

## ACTIVITIES PLANNED UNDER THIS AWARD

The following table shows percent effort to be devoted to the various activities planned under this award:

Year	Research	Coursework/Professional Development	Clinical	Other
Pre-Funding	80%	Courses and Milestones (19%)	0%	1%
1	80%	Professional Development (14%)	5%	1%
2	85%	Professional Development (9%)	5%	1%
3	90%	Professional Development (4%)	0%	1%
4	85%	Professional Development and Milestones (10%)	4%	1%

Research: I will allocate the majority of my time to research during the fellowship. In the lab, I will continue mastering organic synthesis, *in vitro* testing of molecular function, and cell culture. I will also gain experience working with a co-culture hypoxia-reoxygenation model under the expert guidance of Dr. Weber's group. These cell culture experiments give me an opportunity to build on my knowledge about confocal microscopy from my coursework and learn the technique in practice. Finally, the proposed animal experiments will give me the opportunity to learn several new techniques, including animal surgery (specifically, coronary artery ligation), histology, echocardiography, and hemodynamics (PV loops) with the expert guidance of Dr. Wang's group and the Vascular Medicine Institute Small Animal Hemodynamic Core.

I will collect and analyze my own data, and I will write up all manuscripts on my own and revise them with Dr. Deiters's guidance. I will continue my standing weekly meeting with Dr. Deiters, and will have a conference call with Drs. Deiters, Weber, and Wang every two months to discuss research progress. After completing my comprehensive exam in Summer 2018, I will start meeting with my thesis committee semiannually. I will also continue semiannual meetings with my career advisor, Dr. Don DeFranco, to update him on my progress, to discuss career goals, and to get an impartial second opinion on scientific or personal matters that arise during my training. I will present my work at lab meetings, the biological chemistry division seminar series, VMI Research in Progress meetings, and the American Chemical Society National Meeting. In 2020, I will apply for a travel award to present my work at the Nox Family (NADPH Oxidases) Gordon Research Conference.

Coursework and Professional Development: I will complete all required coursework by the beginning of the fellowship. The Chemistry Graduate Student Advising Committee helped me design a customized course of study suited to my needs as a physician-scientist in training. I have already completed a personalized medicine course and an advanced molecular biology course, and I audited a synthesis course based on FDA-approved drugs. Currently, I am taking Advanced Biological Chemistry 2 and Imaging Cell Biology in Living Systems.

My professional development will continue through the MSTP, building off of the foundation I have built from the first three MSTP professional development courses and the relevant courses in the School of Medicine. I will continue to attend monthly workshops discussing ethics and career development, and will continue to plan one such workshop every year. Additionally, I will take the MSTP Ethics for Medical Scientists course in April-May 2017. I will attend professional development workshops through the Dietrich School of Arts and Sciences as well (including workshops on grant writing, presentations, and an upcoming Computational Biophysics workshop at the Pittsburgh Supercomputing Center on the rational design of drugs and protein engineering).

Clinical: I will complete two Longitudinal Clinical Clerkships (LCCs), each 20 weeks long and consisting of a half-day each week of seeing patients one-on-one with an attending physician. I have already planned one with Dr. Frederick Crock, a consultant on this proposal who is a seasoned cardiologist with particular expertise in echocardiography, which will take place in Fall 2017. I will complete a second LCC in Fall 2018. As I prepare to return to medical school, I will take the MSTP Clinical Reentry course, which is a case-based review of skills in physical diagnosis, medical decision-making, and treatment planning led by master clinicians.

Other: I will devote time to community outreach and committee involvement through the medical school, chemistry program, and MSTP. My lab participates regularly in community outreach to teach underprivileged youth about science, particularly through DNAZone, and I have made arrangements to run several sessions at the Center of Life Camp this summer. Additionally, I regularly volunteer to help provide healthcare to uninsured Americans through the Birmingham Clinic and the Guerilla Eye Service via the School of Medicine. I currently serve as my class's representative for building improvement in the medical school. Lastly, In the MSTP, I currently serve on the Interviewing Committee and co-chair the Annual Scientific Retreat Committee.