David L Nieland

Subject: Postdoctoral Position in Landscape Genomics

We seek to hire a highly motivated post doctoral researcher to participate in exciting interdisciplinary research that informs management solutions for restoring and enhancing the resilience of the submersed aquatic plant species Vallisneria americana in the Hudson River of New York. This keystone species was nearly eliminated from the Hudson River by Hurricane Irene and Tropical Storm Lee in 2011. We are in the unique position of having genetic data from immediately prior to the storms. Using cutting-edge approaches to quantifying genomic diversity within and among beds growing in 2015, we seek to understand the genetic effects of the extreme population reductions.
Further we are using genetic tools to understand the sources of and relationships among recovering beds. Samples for genomic diversity come from sites spanning ~190 km of the river, including the entire species range in the tidal portion of the river, two sites above the tidal influence, as well as nursery stock that is being considered for restoration.

The successful candidate will join Dr. Maile Neel's laboratory (alyxia.umd.edu) in the Department of Plant Science and Landscape Architecture (https://www.psla.umd.edu) and Department of Entomology (http://entomology.umd.edu/) at University of Maryland College Park. The person will also work closely with Dr. Katia Engelhardt (http://www.umces.edu/al/people/kengelhardt) at the University of Maryland Center for Environmental Science at the Appalachian Lab (www.umces.edu/al) where Vallisneria americana collections from the Hudson River are being propagated.

Tasks will include all aspects of laboratory work needed for reduced representation genotyping, including DNA extraction and cleaning, restriction digests, ligations, sequence based selection of fragments, and library construction in preparation for submission for sequencing on an Illumina HiSeq. Microsatellite genotyping will require setting up and running polymerase chain reactions and running samples on an Applied Biosystems 3730 DNA analyzer.

The incumbent will also be responsible for bioinformatics and analysis of genotyping by sequencing and microsatellite data, and preparing the manuscripts for publication. Analyses will include Bayesian population identification, assignment tests, and landscape genomic analyses.

The position requires a Ph.D. in ecology, evolution, conservation, or closely related field. Strong statistical and mathematical skills and demonstrated proficiency with R and GIS software for analysis for genomic data in a landscape genomic framework. We seek someone with excellent interpersonal and communication skills who can work both independently and collaboratively. The person will need excellent time management skills to bring multiple project threads to completion in a timely manner to meet our ambitious project goals. Excellent writing ability will be essential for communicating the research in high-impact peer-reviewed journals;

For consideration submit a letter of intent, including a statement of interests and professional goals, curriculum vitae, names and contact information for 3 references, to the following posting:
https://ejobs.umd.edu/postings/39736.

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