Facilities

Much of the physical and computational infrastructure required to perform the proposed work has been developed over the last four years by my lab, or were in place at UVA prior to my arrival. These resources include:

1. Establishment of an experimental orchard for outdoor mesocosm work with Drosophila.
2. Design and production of 48 environmental growth chambers to independently manipulate temperature and photoperiod; these chambers are suitable for experimental work with both Daphnia and Drosophila.
3. Construction of an aquaculture facility for large-scale phenotyping efforts using Daphnia.
4. Development of genomic datasets from populations of Daphnia and Drosophila sampled over multiple years and multiple localities.
5. The Bergland lab utilizes computational resources provided by UVA’s high-performance computing cluster (Rivanna). In addition to a well-developed computing environment, Rivanna staff also offer courses and workshops to teach a variety of computational approaches. Members of my lab routinely attend these workshops to improve their skillset in various aspects of bioinformatic analysis.
6. The Biology Department at UVA maintains a Genomic Sequencing Core facility. We utilize the experience and toolset of this facility to generate sequencing libraries. In addition, the director of this facility has worked closely with members of my lab to teach them library construction techniques.

These infrastructural investments are coupled with a rich intellectual environment at the University of Virginia. Key attributes of this environment include:

1. An active and highly collegial network of faculty in ecology, evolution, and genetics. 13 labs associate with the EEB group at UVA. In addition, UVA also has intellectual strengths in cellular and developmental biology (24 labs) and neuroscience/behavior (15 labs). The Bergland lab is primarily situated with the EEB group but maintains collaboration with other labs (primarily Drosophila labs) in the department.
2. The EEB group at UVA holds a weekly seminar series for internal speakers and speakers from the region. This seminar series is coupled with a journal club led by post-docs and graduate students.
3. For the last 3 years, the Bergland lab has hosted “Biology Programming Hour”. This is a weekly co-working time for all members of the department to learn programming and data-analysis skills from one-another.