Responding to workforce realities and data from our institution indicating that graduate students were considering multiple career options, in 2009 the University of California, San Francisco launched one of the first formal internship programs for PhD-level life science students to explore the full spectrum of possible career options. We have since replicated the program model through a partnership with the University of California, Davis. Funding from the Gordon and Betty Moore Foundation enabled this partnership as well as a robust evaluation of both programs led by an external evaluation team at Northwestern University.

The success of our program model also hinges on participation of potential employers from the public and private sectors who provide internship opportunities.

Internship Program Model
Our internship program is an optional training opportunity for life science graduate students that starts from structured career planning and leads to hands-on experience for the full range of careers available to PhD scientists. The vision is that students will be able to make free and informed career decisions by the time of graduation. The program model has two main components: a training course, and an internship that is encouraged, but optional. Students apply to participate in the program, enter as a cohort and complete the training, which consists of 8, 2-hour workshops on: (1) Self Assessment: understanding the skills, values and interests that drive future career satisfaction; (2) Career Exploration: learning how to explore career opportunities; (3) Choosing a Best-fit Career Path and Setting Goals for the Future; (4) Creating and Sharing an Individual Development Plan; (5 & 6) The Internship Job Search Process: job search strategies and resume writing; interviewing and negotiating skills; (7) Succeeding in Your Internship: how to work with supervisors and peers in the non-academic workplace; and (8) Communication Styles: working effectively with others in the workplace.

Students become eligible for internships upon completion of the training. Internships can be completed at any point in time up to 6 months after completion of their PhD. Students from previous cohorts are able to go on internships at any time. Internships are typically full-time for 3 months near the end of the PhD or just after; however part-time internships are also an option. Full-time internships are almost exclusively compensated by the employer. Trainees find internship positions through opportunities developed by program staff, personal connections (including through research mentors), informational interviews and posted opportunities (often advertised by program staff).

The program also hosts a biennial networking event in which employers (alumni and friends of the academic institutions) offer career advice in a structured but low-stakes setting. Trainees are given guidance on how to make the most of the event as part of their career exploration and professional development. Similar in purpose to the networking event, employers can also

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1 A manuscript detailing our evaluation plan and results is in preparation.
participate in “Coffee Talks”, which are informal conversations with 6-12 students held sporadically throughout the year.

Role for Public and Private Sector Employers
The primary role for employers is in providing internships. Employers must provide a designated primary supervisor and a defined internship job description with responsibilities and work product(s). For-profit organizations offering full-time internships must pay students at least the equivalent of their research training stipend plus the cost of health insurance.

Employers also participate in the networking events described above, make themselves available for informational interviews with individual students, and offer advice to the program through formal (e.g. advisory capacity) and informal (e.g. casual check-in) channels.

Value for Employers
- Employers have access to highly-skilled and highly-motivated students for short-term projects; program staff can assist with developing appropriate internship experiences and advertise to appropriate trainees; employers decide which student(s) to hire.
- Participating in the internship program can benefit employers’ recruitment efforts for full-time positions (both former interns and more broadly across the institution).
- Individual employees enjoy a sense that they are “giving back”, often commenting that they wish a program like this existed when they were earning their PhD.

Value for Trainees
- Training teaches career exploration skills and prepares trainees for internships. Trainees also benefit from hearing about their peer’s career decision-making experiences which normalize many of their own experiences and feelings.
- Internships increase the ability of trainees to discern their career area of choice and increase their confidence in pursuing that career (e.g., percentage of students who identified as “very confident” in their career choice increased from 22% to 61% post-internship).
- Students who do internships also gain valuable skills, a larger professional network and enhance their competitiveness for jobs through job knowledge and hands-on experience.

Lessons Learned and Suggestions for Future Work
- Dedicated staff resources are needed to manage the program, particularly to assist students and employers with internship logistics; future work should focus on how best to empower trainees to secure their own internships, as this exercise itself benefits students.
- Offering flexibility in internship timing and length allows more students and employers to participate; future work should focus on gaining a deeper understanding of the relative impact of different internship characteristics (i.e. internship timing, length, etc.) on trainee outcomes including timely career decision-making.
- Employers are very willing to participate in this type of program; future work should focus on understanding how to make best use of their time (i.e. not everyone can serve an internship supervisor but could contribute in other ways) and sustain participation.
- Programs benefit from being situated in areas that employ many life science PhD’s (e.g. San Francisco Bay Area); future work should focus on how to supporting internship opportunities for trainees at institutions residing in smaller job markets.