Individual Development Plan for Graduate Students

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[This document is adapted from IDP recommendations of FASEB and ScienceCareers]

Individual Development Plans (IDPs) provide a planning process that identifies both professional development needs and career objectives. Furthermore, IDPs can serve as a tool to help facilitate communication between trainees and their mentors. IDPs start generically by emphasizing skills necessary for diverse career paths, and become more individualized as the career goals of the individual student change and materialize over the course of their graduate career.

Goals

An annual IDP is one component of a broader mentoring program. Specifically, it helps graduate student trainees:

- Create annual plans to reach their career goals
- Establish target dates for academic and research milestones
- Set goals and sub-goals for the coming year, including how to distribute effort
- Define in detail the approach they plan to take in order to obtain the specific skills and strengths needed (e.g., courses, presentation skills, ethics, teaching, supervision) along with anticipated time frames for obtaining those skills and strengths.

Benefits

By using a development plan, graduate student trainees will have a process that assists them in developing long-term career goals. Additionally, identifying short-term (annual) goals will give them a clearer sense of expectations and help identify milestones along the way to achieving specific career objectives. The IDP also provides a tool that can be used to provide structure to conversations between the trainee and the trainee's mentor.

Outline of the IDP Process:

The development, implementation and revision of the IDP require a series of steps to be conducted by you, and then discussed with your mentor. The process is intended to be highly interactive, and ideally both you and your mentor will fully participate. It is important that the resulting discussions are open and honest communications between you and your mentor. In some occasions, an additional faculty member(s), such as your thesis committee, may be useful to facilitate this process.

BASIC STEPS

	For student	For Mentor
Step 1:	Perform self-assessment	Become familiar with career opportunities
Step 2:	Survey career opportunities	Discuss assessment and opportunities
Step 3:	Write an IDP and share with Mentor to set goals, and revise	Review IDP, set goals, and help revise
Step 4:	Implement plan and revise as needed	Help revise annually or as needed

Developing and implementing your IDP

An IDP is not just another performance assessment. The IDP emphasizes identifying and obtaining the knowledge and skills necessary for you to accomplish the career goals you have set forth. As part of this document, you will find an outline of items to focus on during your graduate career and a series of worksheets to aid you in developing and documenting your IDP. Writing your IDP is just the beginning of the career development process and serves as the road map.

- Before setting goals, take a realistic look at your current skills and strengths using the worksheets below.
- Outline your long-term career objectives; including surveying what career opportunities are available. This will help you plan your development.
- Discuss your plan with your mentor(s): Plan to set an annual (or more frequently if appropriate) meeting with your mentor to review and discuss your IDP. Be sure to prepare a written outline or agenda for this discussion. Use the provided worksheets prior to meeting with your mentor to help facilitate the discussion and to create a prioritized list of the most important items you wish to discuss, areas where you are seeking advice, and goals for the discussion.
- Keep a written record of that meeting in the sense of modified goals, timelines and outcomes.
- Put your plan into action: Read it over regularly to check your progress.
- Revise and modify the plan as necessary: Your IDP plan is not cast in concrete; it will need to be modified as circumstances and goals change. The challenge of implementation is to remain flexible and open to change.

Importantly, be willing to respond to feedback provided during your discussion with your mentor. They are giving you the best guidance based on their knowledge and experience.

Guidelines for IDP development by career stage

Early Career

The first two years of graduate school are critical for mastering the discipline, knowledge and skills needed for success as a research scientist; for acquiring scientific knowledge from the classroom and by reading the primary literature; and for developing oral and written communication skills. This is a time of generalized learning where you are building the foundation on which to build your career. In addition, this is a busy time when you have a higher course load, are getting acquainted with your new lab and project, and are preparing for you qualifying exam. However, it is a perfect time to start researching career opportunities to discuss with your mentor, because making these choices early will help you in selecting your academic experiences and developing your individual professional skills.

Career development*:*

- Begin to learn about various career opportunities for those with a PhD in science.
- Establish a clear set of goals that you wish to accomplish this year and next.
- Discuss these goals with your mentor

Opportunities of learning that will aid you in making career decisions during this time can come from:

Curriculum:

- Take the courses you need to become literate at a graduate level in your area of interest.
- Read primary literature and reviews.
- Attend seminars within and outside your area of focus to broaden and deepen your scientific knowledge base.

Scientific research skills*:*

- Learn to design an experiment to address a scientific question that would generate a conclusive answer from the results.
- Learn the skills of problem-solving, which is one of the most sought-after skills employers want from

those with graduate degrees.
- Learn to plan and execute an experiment and record the results in a form that could be published.
- Begin to interpret your results and assimilate new knowledge to formulate good scientific questions.

Participation in the scientific community:
- Understand the standards of professional and ethical scientific conduct and be committed to upholding them.
- Form appropriate support relationships with mentors, peers, and administrative staff.

Communication skills*:*
- Learn to organize, interpret and present your research results using the appropriate graphics and text.
- Learn to communicate your research results effectively in an oral and visual presentation to your colleagues and to a general audience.
- Learn to communicate scientific concepts effectively through writing.
- Take every opportunity to get presentation experience.

Mid career

During the third and fourth years of graduate school you will begin to recognize the career paths that interest you. It is also the time when your IDP becomes tailored to your long-term career goals. Remember, it is perfectly fine not to know for sure what you specifically want to do or to have multiple career options at this time. These goals develop over time based on your personal interests and experiences. You are becoming more knowledgeable in your field, becoming more independent in your work, playing a larger role in designing your project and should be grasping the entirety of what a good scientist must consider and do to be successful. Your sense of belonging to the scientific community should develop. Your longer-term goals should emerge in order to make appropriate decisions regarding experiences you will need to propel yourself into the next stage of your career.

Career development:
- Discuss these goals with your mentor and thesis committee.
- Along with your mentor, identify available opportunities that will give you the skills necessary to successful move to the next stage in your career. For example, do you need teaching experience, additional exposure to the private industry or governmental environment or assistance in developing scientific writing skills?

Building upon the skills obtained from your early career years, you will want to focus on:

- Reading the literature to become an expert in your field.
- Obtaining knowledge that will broaden the scope of your work.
- Learning to be critical of the literature and what you hear in a seminar.
- Learning to think creatively, troubleshoot your own experiments, and develop your scientific independence.
- Becoming proficient with working in teams of scientists and support staff.
- Developing an understanding of the overall philosophy of research/the scientific method.
- Soliciting feedback from mentors and peers about your presentation skills and strengthen your skills.
- Learning how to improve your writing.
- Seeking opportunities to develop teaching skills.

The Final Years

This is where the "individual" in IDP really takes on a life of its own. As you finish your graduate career, careful reflection is needed to ensure that you have aligned your skill needs with the career goals you have decided upon. Here you are also taking ownership of your research and scientific career.

Career development:

- Generate a clear plan for completing your PhD thesis research.
- Establish very specific training needs to make you highly competitive in the job market.
- Discuss your goals with your mentor and thesis committee.
- Reflect on your strengths, weaknesses and passions as you think about your next career stage and what the best career fit is for you.
- Find individuals who share that passion and can give you practical advice on how best to proceed to the next career stage in your training or employment.

Regardless of your career choices, at this stage you are expected to be an expert in your specific field of research. Demonstrate this by:

- Exhibiting your scientific expertise through more effective planning and implementation of experiments.
- Having knowledge of the literature and its significance to your field.
- Articulating how your work contributes to the knowledge in your field.

Annual Individual Development Plan (IDP) Year of Study:____

Name:_____ Today's Date:_____

Part 1: State your career goals and evaluate your progress during the past year.

Mentor: _____

List any additional mentors: _____

What is your "Next Step Career Goal" (postdoctoral training, job, etc)?

What is your "Long Term Career Goal" (academic, industry, teaching)?

If your career goals have changed in the past year list why:

What were your main career goals for the past year?

Which goals did you meet? If you did not meet a goal, why not? How have you modified this goal for the coming year?

Following are several worksheets that should be used to help you navigate the IDP process. It is important to use these prior to meeting with your Mentor as a means to facilitate the IDP discussion and ensure that you and your Mentor are on the same page.

Skills Assessment Worksheet

This assessment should be done by yourself and then discussed with your mentor. As part of the process, this should be performed annually to identify areas of growth from previous assessment as well as identify new or continuing growth opportunities. It is important to note, that as a professional development plan, this assessment examines overall skills in the field and not specific techniques. Most of these skills are necessary regardless of career path. Since an IDP is individualized, additional areas of experience will need to be added in the later years of your graduate career based on your individual career choice expectations. For example, will you need greater than average teaching experience or opportunities to interact with patent attorneys or individuals in industry?

Self Evaluation: Assess your strengths, weaknesses and skills

Evaluate your skills and abilities in the following areas where:

1 = Highly deficient
2 = Have only minimal skills
3 = Some skill
4 = Do well, but some improvement needed
5 = Highly proficient

It is expected that your individual scores will be a broad range on the scale. If you have all 5s then it is time for a difficult conversation (see Interpersonal Skills) between you and your mentor.

Please use the "Other" category to write in anything specific item for you that is not listed.

Scientific Knowledge:		1	2	3	4	5
	Broad based knowledge of field	1	2	3	4	5
	Knowledge of literature related to my project	1	2	3	4	5
	Critical evaluation of scientific literature	1	2	3	4	5
	Other:	1	2	3	4	5
Laboratory Skills* :						
	Data management/organization	1	2	3	4	5
	Lab notebook maintenance	1	2	3	4	5
	Other:	1	2	3	4	5
General Research Skills (e.g., designing experiments, creativity):						
	Designing experiments	1	2	3	4	5
	Interpretation of data	1	2	3	4	5
	Problem solving/troubleshooting	1	2	3	4	5
	Creativity/developing new research directions	1	2	3	4	5
	Statistical analysis	1	2	3	4	5
	Other:	1	2	3	4	5
Communication:						
	Oral presentation skills	1	2	3	4	5
	Grant writing skills	1	2	3	4	5
	Manuscript writing skills	1	2	3	4	5
	Writing for non-scientists	1	2	3	4	5
	Abstract writing skills	1	2	3	4	5
	Teaching in a classroom setting	1	2	3	4	5
	Training others	1	2	3	4	5
	Being mentored	1	2	3	4	5
	Speaking clearly and effectively	1	2	3	4	5

	Presenting research to scientists	1	2	3	4	5
	Presenting to non-scientists	1	2	3	4	5
	Other:	1	2	3	4	5
Leadership and Management Skills:						
	Leading and motivating others	1	2	3	4	5
	Managing projects and time	1	2	3	4	5
	Organizational skills	1	2	3	4	5
	Providing constructive feedback	1	2	3	4	5
	Other:	1	2	3	4	5
Responsible conduct in research:						
	Careful recording keeping	1	2	3	4	5
	Understanding data ownership	1	2	3	4	5
	Understanding scientific misconduct	1	2	3	4	5
	Understanding scientific ethics	1	2	3	4	5
	Responsible conduct using human or animal subjects	1	2	3	4	5
	Other:	1	2	3	4	5
Interpersonal Skills:						
	Getting along with others	1	2	3	4	5
	Seeking advice from knowledgeable individuals	1	2	3	4	5
	Responding to advice	1	2	3	4	5
	Conflict resolution	1	2	3	4	5
	Having difficult conversations	1	2	3	4	5
	Networking/meeting new colleagues	1	2	3	4	5
	Meeting deadlines	1	2	3	4	5
	Other:	1	2	3	4	5

* As an example, if your career path needs tissue culture or animal experimentation, these “skills” would go here.

Worksheet to set goals and learning objectives for the next year.

In the "Setting Goals" sections, you will set goals for developing your skills and accomplishing your projects during the coming year. You should set no more than 2 goals in each domain area.

For each item, it is important to determine how you will improve in these areas. This could include further reading, discussions with individuals having specialized training in that area, webinars, seminars, attending conferences or workshops. In addition, assign a timeline for which this will be accomplished and be sure to prioritize each as low, medium or high priority. These items need to be specific, accomplishable and appropriate to your stage of training. They could be designated as short- or long-term goals.

Scientific Knowledge

In what areas do you want to acquire more **scientific knowledge**?

Knowledge area	Method for knowledge	Timeline	Priority

Research/Laboratory Skills

What further **research-related or laboratory skills** do you need to acquire to be successful in this step of your career and in the next step? (See the Skills Assessment Worksheet.)

Skill	Method for skill	Timeline	Priority

Oral and Written Presentation Projects Skills

What presentations and posters do you plan to present in the next year at lab meetings, journal clubs, in-house seminars and scientific meetings? How can you improve upon these skills?

Skill	Timeline	Priority

Leadership, Interpersonal, and Communication Skills

What specific skills do you need to acquire or improve in the coming year?

Skill	Method for skill development	Timeline	Priority

Career Development

List activities that you will complete during the next year to learn more about and move closer to your major career goal. What specific knowledge or experiences are you missing related to the career choices you are considering?

Career Development Project	Timeline	Priority

Time Management Worksheet

The purpose of this worksheet is to help you reflect on your time management. This is a great exercise to see where your time is spent and help you determine if you are prioritizing your time wisely to accomplish your career objectives. This is a personal reflection that you may or may not what to discuss with your mentor during your IDP meeting.

1. How many hours do you spend per week doing work-related activities?
    a. Is this a good balance to achieve your goals at work and in your personal life?
    b. Do you want to increase or decrease this time in the coming year?

2. Provide a ***rough estimate*** of your time: What % of your time at work was spent on each of the following activities ***during the past year***?

Advancing Your Research			
Performing research			
Discussing your research with others			
Attending science seminars			
Reading in your field			
Reading to expand your knowledge of other fields			
Writing papers or grants			
Other lab management, lab duties			
Teaching, Mentoring, and Leadership			
Teaching in the classroom			
Mentoring in the lab			
Volunteer or leadership activities (committees, etc.)			
Career and Professional Development			
Attending training/career development seminars/workshops			
Networking to promote your goals (socializing, emails, etc.)			
Career exploration (information interviewing, reading about careers, visiting career counselors)			
Job search activities (CV writing, researching job opportunities)			
Socializing, e-mails, other activities not directly promoting your goals			
Coursework			
Time in class			
Time working on classwork			
Other:			

3. To reach your goals, how would you like to change the amount of time you spend on each of these types of activities (***increase***, ***same***, or **de*crease***)?

4. What is your goal for % of time (***rough estimate***) spent on each activity for ***this coming year***?