STANFORD UNIVERSITY SCHOOL OF MEDICINE

William S. Talbot, Ph.D.
Senior Associate Dean for Graduate Education
and Postdoctoral Affairs
Stanford University
School of Medicine, Stanford CA 94305-5329

Telephone: 650-725-7664
Fax: 650-725-7739
email: talbot@cmgm.stanford.edu

May 14, 2019

Dear Dr. Huang,

We are writing to express our strong and enthusiastic support for your application for the NIGMS funded T32 Award that helps fund the Molecular Biophysics Training Program. Stanford has excelled in this discipline for many years, and we are committed to helping continue this program's >40-year history of innovation and success in graduate training and research.

Below we highlight the fourteen areas of extensive institutional support that we offer for training grants and their trainees in the Schools of Medicine (SoM) and Humanities and Sciences (H&S).

1. Developing and promoting a culture that advances the highest standards of scientific rigor, reproducibility and responsible conduct of research. Rigor and Reproducibility (R&R): Our goals are to enhance graduate training in experimental design and data collection, organization, and analysis and to integrate computational competence-building activities into the graduate curriculum. In 2017, the Cellular and Molecular Biology T32 secured a NIGMS supplemental grant – Open Source Training in Computational Competence and Hands-on Data Analysis – to enhance training in data analysis and computational competence. This grant leveraged a key partnership with The Carpentries, an organization that builds global capacity in essential data and computational skills for conducting efficient, open, and reproducible research. This collaboration paved the way for Stanford Libraries (through initial training by The Carpentries) to offer six to eight Software Carpentry workshops per year, training up to 40 graduate students at a time to learn foundational coding and data science skills to solve their computational challenges. With this support, the university now has 62 internally trained instructors (students, postdocs, and staff) to deliver workshops to trainees on an ongoing basis.

The "Foundations in Experimental Biology" course for first-year graduate students is designed to facilitate students' critical first steps toward becoming independent scientists. R&R training has been incorporated throughout this 7-week course with focus on experimental design elements, data analysis and practice, and how uncertainty can impact data considerations. Students work in small teams and with faculty to develop an original research project for oral presentation. This fall, the course will include a lecture led by David Glass from Novartis Institutes for Biomedical Research based on his book, *Experimental Design for Biologists*. His lecture will cover (1) how to frame a project; (2) system validation; (3) experimental controls and determination of *N*; and (4) data gathering, interpretation, and model building. In addition, there are 38 computational, quantitative, and/or statistics courses that support skill development in

quantitative/computational areas including experimental design, data analysis, data validation, and data curation.

Our popular Stanford Biosciences Grant Writing Academy supports over 100 graduate students (2nd years and beyond) and postdocs annually in creating proposals and productive writing practice as preparation for F and K fellowship applications. As R&R is a significant component of these applications, we will expand our scope to include individual R&R coaching and develop online resources this year as trainees develop their research plans.
Based on the popularity of a trial mini-course, we will start to offer a quarter-long course in the next academic school year for the fall, winter, and spring. "Introduction to R for Data Analysis" teaches R, an open-source programming language for statistical analysis, focusing on the computational aspects of reproducible research and transparency in scientific publication. In particular, students are introduced to the idea of a computational notebook that integrates well formatted text with computer code and output, including graphics. Using this explicit notebook style of computation, they are asked to replicate at least part of an analysis from a published article. They also compile a short project notebook showing the exploration and graphical presentation of data from their own laboratory experiments. The course is taught using both lecture and live-lab formats, along with required at-home background reading, and numerous problem sets for practice. The course has been explicitly designed for Biosciences PhD students; the examples are drawn from data manipulation challenges they are likely to encounter using biological data. Biosciences PhD students are given priority registration for the class. We are also planning an equivalent version of the course for the Python language and are exploring creating a new course, "Computer Science for Biologists."

The Data Studio through SoM's new Department of Biomedical Data Science (formed in 2015) also provides specialized focus in rigor and reproducibility for our students and postdocs. Most sessions are an extensive and in-depth consultation for a researcher based on research questions, data, statistical models, and other material prepared by the researcher with the aid of a facilitator. During the Data Studio, the researcher explains the project, goals and needs. Experts in the area across campus are invited to contribute to the brainstorming. Drop-in consulting is also available pairing students and postdocs with faculty experts in data science to provide assistance with research questions and data analysis.

Responsible Conduct of Research: All Stanford graduate students and postdocs are required to receive instruction in the responsible conduct of research. For our trainees, this formal training takes place in two ways through the Stanford Center for Biomedical Ethics.

During their first year, every trainee in the Biophysics Program (and every student enrolled in the Stanford-wide graduate Biosciences program) takes MED 255 (The Responsible Conduct of Research), an 8-hour course taught by the Center's professional staff. MED 255 is offered in multiple sections throughout the academic year; each session meets from 9 am-5 pm on a Saturday or Sunday during the year. This facilitates timely participation of trainees, and helps avoid scheduling conflicts with other activities. The course is available in two tracks, one for basic researchers, which is taken by our trainees, and one for clinical and medical researchers. Current instructors include David Magnus, PhD (Thomas A. Raffin Professor of Medicine and Biomedical Ethics), Holly Tabor, PhD (Associate Professor of Medicine), Maren Grainger Monsen, MD (Senior Research Scholar), and Katrina Karkazis, PhD (Senior Research Scholar). The course website is at http://bioethics.stanford.edu/education/rcr/. The topics covered by each session include: (1) conflict of interest; (2) policies regarding human subjects; (3) mentor/mentee responsibilities; (4) collaborative research; (5) peer review; (6) data acquisition; (7) research misconduct; and (8) contemporary ethical issues.

In addition to offering MED 255, the Center offers programs, seminars, and journal clubs in a number of areas including Neuroethics, Stem Cells and Society, and Integration of Research on Genetics and Ethics, as well as a program in Bioethics and Film. These programs are available for any interested trainees to attend. More information can be found at http://bioethics.stanford.edu/.

Our students also have the opportunity to enroll in other ethics-related courses, of which the SoM offers 22 additional courses related to research ethics. The School of Education offers 2 courses related to ethics and the Law School offers 1 research ethics course.

2. Ensuring sufficient start-up funding to permit early-stage faculty to participate in training, and bridge funding to ensure that training may continue if a mentor experiences a hiatus in funds. Per SoM policy, start-up funds are provided and documented in offer letters. The Office of Academic Affairs and Faculty Compensation reviews offer letters to ensure start-up funds are adequate. Start-up funds cover research expenses typically for the first 3-4 years, including supplies, equipment, and personnel. In some departments, start-up also includes assistance with housing and salary (if not covered by funding). Bridge funding is provided in the case of a hiatus in funding. Bridge funding in clinical departments is decided at the department level. In SoM basic science departments, investigators can access bridge funding up to $200,000 total.

3. Supporting core facilities and technology resources, and describing how they can be used to enhance training. As detailed in this application, the predoctoral trainees in this program benefit from outstanding facilities and resources provided by Stanford University and its schools (see http://corefacilities.stanford.edu/). The extraordinary level of investment of the university and schools in the research environment – new buildings, centers and institutes, shared instrumentation facilities, and other research resources – has played a large role in building outstanding laboratory research environments.

For example, the following state-of-the-art buildings highlighted below are core to this program:

- Center for Clinical Sciences Research (CCSR) is a 4-story, 214,000-square-foot building that promotes translational research and bench-to-bedside approach to medical research, housing both basic science and clinical science faculty.
- Clark Center is a 3-story, 146,000-square-foot research center that brings together disciplines including biology, medicine, chemistry, physics, and engineering.
- Bass Biology Research Building is a 5-story, 133,000-square-foot building dedicated to research in the life sciences, and is in close proximity to other departments including computer science, statistics, and engineering to promote collaborations and interactions among faculty and students from different academic disciplines.
- Lokey Stem Cell Research Building is a 4-story, 200,000-square-foot building and the largest of its kind in the country dedicated to stem cell research.
- Li Ka Shing Center for Learning and Knowledge (LKSC) is a 4-story, 120,000-square-foot building that brings together cutting-edge modern education and advanced technology. The fourth floor is dedicated exclusively to students (graduate and medical), and provides them with a variety of study, reflection, and social spaces in which to work, connect with their peers, work out, and relax. A lounge, kitchen, entertainment area, and a rooftop terrace create a stress-free environment to complement a large variety of study spaces, and a project rehearsal area provides students with a state-of-the-art space to practice key presentations.

In addition, two planned facilities will be completed in 2019:

- Biomedical Innovation Building (BMI): This 215,000-square-foot structure will be located on open space just steps from the new Stanford Hospital. It will house laboratories and support space for nearly 1,000 faculty, students and staff in various specialties. The BMI will foster scientific collaborations by bringing together multidisciplinary teams of engineers, basic scientists, and physician-researchers in a modern and technologically advanced facility and inspire ways for different disciplines to work together on basic, translational and clinical studies.
- The Wu Tsai Neurosciences Institute and ChEM-H (Chemistry, Engineering & Medicine for Human Health) are interdisciplinary research institutes designed to bring faculty from many disciplines together to create novel interactions. Both institutes will be housed in a new 235,000-square-foot building that will be home to 40 laboratories, core research facilities, meeting spaces, and a pub.

The university contributes in many ways to the support, success, and advancement of our graduate students. Stanford University's unique environment fosters training of the very best students in interdisciplinary research. The School of Medicine, as well as key partners across campus, including Biology and Chemistry in the School of Humanities and Sciences (H&S), as well as Bioengineering and Computer Science in the School of Engineering (SoE), are among the best in the world and are in close proximity, helping sponsor frequent interactions and collaborations.

4. Providing adequate staff, facilities, and educational resources to the planned program. Our graduate education curriculum aims to empower students both academically and professionally. In the summer prior to the first year, our students participate in an online orientation led by faculty and senior students. The orientation is designed to help them transition from undergraduate and other pre-graduate school pursuits and to hit the ground running. This level of commitment to student success continues into the first year with our innovative "Foundations in Experimental Biology" course designed to facilitate students' critical first steps toward becoming independent scientists – the transition from being consumers of information to producers of knowledge. Throughout their training, our students have the opportunity to enroll in mini-courses that are one- to three-week intensive classes that give them an opportunity to learn more about a specific biosciences field or develop a new skill.

Our home programs and T32 programs are committed to providing academic advising in support of graduate student scholarly and professional development. When most effective, this advising relationship entails collaborative and sustained engagement by both the advisor and the advisee. The program director serves as the faculty advisor for all matriculating students to help them design their academic program; this role transitions to the PhD advisor once trainees have joined a laboratory. Faculty advisors are expected to guide students in key areas such as selecting courses, designing and conducting research, developing of teaching skills, navigating policies and degree requirements, and exploring academic and professional opportunities.

In addition, the SoM Dean's office centrally tracks all Thesis Committee meetings to ensure our graduate students receive the guidance and support they deserve. We have also structured a systematic Individual Development Plan (IDP) program for all Biosciences PhD candidates and postdoctoral scholars. The IDP program was developed through extensive consultation with multiple groups of faculty, students and staff. Standardized IDP forms, specifically tailored to each stage of a trainee's progress through graduate school and postdoctoral training, comprehensively assess each trainee's academic, professional and career progress, and create a clear action plan toward achieving goals and milestones in those areas. Stanford has a tracking system to ensure every NIH-supported Biosciences PhD candidate completes an IDP and meets at least once annually with his/her advisor for discussion.

Through the Office of Graduate Education, we aim to help train and empower the next generation of leaders and innovators within and beyond academia and industry. Our functional areas include operations and administration, wellness and development, curricula, admissions, and diversity and inclusion. Our office offers programs and services to support graduate students and sustain the level of excellence achieved by the Stanford Biosciences.

Through BioSci Careers, formerly the SoM Career Center, we support graduate students and postdoctoral scholars with career mentoring and connections, individualized counseling, curricula with exposure to myriad careers, and development of scientific and leadership skills.

Finally, the SoM Dean's office supports all T32 training grant directors by hosting a quarterly meeting to share best practices and discuss topics of interest, and both the SoM and H&S Dean's offices carry out official program reviews, including interdepartmental, departmental, and T32 program reviews. Dean Talbot is also in frequent contact with students in all of the Biosciences home programs, who serve as more informal avenues to convey any concerns or suggestions about student training.

5. Supporting the PDs/PIs and other key staff associated with the planned training program. The program faculty consists of >80 individuals with outstanding records of scholarship in Biophysics. The program selects faculty mentors dedicated to research, mentoring and teaching and is well balanced between senior faculty with established track records in graduate training and junior faculty. The program assigns a supportive mentor from the senior faculty to each Assistant Professor to ensure that students are well trained and mentored. Mentors in the Biosciences Program have an average of 1-2 graduate students, ensuring that student-advisor interactions remain personal and direct. In addition, the program has administrative staff dedicated to student support.

6. Ensuring faculty have protected time devoted to mentoring, training, and research. Each faculty member's percent effort with respect to teaching (mentoring, training), research, clinical care, and administration is articulated and reviewed regularly (usually annually) by the department. SoM and H&S recognize the critical importance of mentoring trainees and faculty, and will ensure that you have adequate time as part of your university and department roles to direct this outstanding training program. In particular, you will be provided with teaching relief for one class per year by the Department of Bioengineering. Training grant faculty are also given the necessary time to excel as faculty mentors and are encouraged to participate in various programs to enhance their skills in leadership, teaching, and mentoring.

7. Considering activities integral to excellent graduate training (such as teaching and mentorship) in tenure and promotion decisions. For the University Tenure Line (UTL): Excellence in scholarship, teaching, and mentoring (and clinical care, if applicable) is an important prerequisite for a tenured appointment at Stanford because the University is dedicated to outstanding achievement in all of these domains. The purpose of the appointment, reappointment, or promotion evaluation is to appraise, on the basis of the record to date, the candidate's standing in and impact on his or her scholarly discipline (broadly defined) and the candidate's quality as a teacher and mentor (and as a clinician, if applicable). The second criterion for a UTL appointment is promise – or a record demonstrating – that the candidate is capable of sustaining a first-rate teaching program during his/her Stanford career.

Teaching is broadly defined to include: the classroom, laboratory, or clinical setting; advising; mentoring; program building; and curricular innovation. Teaching may include undergraduates, graduate students, medical students, residents, postdoctoral fellows and in postgraduate and

continuing medical education. It is recognized that many tenure-line faculty in clinical departments teach in small group sessions or with individual trainees.

As a key resource, SoM's Teaching and Mentoring Academy promotes excellence in teaching and mentoring by developing, supporting and recognizing dedicated educators and mentors to ensure world-class training for the next generation of physicians, researchers, and educators.

8. Promoting diversity and inclusion at all levels of the research training environment (trainees, staff, faculty, and leadership). Stanford Biosciences is committed to fostering a diverse community in which all individuals are welcomed, respected and supported to achieve their full potential. We value diversity because we believe that interaction with people with unique backgrounds and life experiences allows us to reach a new level of innovation in education, scientific research, and medicine. Further, we believe that a student body that is highly qualified and diverse – in gender, race, ethnicity, socioeconomic background, sexual orientation, and work-life experiences – is essential to a deep and transformative educational process. Stanford commits substantial resources and effort toward recruiting a diverse student cohort to its Biosciences PhD programs. Since 2014, diversity in our student population has increased (~22-25% URM incoming students in recent years). Successful PhD recruitment programs and mentoring programs are listed below:

- Stanford Summer Research Program, a fully funded residential internship program for underrepresented minority undergraduates who are interested in pursuing PhD programs in the biomedical sciences, and of which you act as the PI of our Amgen grant. Since the program's inception, Stanford has trained more than 500 talented undergraduate students from diverse backgrounds, and 97% went on to pursue an advanced degree.
- Stanford Preview, a three-day program jointly sponsored by the Stanford Biosciences and the Stanford Black Bioscience Organization, is designed to introduce sophomores and juniors from diverse backgrounds to the Stanford campus and to provide guidance for the graduate school admissions process.
- The Diversity Excellence Program, led by the Biosciences Diversity Advisory Council (with eight faculty) and Ayodele Thomas, Associate Dean for Graduate and Career Education and Diversity, provides financial support to interview a diverse group of students and encourages departments to proactively identify diverse and high achieving candidates, employing measures beyond traditional assessments such as GPA/GRE.
- ADVANCE, an eight-week intensive summer transition program, supports the success and retention of incoming graduate students from underrepresented and disadvantaged backgrounds. Participants in the program engage in activities centered on academic development, professional development, and community building – all of which seek to prepare them for a successful graduate career at Stanford. The program strives to foster community, leadership, and excellence in an interactive learning environment.
- The Graduate Diversity Funding Program of H&S, which provides graduate fellowships for URMs in Biophysics.

In 2015, Dr. Lloyd Minor (Dean of SoM) formed the Dean's Task Force on Diversity and Societal Citizenship. With a focus on enhancing the student and trainee experience and empowering them to become societal leaders, the Task Force explored challenges and outlined a five-year strategy focused on (1) increasing diversity and promoting inclusion, (2) enhancement of the educational curriculum to promote societal citizenship and increase awareness of societal issues and ways for advocacy, and (3) ensuring accountability for diversity across all levels of leadership. In 2017, Dean Minor formally charged the Stanford Medicine Diversity Cabinet to advise the Dean and School leadership, disseminate communication, and provide coordination across the myriad of diversity- and inclusion-related initiatives with Stanford Medicine. The

Cabinet reports directly to the Dean and includes faculty, staff and trainee representatives from the Stanford School of Medicine, Stanford Hospital, and Lucile Packard Children's Hospital.

Further, the Diversity Center of Representation and Empowerment, or D-CORE, was established in October 2017 to provide a physical location where any member of the Stanford Medicine community interested in issues of inclusion and diversity can hold meetings or support groups, or just hang out and study. It includes a space for prayer and meditation, and diversity-focused staff hold regular office hours to increase engagement with and support for students of all backgrounds.

9. Ensuring the research facilities and laboratory practices promote the safety of trainees. Safety is a core value at Stanford, and the University is committed to continued advancement of an institutional safety culture with strong programs of personal safety, accident and injury prevention, wellness promotion, and compliance with applicable environmental and health and safety laws and regulations. Stanford University makes all reasonable efforts to: (1) promote occupational and personal safety, health and wellness; (2) protect the health and safety of Stanford University faculty, staff, and trainees; (3) provide information to faculty, staff, and trainees about health and safety hazards; (4) identify and correct health hazards and encourage faculty, staff, and trainees to report potential hazards; (5) conduct activities in a manner protective of the environment, and inform the Stanford community regarding environmental impacts associated with institutional operations; and (6) maintain a risk-based emergency management program to reduce the impact of emergency events to the Stanford community.

Faculty, staff, and trainees are responsible for: (1) keeping themselves informed of conditions affecting their health and safety; (2) participating in safety training programs as required by Stanford policy and their supervisors and instructors; (3) adhering to health and safety practices in their workplace, classroom, laboratory, and student campus residences; (4) advising of or reporting to supervisors, instructors or Environmental Health and Safety potentially unsafe practices or serious hazards in the workplace, classroom or laboratory. Stanford's program for providing a safe workplace for faculty, staff, and trainees includes: facility design; hazard identification, workplace inspection, and corrective action; shutdown of dangerous activities; medical surveillance; and emergency preparedness.

10. Ensuring the research facilities are accessible to trainees with disabilities. Stanford Biosciences supports the recruitment, enrollment and graduation of students with disabilities. The Vice Provost for Graduate Education's diversity statement (http://vpge.stanford.edu/diversity/) includes disabled students, and the Stanford Office of Graduate Admissions clearly states our policy of non-discrimination, including prohibiting discrimination based on disability (https://studentaffairs.stanford.edu/policies). Furthermore, the application and recruiting materials for Stanford Biosciences programs all indicate Stanford's full compliance with the American with Disabilities Act and the Stanford Biosciences webpage includes a link to the Office of Accessible Education, which provides resources to all students on campus, undergraduates and graduates, with disabilities (https://studentaffairs.stanford.edu/oae). All of Stanford's research facilities are fully accessible to researchers with disabilities, and we are fully committed to providing any necessary accommodations for disabled students. While it is not required for applicants to declare any physical or mental disabilities they may have during the admissions process, those who self-identify as having a disability are invited to attend our Bioscience Annual Diversity Luncheon. Representatives from the Office of Accessible Education attend orientation events and distribute materials on disability accommodations.

11. Ensuring a positive, supportive and inclusive research and training environment for individuals from all backgrounds. The SoM and H&S provide an environment of personal and professional exploration, allowing students and postdocs to define and follow their own path to success. The students have full access to the undergraduate, graduate, and medical curricula to supplement and enhance their educational and training experience. Throughout their PhDs, our graduate students have the opportunity to enroll in courses in the School of Medicine, School of Humanities and Sciences and School of Engineering. Our unique location in the middle of Silicon Valley – as well as the co-location of SoM and H&S with the rest of Stanford's campus – allows for diverse connections to interdisciplinary collaborations and opportunities in and out of the lab. The curriculum reflects this interdisciplinary perspective by also offering access to courses in other schools including Business, Education, and Law. Stanford faculty, alumni and staff offer trainees the mentoring and resources to succeed in a wide range of careers.

The following SoM programs are also instrumental in enriching the research and training environment for students from all backgrounds:

- The Stanford Biosciences Grant Writing Academy, sponsored by the office of Dean Talbot, supports trainees in creating proposals and productive writing practice; teaches trainees to write and edit efficiently; empowers trainees to elicit and provide effective feedback; and provides coaching, editing, and review of proposals and scientific writing. Proposals submitted by SoM graduate students have nearly doubled since the Academy was founded in 2014. The applicant success rate has remained stable at almost 30%, hence NIH fellowships to our students have doubled since the Academy was founded.
- The Wellness Matters program, sponsored by Dean Talbot's office, provides curricula, programs, and support for our graduate students that promote self-care, resiliency, and holistic personal health, helping to create an environment in which all graduate students can thrive. On a related note, all students have access to health insurance, counseling, and psychological services.
- The mission of the Student Outreach to Alumni Resources (SOAR) Mentor Program is to foster mentorship opportunities across the Stanford Biosciences community. This comprehensive mentoring program exposes students and postdocs to a breadth of career options, promoting greater community and collaboration with alumni.
- The Solidarity, Leadership, Inclusion, Diversity (SoLID) Mentorship Program connects graduate students with faculty who can provide additional mentorship to guide and support students on issues that may be largely outside of their research, such as mental health and wellness, academic activism, microaggressions, and imposter syndrome, among others.

Our multi-faceted mentoring approach allows graduate students and postdocs to be matched with peer and/or professional mentors of their choosing in additional to their faculty advisor. Trainees can opt to be matched with multiple mentors, thereby increasing the breadth of advice they receive.

The following university units are also essential in providing a supportive trainee environment:

- The Office of the Vice Provost for Graduate Education (VPGE) offers a complementary set of programs and events for Stanford graduate students in any discipline to help students grow academically and professionally. In addition, VPGE sets policy and provides programs related to advising and mentoring, diversity, professional development, interdisciplinary learning, and fellowships and funding. VPGE has provided guidelines for advising relationships between faculty and graduate students. In making expectations explicit, faculty advisors and students gain a shared understanding of Stanford's commitment to best practices that establish clear communication within faculty-student advising relationships.

- BEAM, Stanford Career Education also offers a complementary set of programs and events for our PhD and postdoc communities that focus on the academic track and the non-academic track. Examples include Jumpstart Your Academic Job Search, Academic Job Search: Negotiating Faculty Job Offers, and PhD Pathways.

Two key student organizations – the Stanford Biosciences Student Association (SBSA) and Biomedical Association for the Interest of Minority Students (BioAIMS) – welcome students from all backgrounds. SBSA's mission is to represent students studying biosciences at Stanford in the Schools of Medicine, Engineering, and Humanities and Sciences, and to enhance their quality of life by hosting social and academic events. BioAIMS addresses the needs and concerns of current minority graduate students in the biosciences through advocacy and programming.

In addition, Stanford has excellent centers committed to coordinating students' extracurricular and cultural activities and professional development. These centers include the Graduate Student Center and Cultural Community Centers for students from (or with interest in) the Latino, African American, Native American, Asian American, International, and LGBTQ communities on campus.

12. Ensuring that proper policies, procedures, and oversight are in place to prevent discriminatory harassment and other discriminatory practices and to appropriately respond to allegations of such discriminatory practices, including providing any required notifications to NIH. Stanford has long shared NIH's concerns regarding issues of harassment and discrimination. We take pride in welcoming students, faculty, staff, and postdocs of any race, color, national or ethnic origin, sex, age, disability, religion, sexual orientation, gender identity, veteran status, or marital status. Like the NIH, Stanford prohibits unlawful harassment including sexual harassment and sexual violence. Stanford also does not tolerate unlawful discrimination on the basis of these or any other characteristic protected by applicable law in the administration of the University's programs and activities.

There are policies in place to define and address discriminatory harassment concerns on our campus, including:

- Sexual Harassment: adminguide.stanford.edu/chapter-1/subchapter-7/policy-1-7-1
- Consensual Sexual or Romantic Relationships In the Workplace and Educational Setting: adminguide.stanford.edu/chapter-1/subchapter-7/policy-1-7-2
- Prohibited Sexual Conduct: Sexual Misconduct, Sexual Assault, Stalking, Relationship Violence, Violation of University or Court Directives, Student-on-Student Sexual Harassment and Retaliation: adminguide.stanford.edu/chapter-1/subchapter-7/policy-1-7-3
- Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Policy: adminguide.stanford.edu/chapter-1/subchapter-7/policy-1-7-4

There are three main Stanford entities that are concerned with prevention of and response to varying forms of discriminatory harassment. These entities are engaged depending on the population that is impacted and the nature of alleged harassment. The Sexual Harassment Policy Office (harass.stanford.edu/) and the Office of Sexual Assault and Relationship Abuse (SARA) address sexual harassment concerns and provide education and training across all University populations; the Title IX Office (titleix.stanford.edu/) specifically address these concerns for student populations. For harassment issues that are not solely sexual, Stanford's Diversity and Access Office (diversityandaccess.stanford.edu/) sets non-discrimination policy that impacts the entire campus.

13. Ensuring that trainees will continue to be supported when they transition from the training grant to other sources of support. The SoM and H&S cover all student expenses not provided by the training grant, including a stipend considerably higher than the training grant minimum to reflect the high cost of living in the Bay Area. There are funds to provide students the ability to carry out research in their lab of choice across all our Home Programs, so that students have the opportunity to pursue their passions in research topic and lab. SoM covers expenses for Biophysics students, which includes years 3 and 4, when they are not appointed to the training grants. For students in year 5 and up, the PIs are responsible for their funding support. SoM and H&S also provide a significant operating budget for the Biophysics Program. The university also offers Stanford Graduate Fellowships, which cover full tuition and stipend for a significant proportion (currently approximately 20%) of our students. H&S also provides a two-year fellowship slot every year that can be used for international students, funding for trainee activities, and salary support for you as the Director.

14. Providing resources and expertise for evaluating program training. In 2015, in partnership with our 14 home programs, Stanford Biosciences developed a central repository of PhD alumni information to track alumni outcomes from those that graduated since 2000. We organize alumni data to include geographic representation, employers, job sectors, academic details, and industry details. To date, we have evaluated outcomes for 1,593 alumni from 2000 to 2018 including training grant participants. Our goal is to track our PhD alumni annually to understand their career choices, including job sectors, job titles, employers, and geographic locations. All data is stored in the Graduate Student Tracking Alumni Module and shared with the home programs. In addition, we have invested resources into developing T32 websites to highlight training grant alumni outcomes, including the Stanford Molecular Biophysics T32 website (http://med.stanford.edu/biophysicstrainingprogram.html).

In sum, we are very appreciative of your outstanding leadership and are excited to have you at the helm of this important training program. We share your enthusiasm for promoting the best possible research and training in the areas of molecular biophysics by facilitating and cementing interdepartmental and interschool ties among trainees and faculty in these areas. Thus, we support your application in the strongest possible terms, and we hope that the NIH will support this highly successful and innovative program.

Sincerely yours,

William S. Talbot, PhD
Professor of Developmental Biology
Senior Associate Dean for Graduate Education and Postdoctoral Affairs

Peter Michelson, PhD
Professor of Physics
Senior Associate Dean for the Natural Sciences