



Tai McClellan



*BS, Tropical Plant and Soil Sciences
(University of Hawaii at Manoa)
MS, Tropical Plant and Soil Sciences
(University of Hawaii at Manoa)
PhD Student in Soil Science
(Washington State University)*

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: Nitrogen dynamics in alternative cropping systems

Tai is researching nitrogen fixation, turnover, and losses in alternative cropping systems across different agroecological zones of Eastern Washington. Particularly, she is interested in determining the impact of residual soil nitrogen on the efficacy of legumes to biologically fix nitrogen. She will estimate nitrogen fixation using multiple techniques, including isotopic, molecular, and nitrogen balances. Additionally, she will also characterize nitrogen use efficiencies and develop nitrogen budgets over entire cropping systems with multiple rotations. She will measure crop uptake of nitrogen, residual soil nitrogen, plant-available soil nitrogen, nitrogen leaching, and gaseous losses. Findings from this study will be relevant to stakeholders who seek to better understand nitrogen dynamics in alternative cropping systems. As a larger implication of this study, Tai will translate results into policy and practice recommendations to mitigate ecological degradation associated with agricultural reactive nitrogen.

Contact information:

College of Agricultural, Human, and Natural Resource Sciences

Office: 235 Johnson/ Washington State University / Pullman, WA 99164

Tel: 808-342-0275 – Email: tai.mcclellan@email.wsu.edu – Web link: <http://igert.nspire.wsu.edu/>