Greco lab six-month review: Relationships for Learning and Growth

The purpose of these meetings is to create a space for you to self-reflect in depth about how you operate in the context of the lab, and to identify areas where you can continue to grow in relation to my organization. The lab mission and expectation file will serve as a guide and a reminder of the values and goals I have for this group.

Part 1: You in the context of your relationship with me.

Currently, what are your long-term professional goals?

What motivates your work in my lab each day?

What about working in the lab discourages you or makes working in the lab difficult?

What other factors or experiences (race, gender, religion, sexual orientation, power differential… etc) do you feel impact your work in the lab?

As a result of the above self-reflection, are there any strategies that you would propose to move forward our work as a team?

Part 2: You in the context of your relationship with each lab member.

Tell me at least one thing you learned about yourself following a conversation with a lab mate in the past 6 months.

Tell me at least one thing you learned about one of your lab mates following a conversation with them in the past 6 months.

When you think about the lab as a whole, what do you see as your role? How would you describe your contribution to the collective?

I think it is fundamentally important for your growth and the growth of your colleagues that you are engaged, to varying degrees, with all projects in the lab. We have developed an infrastructure to support us in this endeavor, including having a fast-cycling lab meeting schedule so people can have a deeper understanding of each others' science, slack discussions that bring us together across projects where the project/lab member calls for it and sharing of your data with others, joining efforts where possible.

> Do you think your colleagues help the advancement of your project? If yes, how? If no, why?

> Can you reflect on what projects you may feel more or less engaged with and the steps you can take to increase your overall engagement across all projects?

How is your experience with various lab communication tools (Slack, Dropbox, Google Calendar, etc)? What

obstacles have you discovered on these platforms and how can we work to improve our interactions through them in the future?

Please feel free to provide ways that you think can improve our lab meetings or any other aspects of interactions with lab members.

Part 3: About you and the rest of the scientific community: The purpose of this section is to reflect on your identity as a scientist beyond our lab, in the context of our larger scientific community that you belong to. Collective contributions are not narrated enough and not recognized as fundamentally important to the advancement of individuals. This section prompts you to be more reflective about this as well as to anchor you to a larger network of colleagues.

What is a specific interaction you experienced outside our lab that had an impact (positive or negative) on you or your science?

What new relationships with colleagues across all groups (i.e. staff, trainees, faculty) both inside and outside our department/Yale have you established in the last 6 months? What relationships have you nourished and maintained? What do you need from the lab to continue investing in these networks?

What aspects of our department support and enrich your scientific development?

Are there any aspects of our department that create obstacles for your scientific development?

Part 4: Feeding your knowledge and developing communication skills. This section expands on the fundamental need to educate yourselves on the progress of our field through several available forums.

What makes it difficult for you to keep up with the literature both in your area of specialization as well as outside it?

How frequently do you attend seminars and on which topics?

Which conference do you want to attend this year and how will it help you develop as a scientist?

Please list Yale forums outside the lab where you would like to present your research this coming year and let's plan for it.

Greco lab six-month review: Scientific Project/s

The purpose of these meetings is to create a space for you to self-reflect in depth about how you generate and contribute to research in the context of the lab, and to identify areas where you can continue to grow the project/s you are involved with within my organization. The lab mission and expectation file will serve as a guide and a reminder of the values and goals I have for this group.

Part 1: Meeting optimal lab standards within your project and the lab. This section is to think about the tools you use and the responsibilities you carry as members of our organization.

It is my goal that lab responsibilities be fairly and evenly distributed. You each contribute to each other's scientific success through your commitment to the job(s) you do for the lab as a whole. Please bring both excitement and struggles as you manage your lab job for me to advise. If you are struggling to manage your lab job, what changes, if any, would help you?

Abiding by all regulations from the IACUC and YARC is crucial to maintaining our animal protocol in good standing. Do you feel confident in all IACUC and YARC regulations, protocols and practices?

What new practices or habits could you, the staff, or I adopt to help with any difficulties you experience with maintaining these lab standards?

What process do you use to decide the experimental help you need? How can we best operate with your colleagues (i.e. staff and or other trainees in the lab you collaborate with) to advance your project/s?

Would you like (additional) help with your planned experiments? If yes, list below what help you require.

For the following section (blue font), please discuss your answers and examples with Cat and Dave prior to our meeting. While I will read this section too, it is critical to me that Cat and Dave endorse your practices in order to better assist you.

Are you able to manage your current mouse colony? If not, what challenges are you facing? For example, are all of your PCRs working? Do you have enough space in the mouse room? Are you getting the right number of mice for experiments or could you benefit from a meeting with either Dave or Cat to optimize your breeding?

Are you actively maintaining an up-to-date mouse document? If not, in what ways can this be made easier to accomplish?

Please list all the non-US based collaborators that you have reached out to for help on your project. The NIH requires for us to declare all international collaborations for our projects. Thank you.

It is fundamentally important to have a clear and concise written track record of all your experiments not only for reproducibility, but for legal purposes as well. This will ensure compliance, experiment to experiment replicability, and help instruct and guide future generations coming to the lab.

Is your lab notebook in paper or online form?

How do you ensure you're keeping your notebook up-to-date? If you struggle with this, what obstacles

are preventing you from keeping your notebook up-to-date?

Do you have any questions or uncertainty about what sort of things should be documented in a notebook? If this is your first six-month review or if you feel you need a refresher on how to best maintain your lab notebook according to federal regulations, please consult with Cat and Dave prior to our meeting.

Are your intra-op records for all procedures involving anesthetizing mice up-to-date and if not, what can help you improve in this area?

How is your experience with managing centralized lines in terms of efficiency and obtaining mice you provide or receive?

Is your data organized and labelled in such a way that another lab member, if provided a filename and folder, could readily access the file, and understand the nature of the corresponding experiment without requiring an explanation? If not, what elements do you think are currently lacking in your organization scheme?

Part 2: Developing your independent thinking. This section reflects our humble position with respect to how nature works and the necessity to be flexible and adaptable to the data we obtain in order to make discoveries. This relies on framing broad questions and pursuing the findings (rather than only following up on our initial questions), towards the goal of publishing a paper.

In what ways do you take time to think conceptually about your project?

How do you shape questions when designing an experiment?

Please give an example of when you redefined a research question in light of your findings. In what ways was this easy/pleasurable and in what ways was it difficult? What can we do to increase the pleasure and reduce the difficulty?

Doing experiments and analyzing results both demand our time. Which of these do you enjoy more? How can we give both the time and energy they need?

What process do you use to ensure you have taken the appropriate steps in formulating the right conclusions based on your data?

Scientific rigor means implementing the highest standards and best practices of the scientific method and applying those to one's research. List examples of what you think scientific rigor means in terms of our research. What do you do to achieve this? Please list specific practices. Also, please list challenges and pressures you are experiencing, if any, when implementing scientific rigor in your own research.

What, if anything, makes it difficult move from data analysis to figure creation? What can we do to make this process better?

How do you judge the novelty of your project and what do you do when you fear or realize it is not novel?

Part 3 section has two versions, one for trainees and one for staff. NOTE - <u>I ask you to read them both.</u> This will help you understand how I view all roles in our lab and will help us work together more effectively. Please answer only the section relevant to your position.

STAFF - your collaborations and help in lab management. This part asks you to reflect upon the ongoing collaborations you have with trainees to ensure we are investing effectively on the lab while maintaining your satisfaction and excitement. It also gives you an opportunity to scrutinize the practices, direction and overall management of the lab for possible improvement.

Please list all your collaborations and projects (experimental, lab development, writing, organizational, etc) that have been ongoing the past 6 months.

Do you feel you have made satisfactory progress in your scientific investments over the past 6 months? If not, what has made it difficult to achieve these goals? What would help you?

Working relationships with staff are critically important. When they work well, what makes this possible? When they do not work as you intend, what are some of the reasons?

Are there any trainees or projects that you feel would benefit from more collaboration with the staff to help drive things forward in a more manageable way? Or have any trainees mentioned they would like additional help?

What are your thoughts on the current overall scientific direction of the lab? What do you think is needed to optimize our investments in each area? Where do you see synergies or opportunities emerging for new directions within our projects?

Are there any resources/tools/techniques/software/equipment etc. that you think <u>would be beneficial</u> for the lab to explore utilizing? If so, why?

Are there any aspects of lab management (i.e. mouse management and spending, lab responsibilities, record keeping, lab clean-up, equipment issues) you feel could be improved? If yes, please list the ways in which we could make these practices more efficient.

Please list all your mouse lines below. Feel free to mark in a different color the lines that are currently being most utilized by our trainees. Additionally, please include lines that you are optimizing for future use by lab members and first, what experiments they will be helpful for and second, timeline by when that answer will be obtained. We use this system to help us evaluate the effectiveness and cost, in terms of your time for maintenance as well as occupancy of lab mouse space and financial cost to support, to ensure the investment is worthwhile.

TRAINEE – your project and collaborations. This part asks you to gather and reflect on all data you have acquired towards the making of manuscript/s..

Please TRAINEE read and reflect on the section "Part 3: STAFF – your collaborations". What comments or questions do you have about the role staff play in the overarching structure of the lab and your project in particular?

What are **the conceptual and technical advances** you have made so far in your project?

- Organize in 3 or 4 sentences the strongest punchline **
- Which experiments go under each point?
- Share figures you may have made.
- How do these punchlines relate to current ideas in the field?
- Are there any research areas you/we need to learn more about to contextualize your results?
- What are your short-term and long-term milestones to put together the manuscript?

**For this outline to be effective, the key is to distill information to its essence. After you get rid of words, create a very simple 3-4 sentences, step back and measure your excitement,

- If you notice enthusiasm, what are you excited about and why?
- If you do not, what falls short and how can you get it there?

These succinct sentences will become the key points of the paper abstract and fundamental themes of your narrative.

Look back at your old data, in light of your current insights, can you find anything that you can revisit as potentially useful for your manuscript? This task will take you time please invest in it, it is worthwhile!

What are the conceptual and technical advances you have made to *colleagues'* projects (within or outside the lab) you are collaborating with?

Do you feel you have made satisfactory progress in your project over the past 6 months? If yes, what helped you reach your pre-set goals? If not, what barriers have made it difficult to achieve these goals? What would help you overcome these barriers?

Please list all your mouse lines below. Mark in a different color mouse lines you have not touched in the past few weeks. We use this system to help us evaluate the effectiveness and cost, in terms of your time for maintenance as well as occupancy of lab mouse space and financial cost to support, to ensure the investment is worthwhile.