

DOCTORAL PROGRAM IN CHEMICAL AND BIOLOGICAL SCIENCES

Individual Development Plan

Student Name: _____ Advisor: _____ Date: _____

This Individual Development Plan (IDP) has been designed to provide a set of key points for you to flexibly consider and discuss with your Ph.D. advisor (and other mentors). The major objective of your Ph.D. work is to make an outstanding contribution at the frontier of your field of research, and in the process to build and acquire a track record and many tools for a highly successful future career. Accordingly, this IDP's goal is to help you optimize and integrate your specific project/lab and broader professional development plans, within the context of both short- and long-term goals.

Complete the sections on pages 1 and 2 of this IDP with brief summaries/points of the outcomes of your thinking and discussion. Appended after page 2, you will find additional points that you may find useful to consider at different stages of your Ph.D., a worksheet for self-assessment, and additional resources. As you progress through graduate training, you may find it helpful to periodically revisit and revise your IDP.

Short-term goals

List your goals for the current year of graduate school. Include both research and broader professional-development goals.

List your achievements and contributions. Include points related to your graduate school progress, your lab, and Graduate Program.

List areas where you think you have room for growth or improvement.

List areas you think your advisor or the Graduate Program could improve. Could other resources be provided that would be helpful?

Long-term Goals

What are your long-term career goals? Have they changed over the past year?

Do you have the resources and support (from your advisor, committee, lab, CAPS, etc.) to make informed choices and chart your course? Would you benefit from additional advice and resources (through other faculty, the Graduate Program, alumni, CAPS, Ombuds Office, etc.)? Are you making plans and have you begun to access any additional needed resources?

Have you set a timeline and started preparing for the next steps of your career (especially important starting year 4)? For example, if you plan on pursuing a postdoctoral position, you'll generally want to start choosing potential labs and applying at least 8-12 months ahead of time.

Goals for the coming year

List your goals and expectations for the next year of graduate school. Include both research and broader professional development goals. Consider how best to integrate these goals into your long-term plans.

Appendix A: Additional points for consideration

The points below have been split up into those mainly relevant for first, middle and last years in graduate school. You may find it useful to look through the full list.

First-year students

1. What qualities are you looking for in a **potential thesis advisor/mentor** (mentorship style, level of independence)? Have you found these qualities in any of your rotations thus far?
2. What qualities are you looking for in a **thesis laboratory** (size, other students, specific research topics, expertise in specific techniques)? Have you found these qualities in any of your rotations thus far?
3. Do you plan on applying for **fellowships** this year? If so, what are the deadlines? You may consider taking the fellowship writing class to help with the process.
4. Do you have any concerns about the first year of graduate school and beyond? What would help to alleviate these concerns?
5. Where do you see yourself in one year? What do you hope to have completed by then (establish lab, committee, thesis project, etc.)?
6. What resources or support mechanisms do you plan on using to help you accomplish your goals (e.g., your advisor, other faculty, fellow students, postdocs, [Career & Postdoctoral Services Office](#), other, etc.)?
7. Could other resources and/or support be provided that would be helpful? Please discuss this with your faculty mentor, the Office of Graduate Studies, CAPS, and the academic advisors, as this feedback can be used to improve the program.

Action Plan

1. What skills will you work on improving this year that are important to your development? What is your plan for improving these skills? (See page 5, "Appendix B: Assess Your Skills")
2. What activities/resources have you identified that will help you achieve your academic objectives this year? (Be sure to ask your program advisor about additional resources)
3. Given the fellowship deadlines, when will you start putting the application together? Plan to start early enough so that you can receive feedback from your colleagues and mentor(s), including your advisor, postdocs, and other students on the initial draft of your proposal.

Second/middle years

1. How is your thesis project (or projects) progressing? Consider both smaller pieces of the project(s) and larger context, such as how you are progressing towards making a substantive contribution to the field, presenting at meetings, publishing papers, and how your accomplishments fit into the overall context of a thesis.
2. Related to the above, think about whether you are taking responsibility for developing and making progress on your thesis project (while of course working closely with your mentor and lab). Consider that you are building your expertise and track record up to the point of your thesis defense, when you will be the (or at least one of a very few) world's expert on your dissertation topic.
3. Are there additional research and/or technical skills that you would like to develop or become familiar with? If needed, consider options for a specialized course and discuss with your advisor.
4. Both research and non-research career paths benefit from common training outcomes of a Ph.D., such as **critical thinking** and use of the **scientific method**, developing **creativity** and **perseverance**, gaining broad knowledge and identifying clear ways to **make a strong impact** in an area of interest, **project organization** and team-work, oral and written scientific **communication**, **grant/report writing**, **critical evaluation**, **teaching/training** and **networking**. Consider how you are using your Ph.D. process to develop these important skills (also see points 5-9 below).
5. If you are planning on a research career, consider options for developing teaching and training skills. This can include in-lab mentoring experience with junior colleagues, volunteering to be a TA for a class or participating in outreach events.

6. Do you plan to apply for fellowships? If so, what are the deadlines? Consider offering to help your advisor with writing portions of her/his proposals or providing feedback to colleagues' proposals – this can be a powerful learning experience.
7. Communication to both scientific and more general audiences is a skill valuable in a variety of careers. Consider options to develop these skills, by participating in presentations at Scripps, at local and National/International meetings, as well as outreach to the general public.
8. Preparing your candidacy and original research proposals (see also under “Final Years” below) or participating in proposal writing classes/workshops are other important venues for developing relevant writing skills and proposals for future use.
9. Explore and use the numerous professional development resources available through the [Career & Postdoctoral Services Office](#). For example, here are links to their webpages on [Career Exploration](#) and [Career Training Workshops](#)
10. Additionally, you may consider exploring other IDP-related websites. A list can be found on page 6 (“Appendix C: Additional Resources”).
11. If your long-term career goals are not directly research related, how best can you use your current graduate school experience to prepare for these goals? You will generally want to incorporate relevant experience as you go along, and not try to do everything in the last 6 months.
12. Consider updating your CV, which may help bring up areas of development that you need to work on as you progress through your Ph.D.

Final Years (4 and 5 generally)

1. Time to think concretely about wrapping up and planning your future career. Time will now pass quickly as you finish research, write papers, finish your ORP, and write and defend your thesis. Make sure you plan ahead and schedule preparations for future career plans into the mix.
2. You may find it useful to make a timeline for various activities and to update this every month or two as various components move forward and evolve.
3. If you plan on pursuing a postdoctoral position, you'll generally want to start choosing potential labs and applying 8-12 months ahead of time. You will want to balance this (and other job applications) with publishing papers and having a solid track record for your CV.
4. Developing an Original Research Proposal and defending it in your committee meeting is an important way to develop your skills to develop a research plan on a novel topic and to convey the plan succinctly. Consider how you may use this exercise to research and develop ideas for a postdoctoral fellowship or other future proposal.
5. Explore and use the numerous professional development and job search resources available through the [Career & Postdoctoral Services Office](#).
6. Update your CV. Write a draft cover letter, and get feedback on your application documents from the [Career & Postdoctoral Services Office](#).

Appendix B: Assess Your Skills

Evaluate your skills and abilities in the following areas where:

1 = Needs substantial improvement 5 = Highly proficient

Research and Professional Skills					
Critical thinking and use of the scientific method	1	2	3	4	5
Surveying and understanding literature in the field	1	2	3	4	5
Finding gaps in knowledge	1	2	3	4	5
Developing new research directions	1	2	3	4	5
Designing experiments	1	2	3	4	5
Analyzing research data	1	2	3	4	5
Presenting research to other scientists	1	2	3	4	5
Writing fellowships and grants	1	2	3	4	5
Writing manuscripts	1	2	3	4	5
Adhering to lab safety measures/policies	1	2	3	4	5
Laboratory/technical skill: _____	1	2	3	4	5
Laboratory/technical skill: _____	1	2	3	4	5
Thinking on my feet	1	2	3	4	5
Persevering and demonstrating tenacity	1	2	3	4	5
Managing my time effectively	1	2	3	4	5
Speaking about science to non-scientists	1	2	3	4	5
Speaking before large groups	1	2	3	4	5
Communicating clearly in writing	1	2	3	4	5
Problem solving/troubleshooting	1	2	3	4	5
Thinking creatively or “outside-the-box”	1	2	3	4	5
Locating and assimilating new information rapidly	1	2	3	4	5
Breaking down difficult or dense content	1	2	3	4	5
Responding to, and learning from, constructive criticism	1	2	3	4	5
Persuading or influencing others	1	2	3	4	5
Reaching and defending independent conclusions in a collegial manner	1	2	3	4	5
Performing in high-pressure environments	1	2	3	4	5
Creating vision and goals	1	2	3	4	5
Organizing things, creating systems	1	2	3	4	5
Teaching skills or concepts to others	1	2	3	4	5
Leading and motivating others	1	2	3	4	5
Managing complicated personalities	1	2	3	4	5
Negotiating agreement between parties	1	2	3	4	5
Working independently with limited supervision	1	2	3	4	5
Seeing the big picture	1	2	3	4	5
Maintaining a professional network	1	2	3	4	5
Interviewing and negotiating for jobs	1	2	3	4	5

Of the skills you have assessed above:

1. Identify the skills you enjoy using.
2. Identify a few that you want to improve. How might you develop those skills?

Optional: Share this skills assessment with your advisor or other mentors for feedback. Then, refer to this assessment as you prioritize and set goals.

Appendix C: Additional Resources

Other Individual Development Plans:

- **MyIDP** <http://myidp.sciencecareers.org/>
Online IDP from AAAS/ScienceCareers.org.
- **ChemIDP** <https://chemidp.acs.org/>
Online IDP developed by the American Chemical Society.
- **ImaginePhD** <https://www.imaginephd.com/>
Career exploration tool that can be especially useful for trainees interested in non-bench careers.
- **Stanford Biosciences Student IDPs** <https://biosciences.stanford.edu/current-students/idp/forms/>
Different IDP forms, in PDF format, broken down by year in graduate school.
- **AAMC Compact Between Biomedical Graduate Students and Their Research Advisors** <https://www.aamc.org/initiatives/research/gradcompact/>
Intended to initiate discussions about the grad student-advisor relationship.
- **BWF-HHMI Performance Review Form** <https://www.hhmi.org/developing-scientists/making-right-moves>
One-page performance review found in Chapter 3, Appendix 2.

Career & Postdoctoral Services Office:

- Website features self-assessment, career exploration, and job search resources. The site also includes **fellowship lists and RCR information, career exploration and internship opportunities, a peer editing program, a list of on-campus career workshops**, and more. <https://education.scripps.edu/postdoctoral/>
- **Individual career advising appointments** to address: IDPs; resumes, CVs and cover letters; academic job search and teaching philosophies; interview preparation; networking strategies; job offers & negotiation; non-academic career routes; and LinkedIn profile optimization. Email cpsos@scripps.edu for an appointment.
- **“Effective Career Planning for PhDs,”** a 1-credit graduate course, is intended to encourage proactive career planning by equipping students with the skills, resources, confidence, and self-assessment information necessary to make informed career choices both inside and beyond academia. Designed for 10-15 students and postdocs, the course includes self-assessment exercises, a career panel, career-based research assignments and student presentations, suggestions for action and experimentation, and more. In the final class session, students summarize what they’ve discovered throughout the course, outlining their progress and career plans via an IDP poster. The IDP poster session synthesizes each student’s learning, and they receive in-person feedback from both peers and course instructors about their next steps and ideas for action. One student summarized, “I was a little bit disoriented about what were my career options apart from academia. This course helped me learn about different career paths. It also helped me realize what are my skills and strengths, and how those can be applied in order to develop a successful, healthy and happy career.”

Books and Articles:

1. Evans, T. M., Lundsteen, N., & Vanderford, N. L. (2017). *ReSearch: A career guide for scientists*. (available in the CPSO resource library)
2. Sinche, M. V. (2016). *Next gen PhD: A guide to career paths in science*. (available in the CPSO resource library)
3. Vincent, B. J., et al. (2015). Yearly planning meetings: individualized development plans aren’t just more paperwork. *Molecular Cell*, 58(5), 718-721. doi: [10.1016/j.molcel.2015.04.025](https://doi.org/10.1016/j.molcel.2015.04.025)