

Report of the Review Committee for the Department of Immunology Graduate Program (April 28-29, 2016)

I. Committee

Review Committee membership:

Anthony DeFranco, Department of Microbiology and Immunology, UC San Francisco

G. Stanley McKnight, Department of Pharmacology, University of Washington

David Raible, Department of Biological Structure, University of Washington (Chair)

Ann Rothstein, Department of Medicine, University of Massachusetts Medical School

II. Introduction

The Department of Immunology, within the University of Washington School of Medicine, has a mission to conduct research to understand the immune system and infectious disease and to train scientists to address problems related to immunology with impact on human health. The Department also teaches Immunology to undergraduate and graduate students in other departments, and to students in the Medical School. The Department review, initiated by the Graduate School, completes the requirement stipulated by the University of Washington Handbook for all academic units to be evaluated every ten years. It was last reviewed in 2003-2004.

III. Department Organization and Scholarly Impact

The Department is composed of ten primary faculty, with ten additional affiliate and eight adjunct faculty at Benaroya Research Institute, the Center for Infectious Disease Research, Seattle Children's Research Institute and the School of Medicine main campus. The Department was established in 1986, and moved to its current space in the South Lake Union campus in 2012. It is currently guided by its third department Chair, Dr. Joan Goverman.

The Department has a well-deserved outstanding reputation as one of the top Immunology programs in the country. The overall quality of the Department is reflected in the substantial level of funding. Senior faculty are leaders in the field. They all maintain active investigative programs and all are currently funded to support their research. The Department has also excelled at recruiting an impressive cohort of junior faculty, which have been successfully integrated into the Department and the training program. All junior faculty are engaged in teaching and are currently training graduate students. The previous departmental review had noted that laboratory selection by graduate students was skewed towards more established faculty; this concern has been alleviated. Junior faculty have assigned faculty mentors to help guide them through career advancement. In addition they have built a strong network of interactions amongst their laboratories. Of particular note, all junior faculty have obtained R01 funding from NIH.

Interactions with adjunct and affiliate faculty are remarkable. Affiliate faculty take an active role in teaching and training and have a strong affinity for the program. These faculty are an outstanding resource for the Department. The relocation of the Department to the South Lake Union campus has helped to strengthen these relationships.

The Department administration and financial management are in excellent shape. The Department staff were uniformly lauded by faculty and students. Administrative staff were praised for their competence and efficiency. The Graduate Program Administrator has been in the position for only one year but the transition has been seamless. The Department budget is in order and funds are judiciously spent. However lack of compensation by the university for graduate activities is a consistent burden. In particular the Review Committee noted that the

substantial TA efforts of graduate students for Immunology 441, a popular course for undergraduates, is uncompensated. The Review Committee strongly feels this is unjust, with a burden especially being put upon the research programs of the junior faculty, and recommends that the undergraduate campus support this activity financially going forward.

The Department chair is considered a strong leader. Dr. Goverman has successfully helped the transition to the South Lake Union campus, and has done an outstanding job recruiting an impressive cohort of junior faculty. While generally satisfied with the direction of the Department, senior faculty would prefer more transparency in administrative decision-making. Junior faculty have considerable access to and input from the chair, and are very appreciative of her guidance.

IV. Teaching and Training

The Department maintains a strong and vigorous training program. There are currently 44 predoctoral trainees spread across all research sites. In addition there are about 70 postdoctoral trainees, of which 20 are within labs of PIs with primary appointments. The Department graduate program is highly competitive, with recent applications increasing by 40%. Acceptance rates are near 10%, with approximately 40% matriculation rate. Time to degree is outstanding, currently under 5.5 years. Combined with the stellar reputation of the Department, these indicators clearly demonstrate that the program is one of the premier Immunology programs in the country and amongst the very best at the University of Washington. Following is discussion of several more specific issues that arose during departmental discussions with the Review Committee.

Timetable for General Exam: The Department currently tests students with a Qualifying Exam (QE), composed of a written research proposal on a topic distinct from the student's research area and an oral defense, at the end of the second year. In addition, students defend a dissertation proposal in a General Exam (GE) within 15 months of the QE. The department has a rigorous curriculum and the QE appears to be an important milestone of that training. A significant number of students and faculty felt that the QE was one of the most worthwhile experiences and as one student put it, they really felt capable of being independent scientists after passing it. However, some of the students and faculty felt that the QE detracted from the focus on the thesis topic and diminished the importance of the GE. There was also some concern that the timing of the QE pushed rigorous analysis of the thesis topic rather late in the graduate career. The Review Committee realizes that the QE is a topic of ongoing discussion within the Department, and was visited in the previous review in 2004. The Review Committee suggests that the Department look carefully at their timetable for the QE and GE. The Review Committee also suggests that student thesis committees be formed earlier, and that students be required to meet with them before the GE. This would allow the student to interact with the "experts" on their committee with guidance towards the thesis proposal itself.

Expectations for graduation: The Review Committee discussed the expectation of at least one accepted first author publication for graduation, and considered this both reasonable and in keeping with expectations in other biomedical graduate programs at the UW. It is extremely important to the student to have this record of success going forward into any career path. The controversy seems to develop from having a "set-in-stone" requirement but then instituting a waiver process. The Department should state their expectations for graduation strongly and clearly while still allowing some flexibility for the thesis committee to determine whether extenuating circumstances could justify allowing graduation before the paper is accepted. The Review Committee recommends that guidelines for the waiver process be clearly stated,

including the exceptions for which a waiver may be granted. Alternatively the waiver process could be eliminated and decisions left in the hands of the thesis committee.

The Review Committee also heard from students that a published paper must be rewritten and reformatted for incorporation into the thesis. The Review Committee did not investigate this in any detail but many programs allow a published paper to go directly into a thesis as a chapter with only slight modifications such as the placement of figures and this speeds up the thesis preparation considerably.

Graduate Student Advising: The students appear to be getting appropriate advising, especially during their first year, from the Graduate Program Coordinator (GPC) and Graduate Program Advisor (GPA). After the first year the GPA continues to provide excellent support for administrative issues but some of the students felt it would be helpful to have more active faculty advising to complement that of their thesis mentor. If the students were encouraged to form their thesis committees earlier (in the second year), as suggested above, then the members of the thesis committee could take on this role. Overall, it seems to make sense to have a GPC who continues to meet with students, perhaps on a regular basis, during the 2nd year and beyond. The GPC could then help the students with issues that are either programmatic or involve mentor/student interactions where an outside opinion might be desirable. There was a concern voiced that discussions with the GPC should be kept confidential.

Participation in the Medical School Curriculum: The Department had been very active in teaching immunology during the basic science foundation period of medical school until the adoption of the new curriculum design in 2015. During the first year of the new curriculum the Immunology faculty were not active participants in the Invaders and Defenders Block, and this is seen as a negative for both the medical students and the Department. The Review Committee felt that it is important for the Department to re-engage in medical school teaching and was encouraged to hear from both the Department Chair and her faculty that discussions to do so were already initiated. We would especially encourage participation from some of the junior faculty in this important teaching role. The Review Committee recognizes that additional effort from entities outside the Department will be needed for this process to be completed.

Postdoctoral training: The Department has incorporated several activities that promote career development of postdoctoral fellows (such as inclusion in the Research-in-Progress program; inclusion in the annual Immunology program retreat), but additional efforts and more formal efforts are recommended to enhance this element of training by the Department faculty members. In particular: 1) the Department should provide formal feedback for postdocs talking in the Research in Progress (RIP) series as they do for graduate students. This could be done by collating written comments from fellow postdocs, but should also be supplemented by feedback from at least one pre-identified Program faculty member other than the research mentor. 2) The Department should encourage the informal efforts of postdocs initiated in the past year to receive grant-writing advice and provide feedback to each other. Ideally this activity would welcome the participation of all postdocs of the core Department faculty, and in this case be supported by a small budget for refreshments. 3) The Department should work with the Graduate School to make the postdoctoral career advancement efforts at the main campus more accessible and well advertised to the Department's postdocs. 4) At least once per year, the Department should invite back a past trainee now in Industry or other non-academic career to meet with current postdoc and senior grad student trainees to discuss with them pursuit of such career tracks; 5) the Department faculty should require their postdocs to annually complete an IDP and review it with them, and Department faculty should support the efforts of trainees to

promote their career goals in relevant ways tailored to the career goals of the postdoc as defined in the IDP (heading a research group in academia or in industry, teaching at a small undergraduate institution, etc.); 6) the Department is encouraged to initiate a program in which a postdoc on the job market may request at least two faculty members (the research mentor and a second faculty member) to provide feedback on practice job talks and/or practice chalk-talks prior to the first job interview.

While the Review Committee realizes that some of these suggestions would involve investment of significant faculty time, we believe that the value added for postdoc career development and morale would be substantial both in what the postdocs learn and in sending the message that working on career development is an important consideration. Moreover, if the department hopes to obtain T32 postdoctoral slots, either in a new training grant or as an addition to the current NIAID T32 for predocs, then inclusion of efforts of this type would be required to be competitive for funding.

V. Diversity

The recruitment of underrepresented students by the Department is excellent and matches the percentage of the overall URMs in the applicant pool. The Department should be commended in this regard. However, there was some indication that the retention of URM students could be a problem, an issue that extends beyond the Department. Dr. Goverman mentioned that a couple of the current URM students were struggling with the curriculum. Approximately 10 trainees participated in the URM discussion group – these included PhD students, MD/PhD students, and postdocs, whose comments were remarkably informative. The students were enthusiastic about the program overall, but a number of major concerns were expressed regarding the specific logistics of the URM experience. They mentioned that while significant outreach to URM students was included in the recruitment process, there was no URM-specific advisory/support system once they matriculated. Specifically they expressed a strong need for a URM-designated advisor within the Department, who would be identified as a contact person the day they arrived at UW, to help them address a range of issues that develop throughout their graduate careers – working to develop a sense of community, taking advantage of available institutional resources and fellowship opportunities, and serving as an advocate as far as a variety of individual concerns. With regard to institutional resources, the students mentioned that GOMAP and SACNAS activities are routinely held at the main campus, often at times (lunch) that are very inconvenient for the Immunology students (and others at the SLU campus) to attend.

Most importantly, there was a strong sense that URM students could be engaged as a group in a way that would provide a positive contribution to the Department and University. Examples suggested by the trainees included mentoring of undergraduate or more junior graduate students, and assisting in summer lab experiences of URM high school/college students. They felt that actively contributing to institutional activities would provide a greater sense of belonging. They mentioned a lack of role models – both URM faculty contacts and even the paucity of female departmental seminar speakers (only one URM student in the room was male). They also pointed out how issues relevant to all students, e.g. childcare support, can be a particular challenge to URMs. One particularly revealing comment came from a student who pointed out that she would like to be proud of her department when she attends URM events off campus, but currently has a difficult time describing strong points of the UW URM experience. The students also pointed out that better faculty attendance at their RIPs with appropriate feedback would be welcomed and indicative of a supportive environment. A final suggestion was a link on

the departmental website for providing information on upcoming URM events. This would also be seen as an incentive to URM students interested in applying to the program.

As a result of these discussions, specific recommendations of the Review Committee are as follows: (1) designate a URM advisor with experience/commitment to the URM student group who will be available throughout the graduate training period; (2) provide the URM students with a sense of community by facilitating both departmental, biomedical division, and institutional URM activity – this would include at least some on site events; (3) consider various means for providing URM students with appropriate role model interactions – from speakers to faculty to postdocs; and (4) implement an institutionally supported opportunity for a pre-matriculation URM summer program.

VI. Recommendations

Overall the review of the Department found it in great shape, clearly succeeding in training students, recruiting and nurturing junior faculty, and excelling in scientific research. The Review Committee recommends that the next Department of Immunology Review occur following the regular timeline, in ten years.

The Review Committee's specific recommendations are summarized as follows:

1. The Department should explore options to decrease the time to the General Exam. The Review Committee felt that the current schedule delays student's deep exploration of the literature surrounding the thesis proposal and postpones the formulation of the thesis project into a structured set of aims.
2. Students should form and engage their thesis committee earlier in their graduate career, during their second year. Formation of the thesis committee could help with the perceived gap in advising of students after their first year. Additional efforts in advising by the GPC could be formalized.
3. The Department should formalize rules surrounding the publication requirement for graduation and more clearly articulate the cases for exception.
4. The Department should re-engage in medical teaching.
5. The Department should make greater efforts to integrate postdoctoral trainees into the fabric of the Department. Additional efforts include formal integration of feedback after RIP presentations, Departmental support of current informally organized postdoctoral training, and career mentoring. These efforts would likely improve chances for external funding to support postdoctoral training.
6. The Department's notable success in the recruitment of underrepresented students needs to be complemented with additional effort in retention. As suggested by current URM trainees, the department should establish a designated advisor for URM trainees distinct from the GPC that would serve as a direct line to resources at UW for these students.

Some of these suggestions reflect the challenges facing the Department as the only training program with a primary base on the South Lake Union campus. For example the Graduate School has increased the number of training and mentoring resources for both predoctoral and postdoctoral fellows, but these are mainly focused on the main campus. Moreover many of the

associated workshops are at noon, making the travel a substantial burden. A serious concern is the lack of institutional support for affordable child care at the South Lake Union campus. This raises substantial difficulties for students with infants and small children. The Review Committee recommends that the Graduate School make a greater effort to reach out to students and postdocs at the South Lake Union campus, including the Department trainees. This would include scheduling some events at the satellite campus. Additional effort is needed to improve access of the Department to resources that do exist at South Lake Union through the School of Medicine's Office of Research.