

## Julian Reyes



*BS, Civil Engineering (Washington State University)*

*PhD Student in Civil Engineering (Washington State University)*

*Advisor: Jennifer Adam*

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The NSPIRE IGERT Program is a multidisciplinary student doctoral training program designed to create a new generation of scientists with broad and rigorous training in nitrogen cycling who seamlessly integrate nitrogen cycle science for effective communication with public policy makers.

### **Research title: Eco-hydrologic modeling of nitrogen in grasslands: Investigating the role of management and impacts of climate change**

Julian is broadly interested in integrated modeling of hydrology, biogeochemical cycles, such as those of carbon (C) and nitrogen (N), and ecosystem processes. Using an eco-hydrologic model, his research will focus in two areas: (1) impacts of climate perturbations and management in grasslands (i.e. grazing, cutting) through coupled C-N-water modeling and their potential feedbacks, and (2) characterization of changes in the quality and quantity of agricultural and natural resources (i.e. plant N content, biomass yield). Integrated modeling of grasslands is important because their sensitivity to global change and response to management can improve our mechanistic understanding of these ecosystems under changing climate conditions and increased agricultural production, perhaps providing analogs to other ecosystems.

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