

## The Individual Development Plan for Biomedical Graduate Students at Rutgers University

This Individual Development Plan (IDP) helps address two needs. First, it provides a structure to systematically identify training needs and competencies, establish goals and take stock of year-by-year progress during your PhD years. Thus, IDPs help graduate students stay on track with their research, publications, grant writing and skills development. Second, there are many career options for people who have obtained a PhD in the biological/bioengineering sciences. The IDP helps you plan and prepare for your post-PhD future while you are in graduate school. In both these areas, IDPs can serve as tools to facilitate communication between trainees and their mentors. The NIH [requires IDPs for graduate students](#). Furthermore, the NIH Office of Management and Budget has stated that predoctoral and postdoctoral trainees have dual roles as trainees and employees and therefore must be engaged in [both training and career development activities](#).

### Goals and Benefits

- Establish target dates for academic and research milestones;
- Set goals and sub-goals for the next year, including how to spend your time and allocate time to wellness;
- Define in detail the approach you plan to take in order to obtain the specific skills and strengths needed (e.g., courses, technical skills, teaching, supervision) along with an anticipated time frame for obtaining those skills and strengths;
- Define career goals and create annual plans to reach your goals; and
- Provide structure for conversations between you and your mentor regarding your goals and progress.
- Provide an opportunity for you to share any issues that you are experiencing your program/track director.

### **ASSIGNMENTS: IDP forms to be completed by May 31. Meetings for 2<sup>nd</sup> and 4<sup>th</sup> year students will be held by Aug 31.**

#### **First year students**

- 1) Read pages 1-5 of this Rutgers IDP document but do not complete pages 6-12.
- 2) Complete the online AAAS IDP: <http://myidp.sciencecareers.org/>
- 3) Create a CV in .docx format (see page 13 for template).
- 4) Upload the certificate of completion for the AAAS IDP and your CV to the Canvas site under Assignment for First Years.

#### **Second year students**

- 1) Read pages 1-5 of the Rutgers IDP document and complete pages 6-13 (except page 9).
- 2) Meet with your PI to discuss your IDP and have them complete page 9.
- 3) Upload completed Rutgers IDP document and updated CV to the Canvas site under Assignments for Second Years.
- 4) Schedule a meeting with your graduate program director.

#### **Third year students**

- 1) Read pages 1-5 of this Rutgers IDP document but do not complete pages 6-12.
- 2) Complete the online AAAS IDP: <http://myidp.sciencecareers.org/>
- 3) Update your CV in .docx format.
- 4) Upload the certificate of completion for the AAAS IDP and your CV to the Canvas site under Assignment for Third Years.

#### **Fourth year students**

- 1) Read pages 1-5 of the Rutgers IDP document and complete pages 6-13 (except page 9).
- 2) Meet with your PI to discuss your IDP and have them complete page 9.
- 3) Upload completed Rutgers IDP document and updated CV to the Canvas site under Assignments for Fourth Years.
- 4) Schedule a meeting with your graduate program director.
- 5) Attend a meeting with a professional from your projected career of interest. You can either a) attend an iJOBS career panel that is appropriate to your interest or b) have an informational interview with someone in your career area. After the event or interview, you must email Janet Alder (janet.alder@rutgers.edu) with a few sentences describing what you learned as well as the name and date of the event to indicate that you are using that to fulfill your IDP requirement.

### **Competencies taught in Rutgers Biomedical Sciences PhD programs, how and when they are obtained**

- a) **Broad conceptual knowledge** – core courses (Years 1 and 2)
- b) **Deep knowledge of a specific field** – upper-level courses (Years 2 and 3), thesis work (Years 2-5), journal clubs (Years 1-5)
- c) **Critical thinking** – reading papers (Years 1-5), planning experiments (Years 2-5), reviewing grants & manuscripts (Years 4 and 5)
- d) **Experimental skills** – rotations (Year 1) and thesis lab (Years 2-5), collaborations (Years 2-5)
- e) **Responsible conduct of research** – Ethical Scientific Conduct initial (Year 1) and refresher (Year 5)
- f) **Rigor and reproducibility** – biostatistics classes (Year 1 or 2)
- g) **Computational skills** – computer programming class (Year 3 or 4)
- h) **Collaboration/Teamwork** – working with other labs & within the lab (Years 1-5), lead student organizations (Years 2 or 3)
- i) **Management and emotional intelligence skills** – manage your own project (Years 1-5), manage your time and include wellness activities (Years 1-5), interact with faculty and peers (Years 1-5), supervise and mentor undergraduates (Years 3-5)
- j) **Leadership and professionalism** – iJOBS (Years 1-5), volunteer for groups and events (Years 1-5)
- k) **Communication skills** – presentations in the lab (Years 1-5), university and national meetings (Years 3-5), writing manuscripts and fellowships (Years 1-3), Communicating Science class (Years 3, 4 or 5)

## **Annual Goals: Years 1 and 2**

**Goals and Responsibilities:** 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. It is also critical to set up system to maintain your wellness.

### **Learning:**

- Take the courses you need to become literate at a graduate level in your broad areas of interest.
- Spend enough time and effort on your coursework in order to learn what you need to know so you have a specialized background.
- Read primary literature and reviews.
- Learn about new developments and emerging knowledge in your fields of interest and research.
- Attend seminars within and outside your area of focus to broaden and deepen your scientific knowledge base.
- Determine the laboratory and/or computational skills you are likely to need.

### **Choosing a lab and thesis project:**

#### Year 1

- Select laboratory rotations (if available in your program) that will provide you with the basis to choose a thesis area.
- Spend enough time and effort in the lab to gain a good sense of your lab choices and to provide potential mentors with a positive view of your abilities and attitudes.
- Determine who you want to be your thesis mentor.

#### Year 2

- Define your thesis project.
- Decide when to take your oral/propositional qualifying exam as specified by your program guidelines.
- Determine who will be on your thesis advisory committee.

### **Scientific research skills:**

- Learn to design experiments to address scientific questions that will generate conclusive answers from the results.
- Learn to plan and execute experiments 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 as well as rigor and reproducibility and be committed to upholding them.
- Form appropriate support relationships with mentors, peers, and administrative staff.

### **Wellness:**

- Create a schedule for courses, lab rotations, and personal time to ensure there is a balance that suits your needs.
- Ensure that you are eating healthfully, exercising, getting enough sleep, and meditating/yoga/mindfulness as desired.
- Connect with family and friends on at least a weekly basis.
- Identify non-school activities that you enjoy and find time to do these on a daily or weekly basis.
- Engage with students outside your matriculation year, lab, program, track, or department
- Participate in non-curricular activities on or off-campus
- Attend mental health workshops
- Familiarize yourself with mental health resources available from Student Health

### **Communication skills:**

- Learn to organize, interpret and present your research results using appropriate graphics and text.
- Learn to communicate your research results effectively in oral and visual presentations to your colleagues and to a general audience.
- Learn to communicate scientific concepts effectively through writing.
- Decide what fellowships to apply for and identify the deadlines.
- Learn who are key contacts, in addition to your PI, for editing and helping you think through ideas.

### **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/IDP committee members.

### **Annual Goals: Year 3**

**Goals and Responsibilities:** The third year of graduate school is the first year entirely dedicated to research in the laboratory. As a member of a team, your role is to expand your interest far beyond the bench in order to: build multi-tasking skills; further your academic knowledge; expand your network through collaboration and technical interactions; improve upon your written and oral communication skills; and become an independent scientist. The third year is the pivotal point to grasp 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 with respect to scientific projects. You should also think about what career path matches your interests and goals, whether it be research, teaching, business, marketing, law, public policy, clinical research, science writing, public health, or another area.

#### **Learning:**

- Read the literature to become an expert in your field.
- Obtain knowledge that will broaden the scope of your work.
- Learn how to stay abreast with novelty in science.
- Attend an appropriate number of seminars.
- Learn to be critical of the literature and what you hear in a seminar.
- Begin to become an expert in your area of research.
- Learn to balance lab work efficiently with time spent reading literature.
- Improve your multi-tasking skills.

#### **Scientific research skills:**

- Learn to refine your research project and become more focused.
- Learn how to improve your experimental design.
- Learn to think creatively, troubleshoot your own experiments, and develop your scientific independence.
- Learn to efficiently translate results into publication quality data.
- Decide how far you are from your 1st publication or conference presentation.

#### **Participation in the scientific community:**

- Develop an understanding of the overall philosophy of research/the scientific method.
- Determine how you can improve your relationships with mentors, peers, and other scientists.

#### **Wellness:**

- Create a schedule for courses and personal time to ensure there is a balance that suits your needs.
- Ensure that you are eating healthfully, exercising, getting enough sleep, and meditating/yoga/mindfulness as desired.
- Connect with family and friends on at least a weekly basis.
- Identify non-school activities that you enjoy and find time to do these on a daily or weekly basis.
- Engage with students outside your matriculation year, lab, program, track, or department
- Participate in non-curricular activities on or off-campus
- Attend mental health seminars and workshops
- Familiarize yourself with mental health resources available from Student Health

#### **Communication skills:**

- Solicit feedback from mentors and peers about your presentation skills and strengthen your skills.
- Present your work at and/or attend a scientific meeting and begin to network.
- Apply for fellowships.
- Write an abstract, research paper or review article.
- Learn how to improve your writing.
- Seek opportunities to practice your teaching skills.

#### **Career development:**

- Begin to explore different career choices by going to meetings, career fairs and networking.
- Continue to define your specific interests and objectives for your PhD studies.
- Seek opportunities for community service and outreach.
- Evaluate your strengths and weaknesses and make adjustments to your program to improve on or accommodate them.
- Develop a focused set of goals that will lead to publication of papers and development of your thesis within the next year.
- Discuss these goals with your mentor and thesis committee

## **Annual Goals: Year 4**

**Goals and Responsibilities:** As a fourth year graduate student you should be focused on your research, on writing papers and communicating your findings. By now, you should have acquired considerable expertise in your chosen field and you should be exhibiting this expertise through more effective planning and implementation of experiments, through mentoring newer lab members and through discussions with others in your scientific community. By the end of the fourth year, your thesis project should be nearing completion, or at the very least, you should have a detailed thesis outline and an attainable set of objectives for completion. You should be able to critically read the literature, identify important new problems, develop hypotheses and design experiments to test them as an independent scientist. Finally, you should begin preparing for the career path you have chosen by working on skills required for success in that environment, whether it be research, teaching, business, marketing, law, public policy, clinical research, science writing, public health or another area.

### **Learning:**

- Establish and demonstrate expertise in your chosen area of study.
- Stay abreast of the current literature in your field.
- Read the literature critically and identify assumptions, important implications and/or alternate interpretations.
- Increase your depth and breadth by attending seminars within and outside of your field.
- Decide if you can ask important questions and are developing good scientific taste and judgment.
- Learn to make connections between your research and the literature.
- Learn to develop new hypotheses and design experiments to test them.
- Develop a sense of where the field is going and what the next big question is.
- Determine if you are willing to learn new techniques and to take risks.
- Learn to write an original and competitive research proposal.

### **Scientific research skills:**

- Improve your ability to interpret data, question your assumptions and identify important implications of your findings.
- Ask important questions and design your own experiments to generate answers.
- Work with sufficient focus and intensity to drive discovery and complete your research objectives.
- Determine if you are managing your time for experiments, reading, and writing; seek help if time management is an issue.
- Develop and follow through on your own ideas.
- Seek you mentor's input on whether you demonstrate creativity and innovation in your experimental work.
- Publish a paper or prepare a manuscript for publication.

### **Participation in the scientific community:**

- Reflect on if you are developing confidence as a member of the scientific community.
- Determine if you ask questions and enter into discussions in seminars, conferences and journal clubs.
- Develop and practice a short narrative to articulate what you have discovered and why it is important.
- Solicit feedback on whether you can deliver an effective seminar and get input from peers and mentors to improve your seminar.
- Seek out and take advantage of opportunities to present your research.
- Learn to present your research results authoritatively.
- Attend local and national meetings to present your results and network.
- Seek opportunities to improve your teaching skills.
- Develop skills in leading and motivating others, and conflict resolution by mentoring others.

### **Wellness:**

- Create a schedule for lab and personal time to ensure there is a balance that suits your needs.
- Ensure that you are eating healthfully, exercising, getting enough sleep, and meditating/yoga/mindfulness as desired.
- Connect with family and friends on at least a weekly basis.
- Identify non-school activities that you enjoy and find time to do these on a daily or weekly basis.
- Engage with students outside your matriculation year, lab, program, track, or department
- Attend mental health seminars and workshops
- Familiarize yourself with mental health resources available from Student Health

### **Career development:**

- Generate a clear plan for completing your PhD thesis research.
- Determine if you are developing an original research proposal and if you understand the criteria for assessment.
- Think about your next career stage and what the best career fit is for you having evaluated your strengths, weaknesses and passions.
- Determine the skills required for success in your chosen career path and take steps to improve your skills.
- Network with people who are in the field you have chosen.
- Seek opportunities to mentor other students.
- Develop your leadership, teamwork and management skills.
- Continue to be involved in community service and outreach.
- Discuss your timetable for completion and career plans with your mentor(s) and IDP committee.

## **Annual Goals: Years 5/6**

**Goals and Responsibilities:** In the fifth year you should be focused on completing your experimental work and writing research papers. Ideally you should be thinking about your thesis and making plans for a post-graduate position as the next step in your career. As a fifth year student, you should have your thesis plans, and a chapter-by-chapter outline of your thesis, approved by your thesis committee. You will be expected to be an expert in your specific field of research, have command of the literature, and articulate how your research contributions complement those of other laboratories. By the end of the fifth year it is expected that you will have defended your thesis, or will at a minimum have a clear timeline for finishing and defending your thesis.

### **Learning:**

- Demonstrate that you are an expert in your field.
- Present and defend your work with confidence.
- Articulate how your work contributes to the knowledge in your field.
- Demonstrate that you have a breadth of knowledge in areas related to your area of research expertise.
- Balance bench work with writing papers and finalizing your thesis.

### **Scientific research skills:**

- Define a clear path and timetable for completion and publication of your thesis research.
- Identify experiments necessary for writing up the results for publication and a final thesis.
- Design experiments independently, interpret your results and determine next steps.
- Determine if you think creatively about the implications of your research to other work in the field.
- Publish any research papers and determine if they will be chapters of your thesis.

### **Participation in the scientific community:**

- Determine if you can confidently discuss the current literature in your area of expertise.
- Attend seminars, conferences and journal clubs and actively participate with questions and comments.
- Maintain good communications with mentors, peers and administrative staff.
- Communicate with your thesis committee about finalizing your research and defending your thesis.

### **Wellness:**

- Create a schedule for lab and personal time to ensure there is a balance that suits your needs.
- Ensure that you are eating healthfully, exercising, getting enough sleep, and meditating/yoga/mindfulness as desired.
- Connect with family and friends on at least a weekly basis.
- Identify non-school activities that you enjoy and find time to do these on a daily or weekly basis.
- Engage with students outside your matriculation year, lab, program, track, or department
- Participate in non-curricular activities on or off-campus
- Attend mental health seminars and workshops
- Familiarize yourself with mental health resources available from Student Health

### **Communication skills:**

- Present your research in local, national and international meetings.
- Prepare and practice your thesis seminar to be understood by your thesis committee and a diverse scientific audience.
- Demonstrate writing skills through publication of your research or writing chapters of your thesis.
- Develop your management skills by learning how to manage a budget, organize and oversee a project.

### **Career development:**

- Make plans for the next stage in your career, continue to network with people on that career path and obtain the skills necessary to be successful in your chosen career.
- Identify people who you might be interested in working with for your next phase and initiate contact with those individuals.
- Continue to mentor other students, developing your interpersonal skills and the ability to lead and motivate others including resolving conflicts.
- Continue to develop your leadership, teamwork and management skills.
- Create a well-organized thesis plan.
- In consultation with your thesis committee, set a thesis defense date.

## This form should only be completed in years 2, 4 and above. Rutgers Individual Development Plan (IDP):

Name: \_\_\_\_\_ Year Started Graduate School: \_\_\_\_\_ Today's Date: \_\_\_\_\_

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

Primary mentor: \_\_\_\_\_

Thesis committee members: \_\_\_\_\_

For students in their 4<sup>th</sup> - 6<sup>th</sup> years only, what month and year do you hope to finish your graduate degree? \_\_\_\_\_

What is your "Long Term Career Goal" (academic, industry, teaching, business, marketing, law, public policy, clinical research, science writing, etc.)? Why have you made that decision and what skills do you have that you think will allow you to succeed in that career?

What is your "Next Step Career Goal" (postdoctoral training, job, internship, etc.)? Why have you chosen this as your next step and how will it help you achieve your long-term goal?

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

What were your main research goals for the past year?

Which goals did you meet? If you did not meet a goal, why not?

New areas of research or technical expertise acquired in the past year:

Publications in the past year:

Fellowships applied for in the past year (indicate fellowship and whether awarded or not):

Local and national meetings attended in the past year (indicate meeting title, oral or poster presentation):

Oral presentations in the past year (indicate date and venue):

Teaching activities:

Mental and physical wellness: Please indicate if you have engaged in activities to improve your physical and mental health (e.g. create a schedule for lab and personal time to ensure there is a good balance; ensure that you are eating healthfully, exercise and get enough sleep; connect with family and friends on a regular basis; identify non-curricular activities that you enjoy and find time to do these; engage with students outside your matriculation year, lab, program, track, or department, participate in non-curricular activities on or off-campus, familiarize yourself with wellness resources available from Student Health, attend mental health workshops, maintain open communication with PI, graduate program director, or Assistant Dean to ensure everyone is working towards goal of helping you maintain your wellness).

- Yes, I routinely take care of my mental and physical health
- Yes, I do some but should be doing more
- No, I haven't had the chance to engage in any activities this past year

Other professional activities, including those that have helped you explore different career options:

Community/service activities, including participation on graduate student organizations, volunteer work and science outreach programs in the community:

**Part 2: Assess your skills.**

SELF Evaluation: Assess your strengths, weaknesses and skills.

Evaluate your skills and abilities in the following areas where:

5 = Highly proficient

1 = Needs improvement

	1	2	3	4	5
<b>Overall Core Scientific Knowledge</b>					
Knowledge of literature in the general field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of literature related to specific project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Laboratory or Bench Skills (e.g., microscopy, animal skills):</b>					
Skill set (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skill set (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skill set (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency and speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>General Research Skills (e.g., designing experiments, analyzing data, creativity):</b>					
Critical reading and thinking skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designing experiments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analytical/computational skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem solving/troubleshooting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creativity/developing new research directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Independence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Professional Skills:</b>					
Oral presentation skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grant writing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manuscript writing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mentoring others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teaching skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Leadership and Management Skills:</b>					
Leading and motivating others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Budgeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Managing projects and time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintaining personal mental health and wellness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizational skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Interpersonal Skills:</b>					
Getting along with others/teamwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Receptiveness & response to feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response to failed experiment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicating clearly in emails and conversation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Punctuality and work ethic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Civic responsibility in the laboratory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initiative and enthusiasm for science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to form new collaborations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to resolve conflicts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Networking/meeting new colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



MENTOR Evaluation: Ask your PI to assess your strengths, weaknesses and skills, and then return the list to you for discussion. Evaluation from last year can be provided to assess progress.

Please evaluate the skills and abilities of \_\_\_\_\_ in the following areas, where:

5 = Highly proficient  
1 = Needs improvement

	1	2	3	4	5
<b>Overall Core Scientific Knowledge</b>					
Knowledge of literature in the general field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of literature related to specific project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Laboratory or Bench Skills (e.g., microscopy, animal skills):</b>					
Skill set (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skill set (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skill set (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency and speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>General Research Skills (e.g., designing experiments, analyzing data, creativity):</b>					
Critical reading and thinking skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designing experiments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analytical/computational skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem solving/troubleshooting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creativity/developing new research directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Independence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Professional Skills:</b>					
Oral presentation skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grant writing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manuscript writing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mentoring others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teaching skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Leadership and Management Skills:</b>					
Leading and motivating others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Budgeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Managing projects and time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintaining personal mental health and wellness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizational skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Interpersonal Skills:</b>					
Getting along with others/teamwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Receptiveness & response to feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response to failed experiment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicating clearly in emails and conversation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Punctuality and work ethic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Civic responsibility in the laboratory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initiative and enthusiasm for science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to form new collaborations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to resolve conflicts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Networking/meeting new colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Part 3: 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 and achieving scientific independence. **Use SMART goals (Specific, Measurable, Achievable, Relevant and Time-Bound).**

#### **Setting Goals: Research Projects**

Scientific question: What are the **scientific questions** that you will be working towards answering in the next year? These may be individual papers (or figures within a single paper) that you aim to publish. Connect with the bigger picture in field.

Experimental approach: What are the experimental approaches that you are currently pursuing? Are there other approaches that you could try? Are there additional more promising experiments that you should be doing?

#### **Setting Goals: Scientific Knowledge**

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

Method for knowledge development: Do you plan to do more *reading* in this area? *Discuss* with specialists? Attend *conferences*?

#### **Setting Goals: Research/Laboratory Skills**

Skills Area: 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 in Part 2.)

Method for skill development: How will you gain exposure to those skills?

#### **Setting Goals: Oral Presentation Projects and Skills**

Presentation Projects: What talks and posters do you plan to present in the next year? (at lab meetings, journal clubs, in-house seminars and scientific meetings)

Presentation Skills: Are there specific presentation skills you would like to work on in the coming year?

Method for skill development: What will you do to develop these skills? (attend professional development workshops, volunteer to give more presentations, attain feedback from mentors and peers)

### Setting Goals: Writing Projects and Skills

Writing Projects: Are there any writing projects that you will be continuing or initiating this year? (fellowships, manuscripts, grants)

Writing Skills: Are there specific writing skills you would like to work on in the coming year?

Method for skill development: What will you do to develop these skills? (writing workshops, practice writing projects, seek editing assistance)

### Setting Goals: Wellness

Mental and physical wellness: Please indicate if you plan to make physical and mental wellbeing a part of your goal setting in the upcoming academic year (e.g. create a schedule for lab and personal time to ensure there is a good balance; ensure that you are eating healthfully, exercise and get enough sleep; connect with family and friends on a regular basis; identify non-curricular activities that you enjoy and find time to do these; engage with students outside your matriculation year, lab, program, track, or department, participate in non-curricular activities on or off-campus, familiarize yourself with wellness resources available from Student Health, attend mental health workshops, maintain open communication with PI, graduate program director, or Assistant Dean to ensure everyone is working towards goal of helping you maintain your wellness).

- Yes, I will include physical and mental wellbeing in my routine
- Yes, but I need to explore more of these options before I decide what I am going to do
- No, I don't have a plan, but will explore the resources available to me

### Setting Goals: Leadership, Interpersonal, and Communication Skills

Leadership, management, teamwork and interpersonal skills area: What specific skills do you need to acquire or improve? What specific skills will you work on in the coming year? (See Part 2 of this IDP for examples.)

Method for skill development: How will you work to develop these skills? (examples: attend workshops/seminars, seek advice of mentors/colleagues or advisors/counselors, ask to lead meetings and seek feedback, seek leadership positions on your campus or in a professional society.)

### Setting Goals: Career Development Projects

Career Development Projects: List activities that you will complete during the next year to learn more about and move closer to your major career goal (attend workshops, advice from counselors, conduct informational interviews with people in your desired career path, read/research potential career paths, take classes that enhance your skill set in areas related to your long term career goals).

### Setting Goals: Time Management

How much of your time do you plan to spend on each of these goals and activities? What will your effort distribution be? (take advantage of the free tutorials available on Rutgers LinkedIn Learning ! Link your LinkedIn account by going here: <https://it.rutgers.edu/linkedin-learning/> and find the time management tutorial by Dave Crenshaw)

**Part 4: Implement Your IDP**

Writing your IDP is just the beginning of the career development process and serves as the road map. Now take action!

Meet and discuss: At the end of the **second** year of graduate school, there should be a meeting of the student with the PI and then another one with the student and your graduate program/track director. The meeting with the graduate program director is an opportunity for you to share any issues that you are experiencing. At the end of the **fourth** year of graduate school, there should be a meeting of the student with the PI, then a meeting with the student and program director where again any issues can be shared. Finally, there should be a meeting with the student and a professional from your projected career of interest. For the meeting with the professional you can either a) attend an iJOBS career panel that is appropriate to your interest or b) have an informational interview with a professional in your area of interest. After you attend an event, you **must** email Janet Alder (janet.alder@rutgers.edu) with a few sentences describing what you learned and the name and date of the event to indicate that you are using that to fulfill your IDP requirement.

Put your plan into action: Read it over regularly to check your progress.

Revise and modify the plan as necessary: The 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.

**Update your CV and submit it with your IDP. A recommended format is provided on the next page.**

**Documentation of IDP meeting with PI:**

**Student:**

\_\_\_\_\_

Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

**PI (mentor):**

\_\_\_\_\_

Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

**CURRICULUM VITAE**

**NAME**

**EMAIL:**

**PHONE:**

**EDUCATION**

**UNDERGRADUATE**

University name and location

Degree, Major, Month and Year of Graduation

If you attended other institutions, list in reverse chronological order and use either dates of attendance or graduation date.

**GRADUATE**

University name and location

Degree, Program, Month and Year of Graduation or Expected date

If you attended other institutions, list in reverse chronological order and use either dates of attendance or graduation date.

**RESEARCH EXPERIENCE**

Graduate: Title of thesis, advisor, dates

Undergraduate or technician experience: Topic of research, mentor, dates

Internships: Organization, topic of research, dates

**EMPLOYMENT**

Employment not listed under research experience

**PROFESSIONAL ORGANIZATIONS**

Membership in scientific societies, dates

**HONORS AND AWARDS**

Name of award and description if not clear, date

**TEACHING EXPERIENCE**

School, course title, role, dates

**FELLOWSHIPS AND GRANTS**

Granting agency, title of project, amount of award, dates

**PUBLICATIONS** (list in reverse chronological order)

**REFEREED**

Include papers published, in press, submitted, or in preparation

**REVIEWS OR CHAPTERS IN BOOKS**

**ABSTRACTS**

**PATENTS**

**PRESENTATIONS**

Title of talk or poster at meetings or symposia, all authors, meeting name, date, location

**ACTIVITIES AND SERVICE**

Membership and leadership within organizations: Title (Treasurer, Special Events Committee Chair, etc.), name of the organization, dates.

**NOTE:** Only if applying for non-academic job the use resume and include **Summary of Qualifications** at top and **skills**.