



### 2017 Internship Program Description

#### **Environmental Modeling Intern**

**Organization:** Henry's Fork Foundation

**Location:** Ashton, Idaho

**Job Type:** Internship (Summer 2017)

**Duration:** June 12 through August 21 (10 weeks)

**Job Summary:** The Henry's Fork Foundation (HFF) is currently accepting applications from undergraduate students with strong quantitative skills who are interested in working in the research and restoration program of a non-profit watershed conservation organization in the Greater Yellowstone region. The selected intern will participate in all sectors of non-profit work but will primarily work with HFF's science and technology team to automate real-time transmission, processing, and online archiving of streamflow and water-quality data from HFF's instrument network.

**Additional Opportunities:** HFF has year-round need for research assistants with strong quantitative and communications skills. Over the years, numerous summer interns have continued working for HFF throughout the winter in various capacities, both as hourly-wage technicians and as external consultants under project-specific contracts with HFF. Most often, these interns were recent graduates who took a year away from school before starting graduate studies, and they worked for HFF during that year. We encourage applications from students who are considering such a career path and who could bring strong scientific skills to the organization throughout the year.

**Organization Overview:** The Henry's Fork Foundation is a non-profit organization that works to conserve, protect and preserve the unique fisheries, wildlife and aesthetics of the Henry's Fork Watershed. HFF uses a collaborative, science-based approach to achieve its mission and works closely with water users, hydroelectric power companies, government agencies, and other nonprofit groups.

**Project Description:** This internship will provide a unique opportunity for the student to work closely with Dr. Rob Van Kirk, who has over 20 years of experience in research and management of fisheries and water resources on the Henry's Fork and throughout the Intermountain West. In addition to his position as HFF's Senior Scientist, Dr. Van Kirk is Professor Emeritus of Mathematics and Statistics at Humboldt State University. He specializes in mathematical modeling and statistical analysis of fish populations, aquatic ecosystems, and all aspects of hydrology in regulated river basins, including groundwater-surface water interactions, water-rights administration, and irrigation-system management. The internship will provide opportunities for the student to participate in a variety of research and management activities involving fisheries and water resources throughout the Snake River basin, such as attending management and planning meetings involving agency personnel and water users and attending the annual field tour of the Henry's Fork Watershed Council. These activities will allow the student to experience the collaborative decision-making process firsthand and to personally meet and interact with scientists and managers from state and federal agencies, other nonprofit organizations, and water-user groups.

Specific activities and projects include, but are not limited to:

- 1. *Water Quality Real-time Data Network:*** Continue work begun by the 2016 Environmental Modeling Intern to facilitate remote data transmission from water quality sondes in the field to a cloud or server, from which it can be made available via a web-based interface. This includes work on the ground to implement data transmission technology, including installation and testing, and developing the web-based interface that will import and display the data.
- 2. *Scientific Publication:*** Assist in all aspects of preparation of scientific reports and papers, including literature review and graphics.
- 3. *Henry's Fork Day:*** All interns are required to participate in "Henry's Fork Days", our main member outreach and fundraising event, on Friday and Saturday, June 16-17. Interns will help with set-up and event duties, alongside the entire HFF staff. At this event, interns will also be recognized to our membership for their internship.
- 4. *Outreach/ Education:*** HFF has a youth education program that works to engage youth in their watershed and the work we do to protect it. Interns will assist, as needed, with our youth fly-fishing program "Youth on the Fly." In addition, all interns will contribute to the HFF blog and social media posts.
- 5. *Field Work:*** Although primary duties of the modeling intern will be to work on modeling, statistical analysis, and scientific publication, a portion of the intern's time during the summer will be devoted to field work. In 2017, this work will include monitoring of fish passage facilities, interviewing anglers for a study on economic value of recreational fishing,

collecting water-quality samples, maintaining continuous-recording water-quality instruments, and monitoring fences that keep livestock away from streambanks.

**Qualifications:** We are seeking a motivated student with strong quantitative and computing skills who is interested in learning how rigorous scientific research conducted by a non-profit organization contributes to local, regional, and state-wide conservation and management of fisheries and water resources. Students majoring in mathematics, engineering, and computer science or in the earth, environmental, or biological sciences are encouraged to apply. At a minimum, quantitative preparation should include calculus, linear algebra, at least two probability/statistics courses, and programming skills in one or more widely used computing languages. The HFF science and technology team uses the R statistical programming language for all data processing, analysis, and modeling applications. Applicants should also have good communication skills, be able to work well alongside others, and be flexible to work on an array of projects.

*For specific information on this internship, contact Dr. Rob Van Kirk at [rob@henrysfork.org](mailto:rob@henrysfork.org)*

*To learn more about the HFF and the work we do, please explore the following links.*

Henry's Fork Foundation website: [henrysfork.org](http://henrysfork.org)

Henry's Fork Foundation Blog: <http://henrysfork.org/blog>

Henry's Fork Foundation YouTube: <https://www.youtube.com/user/HFfoundation>

Henry's Fork Foundation Facebook: [facebook.com/Henrysfork](https://www.facebook.com/Henrysfork)