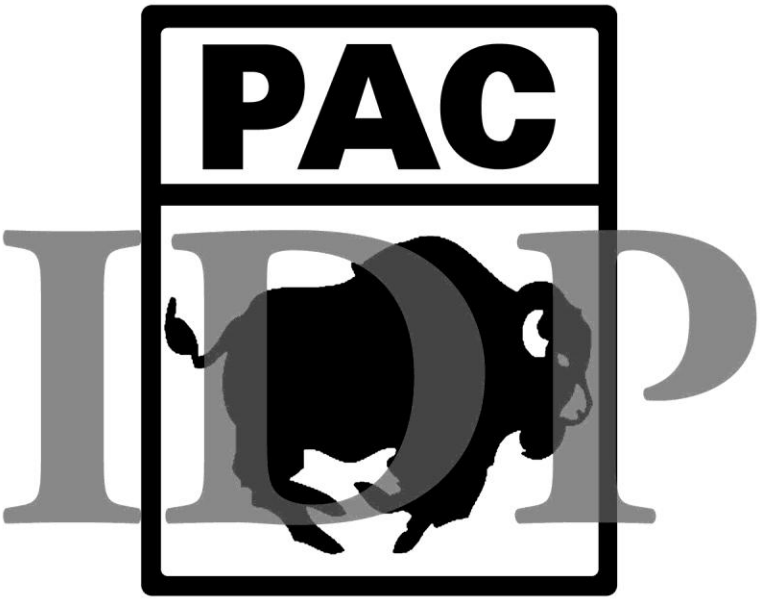
The Postdoctoral Association of Colorado

Individual Development Plan for Postdocs



PJ Bennett, Ph.D., Co- President, Postdoctoral Association of Colorado

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Personal Development Plan:

The Personal Development Plan for Postdocs is a structured method by which postdoctoral fellows can identify their long-term career goals and the steps needed to obtain them. This information is then used to facilitate communication between postdocs and faculty advisors to create a plan to achieve those goals. The complete IDP process that PAC uses is composed of 5 steps:

1. Write out long-term career goals.
2. Identify what you do and don't know.
3. Identify what products you need to produce.
4. Write out a draft IDP.
5. Review plan with faculty mentor, revise and implement, review as needed.

In the remainder of this packet we will walk through the first 4 steps of this process. It is assumed that you will arrange a time to review and revise your plan with your faculty mentor on your own. We would recommend giving your faculty mentor the individual development plan discretion pact (Appendix A) before your meeting so that they can review the process. We have also included a yearly postdocs evaluation form (Appendix B) to help facilitate yearly updates to your plan. As you progress through this document, keep in mind that one of the critically important part of this process is to write down your goals and discuss them with someone. Research has shown that the physical acts of writing and discussing your goals leads to a higher rate of success in achieving these goals.

The IDP process starts with the establishment of your long-term career goals. In this instance long-term career goals are the goals that you seek to have achieved in the next 5-10 years. There should only be one or two of these goals in this document. If you don't have an idea of what your long-term career goals are we recommend that you come into the GTP/Postdoc office for individual one on one consultation or contact career services and take and discuss a skills and interests inventory. Your long-term goal should be concrete and detailed. For example, instead of saying "I want to be a faculty member" say "I want to be a faculty member at a liberal arts college." Or "I want to be a faculty member at a liberal arts college in the north east". Another example would be that instead of saying "I want to start my own research group," you would say "I wish to establish my own research group studying the effect of habitat loss on the behavior of migratory birds at an R1 institution." In the space below, please write out your long-term goal.

My Long-term Career Goal is:

_____

_____

_____

_____

_____

_____

Postdoctoral Association of Colorado Core Competencies:

The Core Competencies Self-Assessment is an inventory covering all the skills that a professional likely needs to be successful. The purpose for taking this inventory is to identify those competencies that you have received training in and those you could use help with. That way you can include the competencies that need development as part of your individual development plan. When you are determining your preexisting level of training, imagine a continuum with Novice (1) at one end and Expert (9) at the other.

1) **Professional Research Skill Development:** Through most postdoctoral fellows' training they have learned how and where to follow the literature in their field. They have also learned what it takes to design experiments and what basic techniques they need to understand. As postdocs transition to a faculty positions they must learn to understand these things at the level of a PI. How do I follow the literature for all the experiments in my lab? How do I design experiments to take advantage of all the experiments already taking place in my lab? What impact will all the different techniques and equipment have on each other?
2) **Discipline-Specific Knowledge:** This practical category has to do with whether or not you know how to conduct and design research experiments. However it goes a little further than being able to design and conduct experiments. Can you design experiments so that your entire lab is functioning as a coherent whole? Do you know how to teach others how to do these things?
3) **Communication Skills:** Your ability to communicate effectively will play a large role in your professional successes. Communication, in a professional or academic setting, can often be broken down into two general categories. One, Management of staff and your own career, this category includes things like writing a CV or Resume or writing personnel reviews and letters of recommendation. The second is the presentation of professional or research work, this includes research publications, and conference or departmental presentations. When thinking about ranking yourself in this category ask yourself questions such as "If I wanted one of my students to get hired for a job how would I write the letter?" Another question to ask yourself "how to go about mentoring someone in these skills?"
4) **Professionalism:** When we talk about professionalism with respect to professional and research careers what we are really talking about are your abilities to connect, interact, work with, and collaborate with other members of your community. Another way to think about this is, what are the expectations that you will be placed under by the different communities you work with. You probably already know what makes you an effective, well respected, and collegial member of your lab or department, but how might they be different when you expand this to include your university campus, your international professional society or society as a whole?
5) **Leadership and Management Skills:** Management skills can be broken down into two categories. The first the management of individuals, the skills here include knowing how to mentor, delegate authorities, hire, evaluate, and terminate employees, and manage conflicts. The second is the management of projects. The skills needed here are to attain funding, set priorities, and create budgets. Questions to ask yourself here are, "Could I write a budget detailing how much money I would have to spend to keep my lab going for 1 year?" "If I was a junior professor working towards tenure and two of my students told me they could not work with each other, would I know what to do to get the research running again?"
6) **Responsible Conduct of Research:** Many people ignore the issues associated with responsible conduct of research since they say it is just following the legal polices. However, there is more to this than just policies. For instance do you know who owns all the research in your lab? Could you tell every author on a paper why their name is on a paper and why it is in the particular position it is in?

Postdoctoral Association of Colorado (PAC) Core Competencies Self-Assessment											
Rate your current level of development in each of the following, with 1 being "Novice" and 9 being "Expert."											
		1	2	3	4	5	6	7	8	9	n/a
1	**Professional Research Skill Development**										
a	Literature Search and Upkeep Strategies (From A Single experiment to a Whole Lab)										
b	Experimental Design (From A Single experiment to a Whole Lab)										
c	Laboratory Techniques and Safety										
2	**Discipline-Specific Knowledge**										
a	Broad-Based Knowledge Acquisition (Big Picture Context)										
b	Deep Content Specific Knowledge Acquisition (What do We Still Need to Know)										
c	Analytical Approach to Defining (Scientific) Questions										
d	Designing (Scientifically) Testable Hypotheses										
e	Interpretation of Data										
f	Statistical Analysis of Data										
3	**Communication Skills**										
a	Writing - Publications, Grants, Research Statements										
b	Writing - CV's, Resume, Cover Letters, Letters of Recommendation										
c	Writing - Peer Review, Grant Review										
d	Speaking – Conferences, Talks, Seminars, Posters										
e	Speaking - Job Talks, Negotiations, Promotion/Tenure Talks, Faculty Talks,										
f	Teaching – Pedagogy, Lesson Plans, Discussions										
4	**Professionalism**										
a	Laboratory/Department										
b	College/University										
c	National/International Societies										
d	Global Society										
5	**Leadership and Management Skills**										
a	Project Management - Planning, Budgeting, and Obtaining Funding										
b	Project Management - Establishing Priorities, and Time Management										
c	Staff Management - Advertising for, Hiring, Mentoring, and Evaluating Staff										
d	Staff Management - Conflict Management and Policy Compliance										
e	Leadership - Identify and Clarify Goals, Running Meetings, Delegating										
f	Leadership - Motivating/Inspiring Others, Serving as a Role Model										
6	**Responsible Conduct of Research**										
a	Determining Data Ownership (What Belongs to Whom)										
b	Criteria for Determining Authorship (Who Gets Credit for What)										
c	Mitigating Conflicts of Interest										
d	Identifying and Mitigating Research Misconduct										
e	Identifying and Following Proper Procedures for Research Involving Human Subjects										
f	Identifying and Following Proper Procedures for Research Involving Animals										

IDP Step One Skills and Accomplishments Needed

Now that you have written out your main goal(s) and taken a competency self inventory, you are ready for the first step in writing your IDP. The first step is to determine what projects you need to accomplish and what skills you need to gain in order to accomplish them. To return to one of my earlier examples, my long-term career goal is to establish my own research group studying the effect of habitat loss on the behavior of migratory birds at an R1 institution. One step may be I will need to gain the skills of managing personnel; I need the skill of managing a budget. To get hired I need to get two papers published in the next three years.

List The Skills You Need to Work on for Your Chosen Career Goal:

1: _____

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2: _____

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3: _____

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4: _____

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5: _____

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List the Main Products You Need to Produce For Your Chosen Career Goals:

1: _____

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2: _____

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3: _____

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4: _____

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5: _____

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IDP Step Two: Identifying Challenges and Obstacles

Successfully achieving your goals is also dependent on understanding what challenges and obstacles you need to overcome. Some of these obstacles will be internal, whereas others will be external. The following questions on this sheet will help you identify what the obstacles will be.

Skill or project: _____

What other responsibilities do I need to take care of while I am accomplishing my goal?

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What obstacles am I facing this year?

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Which bad habits do I need to control to reach my goal?

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What personal changes do I need to make to reach my goal?

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IDP Step Three: Converting Needs Into a Plan

In this step you will take one of your needs and convert it into a plan. The practical structure of this sheet is set up around a 3-5 year plan. The first step will be to identify yearly mile stones. For your project with the list mile stone being that the project is complete. You should complete one of these sheets for each skill and product listed in Step One.

Skill or Project: _____

Year 1: _____

Year 2: _____

Year 3: _____

Year 4: _____

Year 5: _____

Now that you know what you will be doing each year, we will take year 1 and further divide it into sub goals. Specifically, we will assume that you started the project at the beginning of year one and you will have completed the year one mile stone when you start year two (Some people even like assigning specific dates to mile stones). Each of your sub goals will then be further divided into work plans. This means that each sub goal should be a discrete statement that can be completed. Some of the additional questions to think about while you write this plan are: Where am I right now with respect to this goal and what do I need to accomplish this year? Who can help me with this goal?

Sub Goal 1: _____

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Work Plan: _____

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Sub Goal 2: _____

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Work Plan: _____

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IDP Step Three: Converting Needs Into a Plan

Sub Goal 3: _____

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Work Plan:_____

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Sub Goal 4: _____

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Work Plan:_____

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Sub Goal 5: _____

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Work Plan:_____

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Work Plan:_____

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Sub Goal 2: _____

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Work Plan:_____

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IDP Step Three: Converting Needs Into a Plan

Sub Goal 3: _____

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Work Plan:_____

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Sub Goal 4: _____

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Work Plan:_____

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Sub Goal 5: _____

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Work Plan:_____

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References:

Goal Setting

Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. By Locke, Edwin A.; Latham, Gary P., American Psychologist. Vol 57(9), Sep 2002, 705-717.

Discipline-Specific Knowledge

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Making the Right Moves (2004). Chapter 8: Lab Notebooks and Data Management. Chapter 10: Research Funding Process. Research Triangle Park, NC: Burroughs Wellcome Fund. Chevy Chase, MD: Howard Hughes Medical Institute. http://www.hhmi.org/labmanagement7

Boss, Jeremy M; Eckert, Susan H (2003). Academic Scientists at Work: Navigating the Biomedical Research Career. Chapter 3: Grant Writing and Review Process. Chapter 6: Peer Review Process for Scientific Manuscripts. New York: Kluwer Academic/Plenum Publishers.

McCabe, Linda L.; McCabe, Edward R.B (2000). How to Succeed in Academics. Chapter 12: Writing Research Manuscripts. Chapter 14: Peer Review Process. San Diego, CA: Academic Press.

Professional Research Skill Development

CBE—Life Sciences Education (http://www.lifescied.org/)

ASCB Cell Web (http://www.ascb.org/cellweb/index.cfm)

McGhee CN, Gilhotra AK. Ophthalmology and vision science research: part 2: How to commence research--Eureka or that's a little unusual? J Cataract Refract Surg.2005 Nov;31(11):2205-11.

Doing a Literature Search: A comprehensive gude for the social sciences. Christopher Hart

Communication Skills

Scientific Writing

Zeiger, Mimi (2000). Essentials of Writing Biomedical Research Papers. New York: McGraw-Hill.

Gopen, George D., Swan, Judith A. (1990). The Science of Scientific Writing. American Scientist 78:550-558. Available online at http://www.americanscientist.org

Scientific Presentations

Scientifically Speaking. The Oceanography Society. Available online at http://www.tos.org/resources/publications/sci_speaking9

Purrington, Colin. Advice on Designing Scientific Posters. Available online at http://www.swarthmore.edu/NatSci/cpurrin1/posteradvice

Negotiating

Fisher, Roger; Ury, William; Patton, Bruce (1991). Getting to Yes: Negotiating Agreement Without Giving In. Boston: Houghton-Mifflin.

Conflict Resolution

Stone, Douglas; Patton, Bruce; Heen, Sheila (1999). Difficult Conversations. New York: Penguin Books.

Numerous articles archived at http://ScienceCareers.org.

Professionalism

Resources for Trainers and Organizers

The National Coalition Building Institute International (NCBI) workshop

The Level Playing Field Institute (www.lpfi.org)

In Giving Notice (2007, http://www.givingnoticethebook.com/)

Corporate Leavers (http://www.corporateleavers.org/)

Discussing Professional Identities

On Becoming a Scientist, The National Academies (1989, 1995, 2008). ISBN-10: 0-309-11970-7 (September 2008).

NIH Training website at http://www.training.nih.gov/careers/workshops.asp . Online workshops for biomedical scientists; notable: How to Succeed in Science (Without Really Trying), located at https://webmeeting.nih.gov/p33253210/ .

Diversity resources for postdocs

Cultural Competency Curriculum for Medical and/or Dental Schools, American Medical Students Association. http://www.amsafoundation.org/pdf/CulturalCompCurriculum.pdf

Career resources for postdocs

Science Careers http://sciencecareers.sciencemag.org/12

Essential Careers Guide at http://sciencecareers.sciencemag.org/career_development/tools_resources/careers_basics_booklet

Vitae Researchers Portal http://www.vitae.ac.uk/

Leadership and Management Skills

Boss, Jeremy M., Eckert, Susan H. (2003). Academic Scientists at Work: Navigating the Biomedical Research Career, Chapters 2-5. New York: Kluwer Academic/Plenum Publishers

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Training Scientists to Make the Right Moves (2006). Research Triangle Part, NC: Burroughs Welcome Fund. Chevy Chase MD: Howard Hughes Medical Institute http://www.hhmi.org/labmanagement

Making the Right Moves (2004), Chapters 3-8. Research Triangle Park, NC: Burroughs Wellcome Fund. Chevy Chase, MD: Howard Hughes Medical Institute. http://www.hhmi.org/labmanagement

Responsible Conduct of Research

Steneck, NH and Bulger, RE. 2007. The history, purpose, and future of instruction in the Responsible Conduct of Research. Academic Medicine 82(9): 829.

Macrina, FL. 2005. Scientific integrity: Text and cases in responsible conduct of research, 3rd ed. Washington, DC: ASM Press.

The federal definition of misconduct and federal RCR policy as per the Office of Science and Technology Policy: http://ori.hhs.gov/policies/fed_research_misconduct.shtml.

Anderson MS. 2007. Collective openness and other recommendations for the promotion of research integrity. Science and Engineering Ethics 13(4): 387.

Is the research community ready for the age of international collaboration? The first international conference on Research Integrity took place in September 2007: http://www.esf.org/index.php?id=4479.

Office of Research Integrity website: http://ori.hhs.gov/education/rcrrdp.

National Postdoctoral Association: http://www.nationalpostdoc.org/site/c.eoJMIWOBIrH/b.2724509/