

Tree Lab SCRP Application Guidelines 2024

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Please consult the application requirements on the SCRP web site:

<https://willamette.edu/arts-sciences/additional-academic-opportunities/scrp/eligibility/index.html>

Please also note that these requirements include a separate statement of purpose, an unofficial copy of your transcript, and completion of an online application.

As part of the application, you are to submit a PDF response to the assignment described below. All written work should be single spaced, with 1" margins and 12-pt font.

Online SCRP Proposals are due by 5 pm March 10, 2024.

INTRODUCTION

My research explores human and natural system interactions, with much of the focus on forest ecosystems. For the 2024 SCRP season "Fire and Ice In the Tree Lab" will examine ecological processes in the wake of two landscape scale disturbance events in Oregon in 2020 and 2021, using collected field data and dendroecological techniques engaging tree rings. The first disturbance event was the 2020 Beachie Creek Fire that burned over 78,000 hectares across federally designated wilderness as well as intensely managed public and private forests within the Santiam Canyon just to the East of Salem. The second event followed less than 5 months later: in February 2021, a severe ice storm affected 6 counties throughout the Willamette Valley, causing significant damage to infrastructure as well as affecting urban and rural forests throughout the region. Both events allow us to examine the role these disturbance regimes have played in the past and present, and what the future may have in store for forest ecosystems and the communities which depend upon them.

Assignment

- 1) Explain the role that natural and anthropogenic disturbances have played in **A)** the Oregon White Oak (*Quercus garryana*) woodlands of the Willamette Valley and **B)** the Douglas Fir (*Pseudotsuga menziesii*) and Western Hemlock (*Tsuga heterophylla*) forests of the Western Cascades. What patterns of disturbance have been prevalent in these areas over time, and what processes have they facilitated? How have the disturbance regimes for both A and B changed over time? In your response be sure to properly cite appropriate literature, utilizing sufficient resources. Your answer should be between 1 and 2 pages single spaced.
- 2) List and briefly describe any prior experiences or courses (including ones you are currently taking) that have engaged in field data collection, vegetation surveys, forest ecology, forest mensuration, biogeography, dendrochronology, statistics, and GIS. If you have used specific programming, spatial, analytical or statistical software packages (e.g.,

Python, QGIS Cdendro, CooRecorder, R) please be sure to include their extent of use in your descriptions.

- 3) You are four miles from the trailhead where the van is parked. It is a rainy and blustery day and you and your SCRP partner are sampling trees in rugged terrain when your partner falls and seriously sprains their ankle. There is no cell phone coverage, and no road access. What do you do? (answer in less than a page, single spaced).