current?
 - What organizations or groups are they following?
 - What skills or qualifications are you missing that they all have?

53

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Setting goals for making progress in graduate school, making progress toward long-term career, talking with mentors about your career plans



54

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Why is creating a *plan* so important?

*Having a structured plan is correlated with **increased productivity, fewer conflicts, higher satisfaction.***

- Postdocs who discussed plan with mentors: more first-author papers, fewer conflicts with advisor, higher satisfaction with postdoctoral experience (*Davis (Sigma Xi), 2006*)
- Goals impact performance
 - Direct attention to activities related to goal
 - Inspire action toward goal
 - Increase persistence toward goal
 - *Reviewed in Locke & Latham, Am Psychol, 2012*
- Increased performance if individual sets goals (vs goals set by mgr) (*Latham, Mitchell, Dossett, J Appl Psychol, 1978*)

Reviewed in Hobin, *CBE-Life Sci Ed*, 2014

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Beginning your IDP product

A written list of goals mapped onto a timeline, *designed to achieve a career outcome.*

Skills Development Goals

Project Goals for Thesis Project
Or Goals for Progress in Program

Career Goals

PROJECTS: (research checkpoints)

- By end of November - **analyze AR-Complex x-ray structure**
- By end of December - **Collect and data (done)**
- By mid-February - **solve crystal structure**
- We had previously defined. **Align with and compare to previously solved structures, and the conclusions already published about these structures. Mock up figures and start writing paper during this time if it helps with analysis.**

Write and submit paper

- December - **draft Materials & Methods section**
- January - **confirm with PI where we should submit paper**
- February-April - **draft figures and results (and discussion?) section as a way to help with the data analysis/interpretation process**
- May - **finish Discussion and Introduction sections (doing so will free my time in June/July to prepare for conference)**
- June - **submit paper**

Attend Gordon Research Conference on Computer Aided Drug Design (July 2014); try to present at corresponding Gordon Research Seminar for trainees

- December - **Apply to corresponding**
- February - **update abstract based on research results**
- March - **if do not get accepted to GRC, then apply to September conference**
- June - **draft poster (and prepare talk?)**
- July - **attend conference**

SKILLS DEVELOPMENT:

Crystallographic skills (data collection and analysis)

- November-December - **read IRL Manual and textbook suggested by labmates**
- research advisor, and TRAC: **get support from postdoc in lab as needed while solving structure**
- December - **Have postdoc review my data after it is processed, and then review with research advisor. Check in with postdoc periodically as I solve and refine structure.**

CAREER ADVANCEMENT:

Learns more about industry trends

- December - **Subscribe to BioWorld and read at least one article each week (weekends)**
- Monthly: **attend an F-Club event monthly**

ACCOUNTABILITY: **have lunch with Amber and David every Thursday and compare notes about what we have heard about industry (at least 15 minutes during meal; we each contribute one update)**

Skill development goals

- Look back at the 1's and 2's on your skills assessment
- Skills disconnects:
 - Based on my career path A goal, circle the 3-5 skills you will most need to improve in order to succeed
- **How do I raise my skill level in important task areas?**

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Setting Goals

- | | |
|-----------------|-------------------------|
| Specific | – smaller task |
| Measurable | – can measure success? |
| Action-oriented | – <i>how</i> verbs |
| Realistic | – difficulty and timing |
| Time-bound | – set a deadline |

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Set skills goals:

Example for improving teaching skills –

Specific, Measurable, Action-oriented, Realistic, Timebound

Skill to improve	Action items/measurement	Timing
Become a more engaging teacher		

Set skills-oriented goals

Activity

- On your Skills Assessment sheet, select 1-2 skills you want to improve during the next year.
- Using Page 6 of your Worksheet, set one or more SMART goals that will lead to improvement in this skill.

Specific

– smaller task

Measurable

– can measure success?

Action-oriented

– *how* verbs

Realistic

– difficulty and timing

Time-bound

– set a deadline

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Set skills-oriented goals

Activity

- Pair with a neighbor:
 - ◆ Share your skill area and goal(s),
 - ◆ Partner gives feedback:
 - ◆ How could the goal be more Specific? More Measurable? More Action-oriented? More Realistic? Is it time bound?
 - ◆ Partner provides 1 additional method for developing this skill.

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Set goals in myIDP

“Check-mark” your desired skills area

Overview

- Overview Summary
- Personal Information

Assessment

- Skills Assessment
- Interests Assessment
- Values Assessment

Career Exploration

- Consider Career Fit
- Read About Careers
- Attend Events
- Talk to People
- Choose a Career Path

Set Goals

- Career Advancement Goals
- Skill Goals**
- Project Goals

Implement Plan

Skills Development Goals

Quick Tips | My Skills to Improve | My SMART Goals

Choose the skills areas that you want to work on improving this year. We recommend choosing 2-5 skills areas on this page.

Scientific Knowledge


Improve	Skill Area	Your Score
<input checked="" type="checkbox"/>	Broad based knowledge of science	2
<input type="checkbox"/>	Deep knowledge of my specific research area	n/a
<input type="checkbox"/>	Critical evaluation of scientific literature	4

Research Skills

Improve	Skill Area	Your Score
<input type="checkbox"/>	Technical skills related to my specific research area	3
<input type="checkbox"/>	Experimental design	n/a
<input checked="" type="checkbox"/>	Statistical analysis	2
<input type="checkbox"/>	Interpretation of data	4
<input type="checkbox"/>	Creativity/innovative thinking	4
<input type="checkbox"/>	Navigating the peer review process	3

Communication

Improve	Skill Area	Your Score
<input type="checkbox"/>	Basic writing and editing	5
<input checked="" type="checkbox"/>	Writing scientific publications	3





Outputs a printed, unique Individual Development Plan

Individual Development Plan
for
Bruce Jenkins

Personal Information
Title: Graduate student
Institution: UCSF
Position start date: 9/8/2008
Position end date: 12/30/2013
Research project: The role of hydrogen bonding in enzyme catalysis
IDP last modified: 3/3/2014

Career Plans Summary

Plan A
Long Term Goal: Writer for a journal news section
Short Term Goal: Science communication certificate (UC Santa Cruz), or freelance

Plan B
Long Term Goal: Teaching at a community college
Short Term Goal: more teaching experience

SMART Goal Summary
Note: goals after 12 months from now are not shown.

December, 2013
• Write a "results" section each Friday for the work I did. [weekly]

September, 2014
• Read Science and Nature "highlights" sections, and choose 1 article to read more deeply [monthly]
• Write first draft of paper
• Attend science education conference

September, 2014
• Read Science and Nature "highlights" sections, and choose 1 article to read more deeply [weekly]
• Write first draft of paper
• Prepare for Thesis Committee Meeting
• Prep for and give journal club presentation

October, 2014
• Write & submit abstract to ASBMB conference

November, 2014
• Do informational interview with 3 more science writers

December, 2014
• Do informational interview with 3 more science writers

Career Advancement Goals

Name: Write an article for science column in graduate newsletter
Frequency: monthly
Start date: 5/7/2014
End date: 7/2/2014
Accountability: Tell editor of paper that I will be submitting articles monthly.
Completed: No

Name: Convert my CV into a resume
Frequency: monthly
Start date: 1/7/2014
End date: 1/9/2014
Accountability: Show to spouse after updated.
Completed: No

Name: Update my teaching-focused CV
Frequency: monthly
Start date: 3/1/2014
End date: 3/15/2014
Accountability: Will show updated CV to spouse.
Completed: Yes



Receive monthly email reminder about your goals

Individual Development Plan Update

noreply@aaas.org
Monday, December 31, 2012 9:48 AM

To: Fuhsman, 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 [update](#)
Target completion date: 8/1/2012
Accountability plan: n/a

Smart Goal: Prepare for Thesis Committee Meeting [update](#)
Target completion date: 9/28/2012
Accountability plan: Thesis committee meeting already scheduled.

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

Smart Goal: Write & submit abstract to ASBMB conference [update](#)
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 [update](#)
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. Or, 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.

What can you do to
 increase likelihood
 that you'll take action
 toward achieving these goals?



Creating a plan

Goals

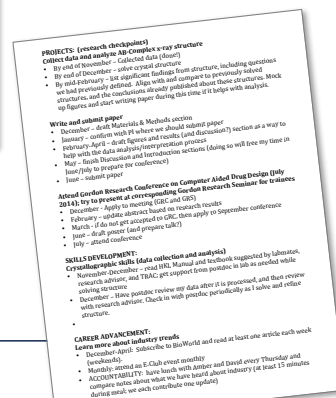
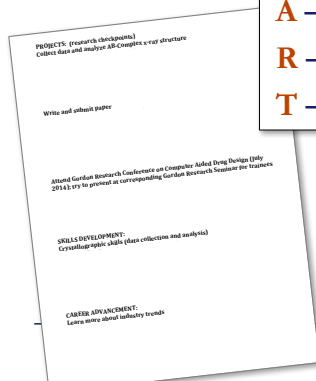


Actions

What do I want
to accomplish?

- S** – Specific
- M** – Measureable
- A** – Action-oriented
- R** – Realistic
- T** – Time-bound

What will I **do** to
reach these goals?



Creating a plan: **Project goals** – what you need to do to graduate or advance in program

Goal  Actions

Write a paper

S – Specific
M – Measureable
A – Action-oriented
R – Realistic
T – Time-bound

Identify and sketch figures
Draft materials & methods
Draft results
Draft discussion
Draft introduction
Draft abstract & title

★Meet with advisor at each point, and tell advisor the next draft deadline

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Creating a plan: **Project goals** – what you need to do to graduate or advance in program

Goal  Milestones

Solve crystal structure of Protein A

S – Specific
M – Measureable
A – Action-oriented
R – Realistic
T – Time-bound

If I cannot purify Protein A by...

<date 1> , then get feedback from colleagues/experts.

<date 2>, try a different approach.

<date 3>, discuss dropping project

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Set Project Goals

Activity

- Using Page 6 of your Worksheet, set one or more SMART goals that will lead to advancement in your research project

Specific	– smaller task
Measurable	– can measure success?
Action-oriented	– <i>how</i> verbs
Realistic	– difficulty and timing
Time-bound	– set a deadline

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Creating a plan: Career advancement goals

Goal  Actions

Learn more about
Industry careers.

S – Specific
M – Measurable
A – Action-oriented
R – Realistic
T – Time-bound

- Read about research-in-industry careers in January
- Attend 2 career panel events in January-March
- Talk to three scientists in industry (informational interviews)

★ Lunch with friends Thursdays:
and share what we each learned

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Creating a plan: Career advancement goals

Goal  Actions

Get a postdoc position (renewable energy field) at a national lab.

S – Specific
M – Measureable
A – Action-oriented
R – Realistic
T – Time-bound

- Find out what labs are doing interesting research in January
- Create a solid resume/CV
- Draft cover letter/email
- Email lab heads at labs I'm interested in
- Practice interview skills

- Make appt with PhD career advisor at Career Services before each step to get advice

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Set Career Advancement Goals

Activity

- Using Page 6 of your Worksheet, set one or more SMART goals that will help you move forward toward your post-PhD career step

Specific – smaller task
Measurable – can measure success?
Action-oriented – *how* verbs
Realistic – difficulty and timing
Time-bound – set a deadline

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Common reactions...

- This is clarifying!
- It is a relief to have a roadmap.

- This is daunting!
- How can I get all this done?!?

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Creating an IDP helps you identify where **mentors** might help

- Have a scheduled “big-picture” meeting periodically

- Purpose of meeting:
 - What are my strengths? Areas where I could grow?
 - I plan to complete this project on this timeline.
 - Can you help me develop this skill?
 - Can you introduce me to scientists in ___ field?

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IDP/career planning resources

myIDP.sciencecareers.org



myIDP Articles
Special Collection

ChemIDP.acs.org

The screenshot shows the ChemIDP website interface. At the top, there is a navigation bar with options: ASSESS YOURSELF, STRENGTHEN YOUR SKILLS, SET GOALS, and EXPLORE CAREERS (highlighted). Below this is a section titled "EXPLORE CAREERS". On the left, there is a sidebar with "JOB SECTOR" options: INDUSTRY, GOVERNMENT, ACADEMIA, NON-PROFIT, and ENTREPRENEURSHIP. Below that is "ROLES AND RESPONSIBILITIES" with a list of tasks like Analyzing, Assuring Quality, etc. The main content area shows a "Consulting" role under "Entrepreneurship > General" with a list of responsibilities: Managing (Time, Projects, and People), Educating and Training, Assuring Quality, Developing Procedures and Policies, and Marketing. There is a "READ MORE" button. Below that, a "High School Chemistry Teacher" role is partially visible under "Academia > High School".

Planning via an IDP will help you...

- Consider the big picture
 - Be proactive earlier
 - Focus their efforts
 - Seek help from mentors
 - Clarify expectations
 - Minimize conflicts
 - Maximize productivity
- ... for research *and* career development

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University of California
San Francisco