

## USGS NSF GRIP Opportunity

<b>USGS Center:</b>	Idaho Water Science Center
<b>Project Title:</b>	Vulnerability of Streams and Rivers in the Western United States to Drought Conditions
<b>Project Hypothesis or Objectives:</b>	<p>During the summer of 2015 a large and unique set of streamflow and temperatures measurements were collected across six western states (Washington, Oregon, Idaho, Utah, Nevada, and California) in areas potentially impacted by drought conditions. The dataset was collected to identify drought impacts on watersheds within the west providing information on streamflow generation, stream resiliency, ecosystem health, and characteristics of vulnerable watersheds. The data will also be used to assess how the change in the amount and dominant form of precipitation from snow to rain during water year 2015 affects streamflows in western rivers and streams.</p> <p>The unique dataset collected during record breaking drought conditions and attention given to water management in the west makes the results of this investigation highly anticipated by water management agencies.</p>
<b>Duration:</b>	9-12 Months
<b>Internship Location:</b>	Boise, ID; Portland, OR; Tacoma, WA
<b>Area of Discipline:</b>	Hydrology, Statistics, Remote Sensing, Geography
<b>Expected Outcome:</b>	The research will be directly used to manage water and ecological resources within the West through a synoptic analysis of the streamflow datasets in conjunction with other ancillary geographic, hydrologic, remote sensing, and climate data. The investigation will be used to identify and infer risk of western watersheds to drought conditions and to identify the characteristics of these streams and watersheds that contribute to risk.
<b>Special skills/training Required:</b>	Completion of a Bachelors or Master's degree in hydrology, geology, geography, remote sensing, civil engineering, mathematics, or similar field of study. Applicant must be proficient in statistics, management of large data sets, and watershed hydrology.

● **Duties/Responsibilities:**

The incumbent will be required to analyze a large and unique set of streamflow and temperatures measurements collected during the summer of 2015.

- 1) The incumbent will be responsible for quantifying relationships within the data based on the characteristics of the streams and watersheds, the change in climate conditions (precipitation, temperature, rainfall/snowfall, etc.), and the a priori climate conditions.
- 2) This year was unique with the increased contributions of winter precipitation as rainfall compared to snowfall. The impacts on streamflow resiliency to this change in precipitation form will be ascertained.
- 3) The incumbent will be responsible for comparing the FY2015 data to streamflow measurements captured during prior drought years to develop an improved understanding on streamflow resiliency, groundwater contributions, land use changes, and watershed management practices.

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