**Resources**. The Bergland is a fully equipped lab with the resources necessary to perform lab and field experiments with Drosophila and Daphnia, wet-lab resources required to perform all molecular work described in this proposal, and computational resources to analyze high-throughput data we generate.

* Our lab is equipped with four stations for fly husbandry (dissecting microscopes, CO2, etc) plus one inverted microscope for Daphnia work. For laboratory culture, animals are raised in climate controlled Percival incubators (x2) or two walk-in Environmental Growth Chamber incubators. All four incubators have light, temperature, and humidity control enabling us to modulate aspects of the abiotic environment with high precision.
* The Bergland lab will be maintaining a small experimental orchard at the Morven XXXX Center. This orchard will be planted with 20 enclosed fruit trees that serve as mesocosms for outdoor fly culture. This orchard will be situated in a fenced area to inhibit interference from wildlife (e.g., deer). Please see letter of support from Dept. Chair Galloway.
* We will use this field site at Morven for outdoor Daphnia experiments when necessary. The Bergland lab also has access to the Mountain Lake Biological Station for additional field sites for natural and mesocosm based Daphnia experiments if necessary.
* The Bergland lab has access to a fully equipped molecular lab. Many of these tools are located in the Department of Biology’s shared molecular lab. These tools include PCR thermocyclers, water baths, gel electrophoresis rigs, Western blot rigs, an ABI qPCR machine, Illumina MiSeq sequencer, Roche 454 sequencer, and ABI capillary sequencer. Importantly for this proposal, the shared molecular lab also has a BioMek liquid handling robot capable of automated DNA and RNA extraction, concentration normalization, and high-throughput library preparation.
* The Bergland lab has the necessary computational tools to analyze large amounts of high-throughput sequencing data that we will generate. The lab is equipped with one 24-core Dell workstation with 64Gb of RAM and 16Tb of storage maintained with RAID-5. This workstation will serve as a platform for script prototyping, interactive data analysis, and RAM heavy operations. The University of Virginia also maintains the Rivanna shared computing cluster composed of over 6000 Intel Ivy Bridge cores; we shall utilize this resource as necessary for computationally intensive analyses.