Facilities and Other Resources:

The MacManes lab currently has several distinct spaces within which research is conducted. PI MacManes has a private office located adjacent to his graduate student offices on the 1st floor of Rudman Hall. Also on the 1st floor is MacManes’s molecular lab, which is a 6 bay fully functional space in which graduate student, postdocs and research staff may conduct experiments. On the basement level in Rudman Hall is the Animal Resource Office, described below, to which MacManes has full access. In addition to these things, there are several conference rooms on each level of the building for conducting meetings and interacting with students.

In addition to these things, there is a rich collegial culture that exists at UNH and in particular in the department of Molecular, Cellular, and Biomedical Sciences, to which I am a member, that allows me to interact both formally and informally with more experiences colleagues. Further, the college has implemented a plan to limit my teaching and service commitments pre-tenure, which allows me to focus efforts on developing an active and vibrant research program. Beyond the college, I have formed, and will continue to develop relationships with faculty in the department of Computer Science (e.g. Phil Hatcher and Dan Bergeron). At an institutional level, there are numerous systems that aim to support early stage investigators including the Research and Engagement Academy, Up-2-NIH, the Writing Academy, editing services coordinated through the office of VP Nisbet. Taken together, these resources provide for an extremely stimulating academic environment. The GEBRI, which will provide additional layer of support and infrastructure, will greatly enhance the academic environment.

**SHARED RESOURCES**

**Hubbard Center for Genome Studies (HCGS)**

W. Kelley Thomas-Director

The HCGS, located on the 4th floor of Gregg Hall, currently has three research groups which focus on Genomics, Proteomics, and Glycomics. Available bench space will accommodate 28 scientists with additional areas for equipment and electrophoresis. The laboratory also incorporates 3 fume hoods, two biosafety cabinets, two environmental rooms and an autoclave. Eight faculty/postdoc offices and cubicles for 13 graduate students are located adjacent to the lab. A penthouse space wired with emergency power will accommodate up to 25 ultracold freezers. All other equipment is located on the same floor of Gregg Hall as the laboratory space. A wide variety of services are provided by the HCGS including sample preparation, Sanger sequencing, and high-throughput sequencing and associated quality control assays are provided on a recharge basis.

**Research Computing and Instrumentation Core Facility (RCI/UNH)**

(Director Patrick Messer)

The Research Computing and Instrumentation (RCI) center is housed in Morse Hall (research computing), Parsons Hall (instrumentation), Kendall Hall (instrumentation), and Rudman Hall (instrumentation) all on the Durham campus of the University of New Hampshire. The Research Computing facilities include a 2,000 square foot energy efficient data center that offers high performance computing and networking in support of the UNH research enterprise. The data center was renovated in 2011 providing new and improved security, power and cooling. RCI has a staff of IT professionals specializing in systems and network administration, security, database administration and software engineering also located in Morse Hall. The University Instrumentation Center operates and supports numerous instruments for Nuclear Resonance Spectroscopy, Ultraviolet-Visible-Near-Infrared Spectrophotometry, Infrared Spectrometry, X-ray Photoelectron Spectroscopy, Scanning Electron Microscopy, Transmission Electron Microscopy, Confocal Microscopy, and Energy Dispersive Spectroscopy. This RCI works closely with the Hubbard Center for Genome Studies for managing and disseminating the large datasets generated by next-generation sequencing platforms. These services are provided on a recharge basis.

**Support for Early Stage Investigators (ESI)**

The ESIs in this proposal have been supplied with startup funds and protected time for research (See Core A). In addition, these investigators have been involved with career enrichment guidance and mentorship through the Research Engagement Academy and have access to the Up-2-NIH programs offered at the University of New Hampshire and as described in Core A.

**Rudman Hall Bioinformatics Core Facility**

The Rudman Hall Bioinformatics Core Facility is a newly developed facility located on the 3rd floor of Rudman Hall, specifically designed to aid researchers (including ESI researchers and their lab members) in developing analytical pipelines for the analysis of genomic data. The facility has work space for 6 researchers and is equipped with a large genomics workstation, as well as several terminals for the remote access of on- and off-campus computer resources. The facility is staffed 50% of the time by a PhD bioinformatician employed by the HCGS.

**Animal Resource Office:**

The University of New Hampshire (UNH) Animal Resources Office (ARO) is a USDA-inspected facility which provides environmentally-controlled housing and care for traditional laboratory animals, amphibians, miniature swine and limited numbers of avian species.  The facility provides the environment, housing and care for said species in accordance to the AWA, PHS Policy and the standards outlined in the Guide for the Care and Use of Laboratory Animals.  The facility meets all federal, state and local guidelines.

The multi-room ARO complex includes a surgery room, a cage washing room, men’s and women’s locker rooms, and showers, and is maintained by a full-time animal care technician.  It has a back-up power source and includes areas for cleaning, sanitizing and autoclaving equipment. The ARO is directly overseen by an on-site veterinarian.