

TRAINING IN THE RESPONSIBLE CONDUCT OF RESEARCH

Prior Training and Instruction in the Responsible Conduct of Research:

- 1) **University of Pittsburgh School of Medicine: Ethics, Law, and Professionalism Course** (8/2014 - 12/2014). This course was the second installment in the Patient, Physician, and Society series of courses. The course met for 1 hour and 40 minutes each week for 20 weeks. Every time the course met, I attended a 50-minute lecture by a physician, lawyer, or bioethicist, followed by a 50-minute faculty-led small group discussion. We discussed ethics in human subjects research, patient care, conflicts of interest, and emerging technologies.
- 2) **University of Pittsburgh Online Training Courses** (6/2014 and 6/2015). In 2014, I completed the University of Pittsburgh "Use of Laboratory Animals in Research and Education" and "Purpose Bred Mice and Rats in Research, Testing and Teaching" online training modules. I completed the Collaborative Institutional Training Initiative Biomedical Responsible Conduct of Research and Conflict of Interest online training courses in 2014 and 2015. These are hour-long training courses that I will re-complete as required by the University.
- 3) **MSTP Workshops** (since 9/2014). The MSTP holds monthly workshops for the entire student body. Each session lasts 90 minutes and involves small- or large-group discussions (often with a panel of experts) in addition to lectures. Topics vary widely, but we emphasize the ethics of biomedical research and clinical practice at each session. So far, I have attended 26 workshops, 3 of which I led:
 - a) **2015** - Seminar on ethical concerns with microscopy with Dr. Donna Stolz (Associate Director of the University of Pittsburgh Center for Biologic Imaging).
 - b) **2016** - Small- and large-group discussion of four bioethics case studies (clinical research risks/benefits, conflicts about authorship, and two cases about peer review).
 - c) **2017** - Seminar on Big Data with Dr. Shyam Visweswaran (director of the MSTP's biomedical informatics program).
- 4) **MSTP Professional Development Course 2: Methods and Analysis** (6/2015 - 8/2015). This course met for 1.5-2 hours every week for 10 weeks. It combined lectures and small group discussions led by MSTP Director Dr. Richard Steinman and outside experts (notably 3 sessions on biostatistics by Dr. Daniel Normolle, Director of the University of Pittsburgh Cancer Institute Biostatistics Facility). Topics included authorship, reproducibility, and the appropriate use of statistics for designing experiments and testing hypotheses.
- 5) **Basics of Personalized Medicine Course** (8/2016 - 12/2016). This course met for two hours twice a week for 20 weeks. Each class entailed a lecture and small-group discussion led by an expert in an aspect of personalized medicine. Topics included patient privacy, disclosure of incidental findings, and informed consent.

Training to be Completed During the Fellowship Period:

- 1) **MSTP Workshops** (since 9/2014). See above.
- 2) **MSTP Professional Development Course 4: Ethics for Medical Scientists** (04/2017 - 05/2017). This course will meet four times for 2-hour small-group discussions led by Dr. Richard Steinman and Dr. Karen Schmidt (Director of the University of Pittsburgh Responsible Conduct of Research Center). Topics will include plagiarism, conflicts of interest, and research misconduct.
- 3) **University of Pittsburgh Responsible Conduct of Research Training Center** (09/2017 - 08/2021). The Clinical and Translational Sciences Institute (CTSI) at the University of Pittsburgh offers weekly, 1-hour lecture and case-study centered workshops on a wide variety of topics taught by University of Pittsburgh faculty. I will attend 8 of these classes during my graduate training.

Role of Dr. Alexander Deiters in Responsible Conduct of Research Training: Throughout my graduate school training, I have had, and will continue to have, discussions with Dr. Deiters about ethical issues in the biomedical research. Dr. Deiters is conscientious about these matters and brings them up frequently during his classes, during group meetings, and in one-on-one conversations. It is part of our lab's culture to be up-front and transparent about documentation and decisions about authorship. As an accomplished medicinal chemist who has consulted for several pharmaceutical companies, received 14 issued patents as an inventor or co-inventor, commercialized his lab's optical nucleic acid triggering technology, and received a 2009 grant from Teva Pharmaceuticals (see **Sponsor Biosketch**), Dr. Deiters is quite knowledgeable about the relationship between academia and industry, and intellectual property considerations and conflicts of interest frequently find their way into our discussions.