DeSimone Lab Expectations (2022)

Preface:
The goal of the DeSimone lab is to nurture the development of STEMM professionals who will hold leadership roles in various fields in society. We want lab members to do important and distinguished research; to have the skills and confidence to give great talks, write important papers, and be overall great communicators; to be great leaders and great team players; and finally, to achieve their overall professional goals and aspirations.

Group culture:
Our group culture is inclusive, collaborative, innovative, and friendly. We value all team members as individuals and believe that the best science is possible when lab members are consistent, collaborative, and personally fulfilled. Our group values are shown in Figure 1 and are very important to us. We believe that when we are clear about our values, then we can be a destination for excellence for people from around the nation and the world. On the topic of inclusivity, we embody the elements of professionalism and respect, we emphasize that people need to be kind and friendly, and we know that it is important that we give people the support and space to be themselves. Consistent with that, we as a group emulate the leadership traits shown in Figure 2 from the National Geographic Society. We think these are self-evident and are key to success not only in our group but also to achieve success professionally writ large. Additionally, within our group, we value diversity in all of its forms. Indeed, we learn the most from those we have the least in common with. Further, we believe that there is no more fertile ground for innovation than a diversity of experience—and that diversity of experience arises from a difference of cultures, ethnicities, and life backgrounds. A successful scientific endeavor is one that attracts a diversity of experience, draws upon the breadth and depth of that experience, and cultivates those differences, acknowledging the creativity they spark. It is therefore critical to respect the importance of disciplinary and human diversity within our group as we aim to continually
build our culture to support the success of all individual trainees, including in the context of structural disadvantage for those who identify as belonging to a group or groups historically underrepresented in STEMM fields. Lastly, for our lab, a culture of participation is vital—one in which all group members feel comfortable and compelled to voice their ideas and perspectives, and further, one that values differences and dissent. Contributions from all group members are essential, whether from undergraduates, graduate students, postdocs, or staff members. In a group where people feel comfortable to freely participate and share ideas based on a vulnerability-based trust and expectation of mutual respect at all times, voicing disagreement and dissent can often lead to more lively and challenging intellectual discourse, thereby accelerating processes that lead to innovation. The key is to have an environment where such discourse is openly expressed and respectfully communicated, and received in the manner it was intended.

**Work ethic:**
We expect people to be present and show up. We believe in the idea of putting one’s work in, and the 10,000 hours concept popularized in Malcolm Gladwell’s bestseller *Outliers* represents a good framework for achievements like earning a doctoral degree at Stanford University. At the end of the day, we believe a graduate research experience is an opportunity for students to learn and invest in themselves and that one should be able to graduate with a Ph.D. in 4-5 years’ time with such an intense, focused effort. Additionally, despite people having different work preferences, for example where some are early risers and others are night owls, we believe that face-to-face discussions bring unique elements of energy and excitement to our research. As such, between 9 AM - 3 PM we expect the team to be present in the lab to maximize the team dynamic and to work beyond these core hours to accomplish their weekly goals at times of their choosing. If you are taking a vacation or have emergencies, please inform the research group and the leadership team. From a planning point of view, we expect lab members to take 2-3 weeks of vacation during a given year, in addition to federal holidays, and personal time-off when needed. Separately, the lab will be expected to be shut down between December 23 and January 2 each year.

We plan to share this document with all of our students and those who are contemplating joining our group. We also are fine to share this with labs around the world through posting it on our web site to share our perspectives with others, to show what excellence requires, and to let others know we can be a great home for individuals who share our core values. We have a strong belief and expectation that junior students can learn from senior students. We expect senior students to lead, mentor, and share their experiences with others, and to call team meetings on their own, even without the leadership team, to have internal meetings to address work expectations, lab cleanliness and safety, and overall lab culture.
Role of leadership team:
The DeSimone Lab Leadership Team currently consists of:
- Joseph DeSimone, PI
- Gunilla Jacobson, Director of Translational Medicine
- Crista Farrell, Director of Strategic Program Development & Engagement
- Ryan Spitler, Director of PHIND
- Maria Dulay, Senior Research Scientist & Lab Manager
- Eileen Misquez, Administrative Assistant

The Leadership team works on behalf of the entire DeSimone Lab and spends lots of time serving each member of the lab and our overall goals and responsibilities on a wide range of topics including: program initiation, grant writing, project management, lab safety & compliance, mentorship, scheduling, fellowship applications/recommendation letters, and travel.

Group Meetings:
The purpose of our full Group Meeting is for people to learn how to contextualize their talks and to show your progress. Through presentations at group meetings, we expect lab members to learn the important skills of a commanding presence; to own the room and to learn how to answer questions and when to hold them off; and to learn how to abide by great presentation time-management. A typical full Group Meeting will start with the PI giving an overview of insights garnered during the preceding week, offered with the contextualization of helping to nurture leadership training for all in the DeSimone group. This overview will be 2-3 individual group presentations that are to be 30-40 minutes in length. These FORMAL presentations should set the context for one’s overall research objectives, details of progress since the last group meeting, and an assessment of the future directions of the research. For someone’s first group meeting presentation, they should present a self-introduction so that we can get to know one another. We expect group meeting attendees to be fully present (i.e. no working on laptops) and to engage with the material, even if it is not in their subject domain of expertise. We expect attendees to practice asking constructive, respectful, and deep questions to both aid the presenter and to practice for participating in conferences. The leadership team will publish the schedule quarterly.

Weekly Reports:
The purpose of Weekly Reports is that they are essential for a PI to maintain “institutional control”. That is, through regular and frequent updates that include experimental data, preliminary analysis of that data, and some reflection on the next steps for the following week, the PI can be fully cognizant and take ultimate responsibility for the research that ultimately gets published. Students are expected to take no more than 45 minutes to work on Weekly Reports. The format is 14-point font (such that the PI can read it properly in multiple electronic formats), and lab members need to upload their Weekly Reports to the appropriate Leadership Team Member (e.g. Eileen) before 12 PM noon every Friday so
that the PI can begin to review and comment on these Weekly Reports in a timely fashion. It is expected that the PI will return these Weekly Reports to the group before Monday morning. It is strongly encouraged that everyone in the group read others’ weeklies and the PI’s comments on the individual Weekly Reports.

Subgroup Meetings:
The purpose of Subgroup Meetings is to keep things in check and make sure we are making consistent progress on important directions within the lab. The DeSimone Lab currently has two Subgroup Meetings: the Advanced Printer meeting and the Micro-array Patch (MAPs) meeting. There is a Google drive set up that is used to store all the presentations. As of September 2022, the membership is as follows:
- Advanced Printer Subgroup Meeting primary members: Ian, Dan, Kaiwen, Jason, Gabriel and Max. Ian and Dan will co-lead the meeting schedule.
- MAPs meeting primary members: Netra, Madison, Jillian, Shaomin, Gunilla, Micah, Jo Ann, Jean, Andy. Micah and Netra will co-lead the meeting schedule.

Project Meetings:
In addition to Subgroup Meetings and Full Group Meetings, the DeSimone Lab will be scheduling, on an as-needed basis, various Project Meetings. Currently (September 2022) the following Project Meetings are scheduled:
- R3 meetings: every three weeks
- Gates MAPs for vaccine delivery: every three weeks
- Precourt Polymer Sustainability (with the Waymouth Lab) every four weeks
- Precourt Microelectronics Sustainability (with the Mitra Lab) every four weeks
- ISF Sampling with Tom Soh every three weeks
- CABG Marsden’s group meeting: TBD

Project Directions:
This happens through discussion with the PI and takes into consideration the student’s own interests and the PI’s interests. It is important to have alignment with the lab’s funding situation. For clarity, the direction of the lab is the responsibility of the PI.

Mentor-Mentee Expectations:
In our group, the mentor-mentee relationship does not default to 100% science based. We care and show up for the mentees, and therefore we expect mentees to show up, to care, and to resonate with our beliefs. In this sense, we think of a mentor-mentee relationship as a two-way street—an alliance. We believe a lasting mentor-mentee relationship is critical and can go well beyond the science and also beyond one’s duration of a member of the DeSimone lab at Stanford.

In developing the student’s research relationship with the PI, alignment and accountability are essential. If the students are still early in their careers (Undergraduate students, summer interns, high-school students, and early graduate students), the PI will typically
ask a senior Lab Member to work with a junior Lab Member. It is important to keep in mind that the senior-junior Lab Member mentor-mentee assignments come and go. There will be a level of self-guidance, and the PI typically tries to give a junior Lab Member an experience that will help them to decide for themselves what they would like to do professionally and what they are good at. As junior mentees blossom, they will gradually take on more independent projects. Senior Lab Members are responsible for their mentees’ development and safety. At the early stages, when junior Lab Members are working with senior Lab Members, it is encouraged that they plan out the project/experiment together and that the senior Lab Members assign tasks and bring the junior Lab Members along and share with them the love of science.

Meetings with the PI:
In addition to Weekly Reports, Subgroup Meetings, and Full Group Meetings, the individuals in the DeSimone Lab should expect access to the PI on an “as needed basis”. The determination of what’s “as needed” is often ascertained jointly between the PI and the Lab Member. These meetings are highly encouraged to be sought out through the tenacity of the Lab Member and considering the many needs that happen in the Lab (funding agency updates, paper/presentation preparation, scientific perplexities, professional development needs). An ideal format for these meetings has developed to include 30-minute walks across campus, texting by the Lab Member to the PI as needed, and yearly written evaluations (e.g. IDP). A monthly cadence for these one-on-one meetings would be common.

Lab Duty Assignments:
Specific Lab Members are assigned stewardship of shared equipment in the lab for the purpose of training new users and maintaining the operational health of the equipment. A shared Google drive containing the folder “DeSimone Lab” contains a subfolder listing the lab’s shared equipment and the Lab Member stewards. This Google folder also contains subfolders with all lab internal and external protocols (e.g., approved APLAC animal protocols, approved APB biosafety protocols, biosafety plans).

Notebooks:
You will be issued a paper lab notebook on your first day. It is expected of you to keep a detailed, accurate, neat lab notebook that captures your daily efforts in the lab. Your notebook will always reside in the lab and be available for review by the PI or the Lab Manager.

Safety and Lab Citizenship:
All Lab Members should be good lab citizens. A good lab citizen is one who: maintains a neat and organized work area, is polite to other Lab Members, helps when called upon. Be polite to other Lab Members. Help when called upon. Acknowledge and build off the work of others in the lab. Conduct yourself in a professional manner, which includes dressing appropriately and refraining from using offensive language. Be respectful of
other Lab Members and our neighbors in the lab; don’t use other people’s stuff unless you ask first (e.g., reagents, pipettes, benches).

Practice good safety behavior. Do not eat or drink in the research areas. There should be no food or drink containers visible on the lab benches, in the fume hood rooms, in the printer and bio room, and so on. Be familiar with the use of PPE and the location of PPE supplies in the lab. Wear long pants, close-toed shoes, lab coat, and UV-protective safety glasses at all times in the research area. Wear gloves when handling materials in the lab and change gloves immediately after contact with solvents, resin, or other chemicals. Know the locations of the safety equipment, such as eye washes, showers, and first aid kits in the lab. Know how to create and use a hazardous waste tag. Know the location of the emergency assembly point (EAP) for Clark. Require everyone to use the ‘buddy system’: do not work in the lab unless someone else is present in the lab space. All this information is provided by the Lab Manager on your first day during a brief safety tutorial in the lab.

All chemicals, shared and unique, need to be inventoried in ChemTracker, the web-based software program created by Stanford used to track chemical containers. In this program, each chemical container is linked to important safety and regulatory information, such as storage categories useful in the organization of chemicals within the lab. All chemicals need to be stored following the alphabetical storage system supported by Stanford’s EH&S; all chemicals need to be stored in the appropriate locations in the lab (e.g., flammables cabinet, acid cabinet). Quartzy, a web-based supply ordering platform, is used to request the ordering of chemicals and research supplies and materials. The Lab Manager is the custodian of this platform and initiates the ordering process through Stanford Purchasing or when appropriate, the lab’s PCard will be used for the purchase. A new Lab Member upon joining the Lab will be invited to join Quartzy, providing the Lab Member access to the lab’s Quartzy account.

Safety information will be provided through (1) verbal communication individually or in a small group, (2) communication by email or by slack, (3) quarterly short presentations in a full Group Meeting by the Lab Manager, and/or 4) monthly safety meetings where all Lab Members will have input in the discussion of timely safety topics relevant to the group. When a Lab Member has a safety-related question, they should reach out to the Lab Manager. There are no safety questions that are insignificant; they are all important.

All Lab Members are accountable for safety in the lab. Lab Members should support each other by providing safety reminders when appropriate and needed. If a Lab Member observes another doing something unsafe, respectfully remind them to follow the appropriate safety protocol. If the unsafe behavior persists, speak with the Lab Manager or the PI.

External presentations and attendance:
The PI is ultimately the singular person responsible and accountable for all the work from our lab. Anything with our lab’s name on it, or any research done in our lab with lab
resources and lab space, is considered DeSimone Lab Research. As such, the PI is required to see and approve all research being presented or described to others—internally (within Stanford, but outside of the lab) and externally (outside of Stanford)—AHEAD OF TIME before the communication of DeSimone Lab results is proposed to be sent or communicated to others. As such, when you talk about research collaborations outside of the lab, the PI needs to be aware of and copied on all external lab research communications. At times, it may make sense to carry on discussions with other researchers within Stanford without copying the PI, but it is expected that the PI is generally aware of the nature and extent of these discussions. Certainly, the PI needs to be copied, too, if another Stanford faculty member is also copied. When discussions are outside of Stanford, the default should be that the PI will be copied on all those conversations.

**Publications:**

Our lab encourages our members to contribute to the scientific community in the form of poster presentations, conference abstracts and preprints, and to write clear and impactful refereed scientific papers. However, we do not just publish papers for the sake of publishing papers. We encourage you to think about papers as early as you can, as an early paper in one’s career often sets the stage for great outcomes in departmental required preliminary exams; we find that when you are going through qualifications and preliminary exams, it is good to be able to talk about your own paper. It is also a good practice that authorship discussions should take place prior to drafting the publication to ensure all team members are on board. As an FYI, for all review papers, the Leadership Team will run drafts through commercial plagiarism detection software, and it is required that you run your review papers through this system. This is being done not to catch blatant plagiarism (which does happen), but more to give the writer experience in properly reviewing others’ work with confidence and to prevent any concerns about overlaps with language of other existing publications. It is important to properly acknowledge the financial support that has gone into the research, including personnel support, in every publication and presentation.

**Grants and proposal writing**

The DeSimone lab relies on external funding to support all research efforts. This includes funding for student’s salaries and tuition, staff salaries, equipment purchases, and supplies. All lab members are expected to participate in the effort in several ways, including writing sections of the proposal, writing and presenting updates to sponsors, and participate in strategic planning for new grants. By participating in these efforts both graduate students and postdocs will learn the proposal writing process and become familiar with both governmental and philanthropic grant writing. These skills will be essential for any students’ future career, no matter if they continue in academia or private industry.
Patents:
It is strongly encouraged that everyone in the DeSimone Lab should be familiar with patent literature as well as peer-reviewed publication literature. Great ideas often stem from going through the patent literature. We will always keep our eyes on distinguished, novel, important, and non-obvious observations/inventions. During your research, you should ask yourselves the question, what is the killer app? Will this research be useful and how long will it take for the research to be impactful to society writ large? Filing a patent is a judgment call, and not everything is worth filing. If the invention is distinguished, non-incremental, non-obvious, and important, we may decide to file a patent application through the Stanford Office of Technology Licensing (OTL). Our lab’s goal is to make an important impact on society, and we must not limit ourselves to paper publications only. The determination of inventorship is critical to patent validity. Inventorship might be deemed appropriate for individuals who ACTIVELY engage in the conceptualization and reduction to practice of a novel and important idea. These types of discussions might take the form of a white board discussion or a broader ideation session, or even perhaps a record of weekly reports. According to the Stanford Research Policy Handbook: “The University’s Patent Policy requires that all potentially patentable inventions conceived or reduced to practice in whole or in part by members of the faculty or staff (including student employees) of the University in the course of their University responsibilities or with more than incidental use of University resources be disclosed on a timely basis to the University. Title to such inventions is assigned to the University, regardless of the source of funding, if any. Inventors may place their inventions in the public domain if they believe that would be in the best interest of technology transfer and if doing so is not in violation of the terms of any agreements that supported or related to the work.”

Please note that getting a patent filing and having the right to practice that patent are not one and the same. Additionally, having a license to a patent and practicing that patent are not guaranteed, and one often needs to conduct a freedom-to-operate (FTO) analysis. Please be aware that Stanford often does NOT perform FTOs, nor will they guarantee licensee’s FTO of their intellectual property. Please talk/discuss with the PI if you have more questions or are interested in this topic.

Manuscript reviews:
The PI frequently receives requests to review manuscripts (i.e. peer review) submitted to various journals. As part of the training experience in the DeSimone lab, the PI will often ask students and postdocs to complete their own reviews, which are then used to inform the final review submitted to a journal. This enables lab members to become familiar with the peer review process and participate in a meaningful way. When the final review is submitted to the journal, your name will be noted to the journal editors as someone who participated in reviewing the manuscript with the PI. You will also receive the final submitted version for your reference.
Trainees’ completion of training expectations:
For graduate students, it is a general rule-of-thumb that when you look back on your 4-5 years in our group, you will have accomplished the publication of the following:

- One review paper
- 2-4 peer-reviewed papers in elite journals that you are the lead author on
- 3-4 additional papers that you are a contributing author on
- Thesis/Doctoral dissertation following university/departmental formatting and timing/submission guidelines

For undergraduate research students, we hope you will get 1-2 semesters of contributions and ultimately be contributing enough to a refereed scientific paper to warrant being considered a coauthor on that paper. As undergraduate students blossom, you will also get to work on more independent projects which can result in you being the lead author on a paper (as can happen especially if one is doing research as part of a departmental requirement).

Travel
Please follow Stanford’s guidelines on booking your travel for research-related purposes, such as conferences and visits to collaborators external to Stanford. Currently, the University requires that travelers book airfare through the Stanford Travel program. Hotel reservations can use the Stanford Travel program or the itinerary-forwarding service. All of this information and more can be found at [https://international.stanford.edu/book-air-travel-hotels-and-rental-cars-through-stanford-travel-program](https://international.stanford.edu/book-air-travel-hotels-and-rental-cars-through-stanford-travel-program). Please be sure to familiarize yourself with these guidelines and to check for any changes prior to booking your travel. Economy airline tickets, not first-class, are reimbursable through research grants. Keep all receipts. You should be mindful of the cost of airline tickets and lodging, and remember to treat research grant money as if it were your own.

Agreement and Compliance:
Accountability is one of the essential cores of the DeSimone Lab. We will be very clear with our expectations, provide context of such expectations, and expect people to follow as laid out in this document. Very simple things like turning in Weekly Reports on time, being in lab according to our 9 AM – 3 PM expectations, actively participating in group meeting and group discussions, following the safety rules and cleaning up after yourself in the lab are absolutely expected to be followed.

If a given Lab Member fails to meet our lab expectations, the PI and members of the Leadership Team will send clear, direct, and respectful guidance to make it clear to the Lab Member that they are in violation of our Lab Expectations. This is important to do, as it is our experience that many people often have blind spots; therefore, such feedback is critical to provide to the person not living up to our group expectations in a timely manner, thus holding each of us to be accountable to one another and to the Group. However, blind spots cannot be used as a crutch for allowing repeated violations of our Lab Expectations. If there is a need for multiple ‘reminders’, Lab Members should expect an escalation of a response from the Leadership Team, including suspension from being in
the lab after a fourth strike. Please be aware that this is very serious, and suspension hurts the group progress significantly. After the fourth strike and suspension, if the issue is still not resolved, you should be aware that you are working your way out of the lab.

Beyond DeSimone Lab expectations, Stanford University has its own set of expectations found on the following websites:

- The Office of Ethics and Compliance: [https://oec.stanford.edu/](https://oec.stanford.edu/)