External Mentor: Martin G. Myers Jr., MD, PhD, is currently the Marilyn H. Vincent Professor of Diabetes Research at the University of Michigan. Dr. Myers is a leader in the fields of weight regulation and diabetes, particularly in the neuronal and signal transduction pathways activated by the hormone leptin, a crucial regulator of food intake and energy homeostasis. In 2010, he received the American Diabetes Association's prestigious 2010 Outstanding Scientific Achievement Award and his current support includes the National Institute of Diabetes, Digestive and Kidney Diseases MERIT Award.

Mentor Choice and Expected Role as Mentor and collaborator: Dr. Appleyard is an Assistant professor in the Department of VCAPP and the Program of Neuroscience. She has recently expanded her research focus to study how leptin regulates neuronal function. This work stems out of a growing interest in the association between obesity and the development of neurological problems such as Alzheimer’s disease and depression. Funding from the Advance External Mentoring Program at WSU would help foster Dr. Appleyard’s career development in three key areas:

1. To support scientific mentoring from Dr. Myers. Specifically, Dr. Myers will provide critical scientific advice to Dr. Appleyard as she expands her research into the field of leptin signaling as Dr. Myers is an acknowledged leader in this area.

2. To support mentoring from a leader with a very successful research program who has had numerous effective collaborations. This aspect is critical as Dr. Appleyard looks to expand her research program and set up collaborations she would greatly benefit from receiving advice about collaborating, especially outside of WSU, and how to take the next critical step in establishing her research program at the national and international level. Dr. Myers also has experience mentoring young women investigators.

3. To help establish an active collaboration with Dr. Myers. Dr. Appleyard has started a new project to determine the molecular mechanisms by which leptin influences synaptic development and hippocampal function. It involves active collaborations with Dr. Gary Wayman in VCAPP, who is an expert in synapse formation and Dr. Soren Imprey, at Oregon Health & Science University, a pioneer in using non-biased screens to identify novel signaling molecules. This project would benefit not only from Dr. Myers’ specific scientific knowledge about leptin signaling, but also because Dr. Myers has numerous genetic tools and mouse models that will be extremely helpful.

Seminar Topic of Mentor: The topic of Dr. Myers’s seminar would be the action of leptin in the brain. For example, a possible title would be “Leptin signaling in the Brain”, the title of his upcoming Keystone symposium talk in 2012.

Tentative timeline: Dr. Myers and Dr. Appleyard will communicate regularly by e mail, telephone and / or videoconferencing. However, both mentoring and collaborations benefit greatly from direct interactions. To this end Dr. Appleyard will travel to the University of Michigan in the Spring or Summer of 2012. This will allow Dr. Appleyard to observe Dr. Myers’s interactions with his own research group. It will also allow her to visit and interact with other researchers in the Diabetes center and the Molecular & Integrative Physiology group at the University of Michigan and to present her data. In addition, it will provide an opportunity to have more informal discussions, both about the prospective ongoing research collaboration, as well as about running a lab, obtaining funding and managing collaborations. Dr. Myers will then travel to WSU in the fall of 2012 to present a seminar of his work. This would again allow more direct interactions between Dr. Myers and Dr. Appleyard, as well as for Dr. Myers to interact with Dr. Appleyard’s collaborator on the leptin project, Dr. Wayman.