

An Individual Development Plan (IDP) is a written list of goals tied to a schedule or timeline that serves as a roadmap towards achieving professional development and career objectives. In addition, IDPs serve as useful tools to help facilitate communication between graduate students and their mentors by providing goals and milestones at regularly scheduled times that can be evaluated and modified.

Goals and benefits of the IDP

An annual IDP is a single, but important, component of a broader mentoring program. It helps you, the graduate student:

- Establish target dates and research milestones
- Set goals and sub-goals for the next year
- Define career goals and create annual plans to reach those goals
- Identify skill and knowledge gaps and how to fill those gaps

Outline of the IDP process

The development, implementation, and revision of your IDP requires a series of steps conducted by you, and then discussed with your research mentor and your dissertation committee:

- During orientation, complete the AAAS IDP (<http://myidp.sciencecareers.org/>)
- About 1 week prior to your annual committee meeting, complete the IDP Annual Form
- Discuss your IDP Annual Form during your annual committee meeting, making revisions to part III if necessary
- In your third year, and after you have advanced to candidacy, revise your AAAS IDP
- By August 15th of each year you are in residence at UC Merced, submit a current CV and either the IDP Annual Form or your Advancement Exam results

Ph.D. program learning outcomes for the Chemistry and Chemical Biology graduate program:

1. Possess the fundamental knowledge needed to understand and critically evaluate current research in their chosen subfield of chemistry
2. Communicate fundamental concepts in their field as well as their own research effectively, in both written and oral form
3. Conduct themselves ethically and responsibly in science-related professions
4. Be proficient in laboratory, theoretical, and/or computational techniques necessary to contribute to knowledge in their chosen subfield of chemistry
5. Identify new research opportunities, plan effective strategies for pursuing these opportunities, and conduct research that makes a new contribution to knowledge in their chosen subfield of chemistry.

Annual goals, year 1:

The first year of graduate school in the UC Merced CCB program is primarily devoted to laying the foundation for your dissertation work, and therefore focuses on coursework and an introduction to research at the graduate level. Examples of activities appropriate for your first year are:

- **Fundamental knowledge**
 - Take and pass required courses.
 - Read literature
 - Attend seminar
 - Determine skills needed to succeed in chosen sub-discipline
- **Communication**
 - Give research presentation
 - Apply for fellowships
 - Learn how to improve writing
- **Ethics**
 - Pass QSB 294 (Responsible conduct of research)
- **Technical proficiency**
 - Learn how to use needed tools (computer, laser, spectrometer, etc.)
 - Learn how to execute experiments and organize results
 - Begin to interpret results
- **Identify, plan, and conduct research-**
 - Join a research group
 - Read literature
- **Career goals**
 - Begin learning about various career opportunities for those with a Ph.D. in chemistry
 - Establish a clear set of goals that you wish to accomplish this year
 - Decide on dissertation committee members
 - Meet with dissertation committee

Annual goals, year 2:

The second year of graduate school in the UC Merced CCB program is primarily devoted to gaining the knowledge and skills necessary to successfully carry out your dissertation research, and therefore focuses on making research progress, reading the primary literature, and developing oral and written communication skills. Examples of activities appropriate for your second year are:

- Fundamental knowledge
 - Take and pass remaining courses
 - Read literature
 - Attend seminar
 - Define dissertation project
 - Practice for advancement
- Communication
 - Give research presentation
 - Apply for fellowships
 - Learn how to improve writing
 - Take advancement exam
 - Draft/submit first paper
- Ethics
 - Understand standards of professional behavior
 - Develop appropriate support relationships with faculty, staff, and peers
- Technical proficiency
 - Learn how to modify known experiments
 - Learn to interpret data in the context of broader knowledge
- Identify, plan, and conduct research
 - Read literature
 - Learn to design an experiment to address a specific question
- Career goals
 - Continue learning about various career opportunities for those with a Ph.D. in chemistry
 - Establish a clear set of goals that you wish to accomplish this year
 - Pass advancement exam

Annual goals, year 3:

The third year of graduate school in the UC Merced CCB program is primarily devoted to furthering your research and laying the groundwork for your dissertation, as well as developing the skills necessary to move from *doing* research to *planning* research. Examples of activities appropriate for your third year are:

- Fundamental knowledge
 - Read literature
 - Actively participate in seminars
 - Learn to be critical of what you read and hear
 - Work to broaden your knowledge base
- Communication
 - Apply for fellowships
 - Attend a meeting
 - Write a paper
- Ethics
 - Understand standards of professional behavior
 - Develop appropriate support relationships with faculty, staff, and peers
- Technical proficiency
 - Learn to refine project and become more focused
 - Improve multi-tasking and time-management skills
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- Identify, plan, and conduct research
 - Learn to improve experimental design
 - Learn to think creatively
- Career goals
 - Explore different career choices by going to meetings
 - Continue to define specific interests and objectives for your career path
 - Network
 - Discuss these goals with your mentor and dissertation committee
 - Mentor undergraduate/junior graduate students

Annual goals, year 4:

The fourth year of graduate school in the UC Merced CCB program is primarily devoted to gathering most the data that will make up your dissertation, communicating your work to the outside world, building your professional network, and planning the next stage of your career. Examples of activities appropriate for your fourth year are:

- Fundamental knowledge
 - Establish and demonstrate expertise
 - Read literature
 - Actively participate in seminars
- Communication
 - Apply for fellowships (postdoc)
 - Attend meetings
 - Write papers
 - Outline dissertation
 - Learn to write an original and competitive research proposal
- Ethics
 - Understand standards of professional behavior
 - Develop appropriate support relationships with faculty, staff, and peers
- Technical proficiency
 - Improve ability to interpret data
 - Learn new techniques
- Identify, plan, and conduct research
 - Learn to develop and test new hypotheses
 - Learn to question your assumptions
 - Make connections between your work and the literature
- Career goals
 - Generate a clear plan for completing your dissertation
 - Determine what steps are necessary to be successful for moving to the next stage of your career (teaching experience, original research proposal, professional school exams, etc.)
 - Develop leadership and management skills
 - Continue to network
 - Continue to mentor junior students

Annual goals, year 5/6:

The final years of graduate school in the UC Merced CCB program is primarily devoted to finishing up final experiments, writing and defending your dissertation, and moving on from graduate school. Examples of activities appropriate for your fifth and sixth year are:

- Fundamental knowledge
 - Demonstrate that you are an expert
 - Demonstrate breadth of knowledge in areas related to yours
 - Actively participate in seminars
- Communication
 - Apply for postdocs, internships, jobs
 - Attend meetings
 - Write papers
 - Write and defend dissertation
- Ethics
 - Understand standards of professional behavior
 - Develop appropriate support relationships with faculty, staff, and peers
- Technical proficiency
 - Balance lab work with writing
 - Identify work necessary for dissertation
 - Schedule your dissertation writing and defense timeline
- Identify, plan, and conduct research
 - Design experiments independently
 - Plan experiments that extend your work, for after you leave
- Career goals
 - Identify and go after specific opportunities for the next stage of your career
 - Continue to mentor other students
 - Continue to develop your leadership and management skills