

McShan Lab
IDP / Annual Progress Report
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- **Purpose**

The purpose of this annual progress report is to enable your PI/mentor to i) help you become the best scientist you can be, ii) help you cultivate your own personal, professional and scientific identity, and iii) help you achieve your penultimate career goals. This form also serves as an “Individual Development Plan” that is intended to provide a structured, formal mechanism for PI/mentor guided self-reflection and self-analysis.

Please work through the annual report form to reflect on the progress thus far in your degree, your current/desired skillsets, your research performance/productivity, your goals, and a holistic view of you as a scientist. After you’ve had a chance to respond to the prompts, your PI/mentor will have a one-on-one conversation with you about the main areas you are doing well in, and the areas to improve upon. Together, you will formulate a concrete set of objectives to work on for the coming semester/year.

Respond to all prompt with *Response*. Keep your responses colored with red text.

Please start by reflecting on these big picture questions:

1. Why are you in pursuing an undergraduate or graduate degree in your field?
2. How do you think you are performing in courses and research so far?
3. Do you feel like you are close to or far away from where you think you should be?
4. What are your overall goals for your time here?
5. What do you want to do in the future, both short- and long-term?

- **Your Annual Report Information**

Name: *Response*

Date: *Response*

E-mail: *Response*

Degree Pursued: *Response*
(i.e., B.S. Biochemistry; Ph.D. in Biochemistry)

Year of Degree: *Response*
(i.e., Junior undergraduate, 1st year graduate student)

- **Research Progress**

Provide a brief overview of your main research project(s). What are the objectives/aims for each of the projects? Use bullet points for multiple projects.

Response

Towards those objectives/aims, what are your major research accomplishments in the past year?

Response

Are there any challenges that have limited your research progress? If so, what are some ways to mitigate those challenges?

Response

Have you participated in any collaborative research with groups outside of our own? If so, list them and the associated project(s).

Response

What are your specific research goals for the upcoming year? What do you need in place to achieve them?

Response

Have you contributed to any peer reviewed publications in the past year? If so, list them. If not, do you have any publications planned for the upcoming year (either in preparation or in submission)?

Response

Have you applied to and/or won any awards, grants, or funding in the past year? If so, list them and the award amounts (if known), even if you didn't receive the award.

Response

Do you intend to apply for any awards or funding this upcoming year? If so, which? (The answer to this question should be "yes". If you need help identifying opportunities let your PI know.)

Response

Have you given any poster or oral presentations in the past year (outside of lab meetings and course work)? If so, list the date, title, and location.

Response

Do you plan to give any poster or oral presentations in the upcoming year outside of lab meetings and course work? If so, list the date, title, and location. (The answer to this question should be "yes". If you need help identifying opportunities let your PI know.)

Response

Are there any specific areas you would like to grow in the upcoming year?

Response

What have been your top three seminar or lecture talks you've attended this year? If you need help identifying seminars to attend let your PI know, but you SHOULD be attending seminars... even undergraduate researchers!

Response

Undergraduate students should also attend conferences when possible (especially local ones). PhD students after their second year should be attending conferences at least one every other year. Have you attended any conferences in the past year? If so, briefly describe your experience. If you haven't attended any yet, which conferences would you like to attend in the future? If you need help identifying conferences to attend let your PI know.

Response

- **Progress Towards Degree (Ph.D. Students)**

Mentees who are not PhD students can delete this section

Please use the green checkmark or red x mark to note which of the following progress you have made so far.

- Submitted paperwork to join the group or
- Completed literature exams or
- Formed your Ph.D. thesis committee or
- Passed Ph.D. candidacy exam/quals or
- (For those who passed) Met with your thesis committee in the last year or
- Published any paper(s) since joining the group (any authorship) or
- Published at least 1 first author paper or
- Published 2 first author papers or
- Published >3 first author papers or

Who are your current Thesis Committee members? If you don't have a Thesis Committee yet, who would you like to be on the committee?

Response

What courses have you completed? List the catalogue number and credit hours.

Response

Are you planning to take any courses the upcoming year? If so, which?

Response

Which courses have you taught (including anything you are TAing in the upcoming semester)? List the course number and semester/year.

Response

Example PhD timeline from the graduate handbook:

https://chemistry.gatech.edu/sites/default/files/documents/grad_handbook_2023.pdf

Graduate Program Timeline		
Year	Month(s)	Requirement, Milestone, or Event
1	August	Initial orientation, teaching assistant training
	Fall semester	Register for 6-9 credits of coursework (two or three classes) Register for CHEM 9000 (Doctoral Thesis), CHEM 8001 (Faculty Seminar), CHEM 8000 (Departmental Seminar), CETL 8000 (Graduate Teaching Assistantship Preparation) and CHEM 8997 (Teaching Assistantship, if you will be a Teaching Assistant that semester) Start work on research advisor identification by talking with faculty and their students.
	Aug. – Feb.	Research rotations with one or more research groups (optional but encouraged)
	Aug. – Oct.	CHEM 8001 (Faculty Seminar)
	October	Graduate student-faculty retreat (optional, but strongly encouraged)
	Nov. 15	Earliest date to submit paperwork to join a research group
	Spring semester	Register for 6 credits of coursework (two classes) CHEM 8002 (Resources Seminar) Register for CHEM 9000 (Doctoral Thesis), CHEM 8000 (Departmental Seminar), and CHEM 8997 (Teaching Assistantship, if you will be a Teaching Assistant that semester)
	Jan. – August	Literature exams
	Feb. 1	Deadline for selection of research group
	July 15	Deadline for assembly of a thesis advisory committee
	Summer	Register for CHEM 9000 (Doctoral Thesis) You should be fully integrated into your research group and initial project
2	Fall semester	Complete required coursework (if necessary) CHEM 7001 (Introduction to Research) CHEM 8003 (Student Seminar)
	October	Graduate student-faculty retreat (optional, but strongly encouraged)
	December 1	Report summarizing research to date due for CHEM 7001
	Jan. – May 15	Ph.D. candidacy exams
3	Fall semester	Proposal Writing Class (CHEM 8801)
	October	Graduate student-faculty retreat (optional, but strongly encouraged)
	Aug. – April	Annual meeting with thesis committee members
4	May 15	Annual progress report due to thesis committee and grad program office
	October	Graduate student-faculty retreat (optional, but strongly encouraged)
5	Aug. – April	Annual meeting with thesis committee members
	May 15	Annual progress report due to thesis committee and grad program office
5	October	Graduate student-faculty retreat (optional, but strongly encouraged)
	May 15	If data review meeting has not yet occurred, annual progress report due to thesis committee and grad program office
5.5	6-months prior to defense	“Data review” meeting with thesis committee approximately six months before expected Ph.D. thesis defense date, for the purpose of planning and approving the expected content of the thesis.
		Ph.D. thesis seminar and defense (Average duration of Program is 5.5 years)

- **Extracurricular and leadership activities**

Have you participated in any professional societies, done any community service activities, volunteering, speaker panels, or done any other extracurricular activities? If so, list them here.

Response

Are there any extracurricular activities you are planning for in the upcoming year? (The answer to this question should be “yes”. If you need help identifying opportunities let your PI know.)

Response

Do you participate in any roles where you have significant “leadership”? An example could be President / Vice Presentation / Board Member of an organization within your department. If so, list them here.

Response

- **Careers**

What is your “next step” career goal? Examples include but aren’t limited to: graduate school, medical school, government sector, postdoctoral training, industry job, research technician in academia, scientific editor/writer, sales associate, academic professional, patent law, etc

Response

What is your “long term” career goal? Examples include but aren’t limited to: graduate school, medical school, government sector, postdoctoral training, industry job, research technician in academia, scientific editor/writer, sales associate, academic professional, patent law, etc

Response

List specific organizations, companies, universities, or you might want to pursue.

Response

Are there are examples of contacts you'd like to have who could help you with your career goals? Your PI will attempt to help you make these contacts.

Response

Have you participated in an internship? If so, list where and when. If not, do you have interests in performing an internship? If so, list potential locations for an internship.

Response

- **Mentorship / Networking**

Define your own mentorship network by filling out the image below. If you are missing any mentors, you should work to fill those spaces out in the upcoming year. Print out the completed image and paste the results near your desk or have it somewhere with you.

Role models

1. _____
2. _____
3. _____
4. _____

Safe Space

1. _____
2. _____
3. _____
4. _____

Emotional support
ie. friends, family, others

1. _____
2. _____
3. _____
4. _____

You

Substantive Feedback
ie. colleagues, editors

1. _____
2. _____
3. _____
4. _____

Intellectual Community

1. _____
2. _____
3. _____
4. _____

Professional development

1. _____
2. _____
3. _____
4. _____

List any formal mentees you have. Mentees are individuals you work closely with and help train and/or manage them. They could be undergraduates or graduate students.

Response

How have your mentoring skills progressed in the past year and what underpinned the progression?

Response

What do you plan to do in the upcoming year to further improve your mentoring skills?

Response

- **Self-Assessment**

Evaluate your skills and abilities in the following areas. Highlight the number you assign yourself **yellow**:

4 = *Highly proficient (postdoc level, this is your superhero talent)*

3/2 = *Decent to Good (at the bar/level required of a Ph.D. student)*

1 = *Needs improvement (you need to increase this skill to graduate)*

N/A = *Haven't done (you need to gain this skill to graduate)*

Overall Core Scientific Knowledge						
Knowledge of literature in the field. Do you read general papers in your field (not necessarily related to your topics); skimming PubMed or journals in your field. <i>N/A - I do not read any papers</i> <i>1 - I read 1 to 2 papers a week (on any subject)</i> <i>2 - I read 3 to 5 papers a week (on any subject)</i> <i>3 - I read 6 to 7 papers a week (on any subject)</i> <i>4 - I read >7 papers a week (on any subject)</i>	1	2	3	4	N/A	
Knowledge of literature related to project. Do you read papers directly relating your research and techniques. <i>N/A - I do not read any papers</i> <i>1 - I read 1 to 2 papers a week (on my research subjects)</i> <i>2 - I read 3 to 5 papers a week (on my research subjects)</i> <i>3 - I read 6 to 7 papers a week (on my research subjects)</i> <i>4 - I read >7 papers a week (on my research subjects)</i>	1	2	3	4	N/A	
Laboratory Skills						
General lab skills include things you'd do in most biochemistry/biophysics labs like recombinant plasmid DNA design, bacterial transformation, protein expression, protein purification, SDS-PAGE, western blot, PCR, nanoDSF, MST, circular dichroism, mammalian cell culture, making buffers, general unix/bash usage, AlphaFold, etc. Doing it once is not enough; you must have done multiple times with sufficient expertise. <i>N/A - I do not yet have any general lab skills</i> <i>1 - I read 1 to 2 general lab skills</i> <i>2 - I read 3 to 5 general lab skills</i> <i>3 - I read 6 to 7 general lab skills</i> <i>4 - I have >7 general lab skills</i>	1	2	3	4	N/A	
Technical skill sets include things that not all labs do, or techniques that require a lot of theoretical and practical knowledge. This could include solution NMR (proteins), X-ray crystallography (screening, hanging/sitting drops), cryo-EM, SAXS, surface plasmon resonance, molecular dynamics simulations, protein design (RFDiffusion/ProteinMPNN), general Rosetta, advance coding	1	2	3	4	N/A	

<p>(python, R, etc), advance PyMOL, etc. Doing it once is not enough; you must have done multiple times with sufficient expertise.</p> <p><i>N/A - I do not yet have any technical lab skills</i> <i>1 – I read 1 to 2 technical lab skills</i> <i>2 – I read 3 to 5 technical lab skills</i> <i>3 – I read 6 to 7 technical lab skills</i> <i>4 – I have >7 technical lab skills</i></p>					
General Research Skills					
<p>Designing experiments; can you generate a testable hypothesis? can you design research to tackle a question or address a hypothesis?</p> <p><i>N/A - I cannot yet design my own experiments</i> <i>1 – I can't design my own experiments, but I provide suggestions/input in design</i> <i>2 – I can design experiments with major input from PI</i> <i>3 – I can design experiments with minor input from PI</i> <i>4 – I can easily design experiments without input from PI</i></p>	1	2	3	4	N/A
<p>Analytical skills; do you have the ability to meticulously collect, interpret, and draw meaningful conclusions from complex experimental and/or computational data</p> <p><i>N/A - I cannot yet analyze data</i> <i>1 – I can't analyze and interpret data, but I provide suggestions/input</i> <i>2 – I can analyze and interpret data with major input from PI</i> <i>3 – I can analyze and interpret data with minor input from PI</i> <i>4 – I can easily analyze and interpret data without input from PI</i></p>	1	2	3	4	N/A
<p>Problem solving/troubleshooting; if something isn't working (in the lab or computationally), can you carry out independent problem solving and troubleshoot to get it working?</p> <p><i>N/A – I've never troubleshooted/optimize anything in the lab</i> <i>1 – I can't troubleshoot/optimize, but I provide suggestions/input</i> <i>2 – I can troubleshoot/optimize with major input from PI</i> <i>3 – I can troubleshoot/optimize with minor input from PI</i> <i>4 – I can easily troubleshoot/optimize without input from PI</i></p>	1	2	3	4	N/A
<p>Research Productivity; how many manuscripts have you published in the lab? Only include papers in your current lab (in submission counts; co-first author counts)</p> <p><i>N/A – Haven't published yet in the lab</i> <i>1 – Co-author on a paper/papers but not first author yet</i> <i>2 – One first author paper</i> <i>3 – Two to four first author papers</i> <i>4 – More than four first author papers</i></p>	1	2	3	4	N/A
<p>Creativity/developing new research directions; can you create novel, appropriate, and useful/impactful ideas and/or products? can you innovate research directions and approaches?</p>	1	2	3	4	N/A

<p>N/A – I've never been creative or developed new directions anything in the lab 1 – I'm not creative or develop new directions, but I provide suggestions/input 2 – I'm creative or develop new directions with major input from PI 3 – I'm creative or develop new directions with minor input from PI 4 – I'm creative or develop new directions without input from PI</p>					
Professional Skills					
<p>Oral presentation skills; Can you generate a talk that tells a cohesive story and then deliver the talk?; only include those related to your research here</p> <p>N/A – I haven't given an oral presentation / talk about my research yet 1 – I've given oral presentations / talks in lab meeting 2 – I've given oral presentations / talks within the department (i.e., retreat or symposium) 3 – I've given oral presentations / talks at local conferences outside of department (within Atlanta) 4 – I've given oral presentations / talks at international conferences (outside of Atlanta)</p>	1	2	3	4	N/A
<p>Poster presentation skills; Can you generate a poster that tells a cohesive story and then deliver the poster?</p> <p>N/A – I haven't given a poster presentation about my research yet 1 – I've given a poster presentation for a class/course 2 – I've given a poster presentation within the department (i.e., retreat or symposium) 3 – I've given a poster presentation / multiple posters at local conferences (within Atlanta) 4 – I've given multiple poster presentations, including international conferences (outside of Atlanta)</p>	1	2	3	4	N/A
<p>Manuscript writing skills; During the course of your research, you should improve your writing style toward proficient communication with your target audience.</p> <p>N/A – I haven't contributed writing to a research paper yet 1 – I've written small sections of a research paper (i.e, materials and methods, figure legends) 2 – I've written a research paper / major sections of a paper, but required major edits by PI 3 – I've written a whole paper, but it required minor / moderate edits by PI 4 – I've written multiple papers on my own with minor input from PI</p>	1	2	3	4	N/A
<p>Teaching skills; key teaching skills include: effective communication, ability to explain complex concepts clearly, critical thinking, active listening, adaptability to different learning styles, lesson planning, providing constructive feedback, managing classroom dynamics, and fostering student engagement</p> <p>N/A – I haven't TA'd a course before 1 – I've TA'd 1 course/lab 2 – I've TA'd 2 courses/labs 3 – I've TA'd more than 3 courses/labs 4 – I've TA'd / taught courses / labs where I helped design the syllabus or major curriculum</p>	1	2	3	4	N/A
<p>Mentoring others; key mentoring skills include: effective communication, ability to explain complex concepts clearly, critical thinking, active listening, adaptability to different learning styles, planning, providing constructive feedback, managing personal dynamics, and fostering student engagement</p>	1	2	3	4	N/A

	<p><i>N/A – I haven’t mentored anyone before</i></p> <p><i>1 – I’ve had some minor experiences in mentoring</i></p> <p><i>2 – I’ve actively mentored / advised one student but with major help from PI</i></p> <p><i>3 – I’ve actively mentored / advised one student; largely independent of PI</i></p> <p><i>4 – I’ve actively mentored / advised multiple students; largely independent of PI</i></p>					
Leadership, Extracellular, and Management Skills						
	<p>Leading and motivating others; Do you lead and motivate others (either in or outside the lab); Examples could be Woman+ in Chemistry board, Graduate Student Forum, etc</p> <p><i>N/A – Do not have any leadership roles</i></p> <p><i>1 – I’ve done 1 leadership role</i></p> <p><i>2 – I’ve done 2 leadership roles</i></p> <p><i>3 – I’ve done 3 leadership roles</i></p> <p><i>4 – I’ve done 4 or more leadership roles</i></p>	1	2	3	4	N/A
	<p>Extracellular skills; Do you do any volunteering or outreach? Atlanta Science Festival, Tutoring, etc</p> <p><i>N/A – No volunteering or outreach</i></p> <p><i>1 – I’ve done 1 volunteering / outreach activity</i></p> <p><i>2 – I’ve done 2 volunteering / outreach activities</i></p> <p><i>3 – I’ve done 3 volunteering / outreach activities</i></p> <p><i>4 – I’ve done 4 or more volunteering / outreach activities</i></p>	1	2	3	4	N/A
	<p>Organizational skills; Do you organize your lab notebook and research data effectively? sections for the date, experiment title, hypothesis/objective, materials and methods, detailed observations, raw data, calculations, analysis, conclusions, and any relevant figures or graphs, with each entry clearly labeled and presented in a logical sequence, allowing for easy reference and reproducibility of the research</p> <p><i>N/A – I haven’t had to organize any lab notebooks/research data</i></p> <p><i>1 – Very little organization of lab notebook/research data</i></p> <p><i>2 – Some to moderate organization of lab notebook/research data</i></p> <p><i>3 – Pretty organized lab notebook/research data but with some improvements</i></p> <p><i>4 – Extremely organized lab notebook/research data</i></p>	1	2	3	4	N/A

Based on your answers to the self-assessment questions...

What are your top three areas of strength (considering all your skills)?

Response

What are your top three areas of weakness (considering all your skills)?

Response

What are specific skillsets you would like to learn or improve in the upcoming year? This could be a scientific technique (i.e., solution NMR) or it could be a general skillset (i.e., scientific writing).

Response

- **Update your CV (use your responses in the annual progress form to do so!).**
Examples of CVs are available in the lab's OneDrive.
- **Upload a copy of your completed progress report and updated CV to the OneDrive. Please make a folder for yourself. Let your PI know when you've updated the material.**
- **Your PI will go over your annual form with you and provide formal, constructive feedback.**