



**Oregon State
University**

**Department of Forest Engineering,
Resources and Management**
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**Postdoctoral Scholar opportunity
(GIS Development of Forest Ecophysiology Modeling)**

Department of Forest Engineering, Resources and Management, College of Forestry,
Oregon State University (<http://ferm.forestry.oregonstate.edu/>)

Dr. Carlos A. Gonzalez-Benecke / (541) 737-2103

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I am offering a Postdoctoral Scholar position to work towards research and development for improving reforestation efforts in the Pacific Northwest of the United States.

The appointee will integrate GIS with data collected and models developed from field study sites part of the Competition and Site Interactions Experiment (CoSInE) project of the Vegetation Management Research Cooperative (VMRC). The study was designed to evaluate the physiological mechanisms behind observed differences in productivity and survival of Douglas-fir and western hemlock seedlings growing under different levels of vegetation management. The project aims to better understand the effects of vegetation management treatments on the soil and plant water relations of conifer plantations in the Pacific Northwest by analyzing conifer seedling and competing vegetation interactions during the first five years after planting. Measurements and models developed include dynamics of soil moisture, plant water potential, xylem hydraulic conductivity, as well as biomass growth of both conifer seedlings and competing vegetation.

The incumbent will be expected to develop a system that will integrate all equations into a web-based Geographic Information System using R programming and R Shiny, or alternatively Python programming and Dash along with Google Earth Engine. The incumbent is also expected to produce compelling scientific articles for publication in peer-reviewed journals, and to contribute to other research and outreach activities of the VMRC.

The ideal candidate should be a highly motivated individual, able to work collaboratively and independently. The successful candidate should have demonstrable quantitative skills in two or more of the following: statistical analyses, modeling, forest ecophysiology, geospatial analysis, and scientific writing and communication. Qualifications: PhD degree.

Position Responsibilities:

The appointee will:

- Develop an integrated system that synthesizes field-collected data, models, and equations into a web-based Geographic Information System (GIS).

- Utilize R programming and Shiny app development, or alternatively Python programming and Dash, alongside Google Earth Engine, to build tools for ecological and forest management applications.
- Analyze spatial and temporal data to support forest regeneration efforts, including the integration of PRISM weather data, SSURGO soil data, and other GIS-based datasets.
- Publish scientific articles in peer-reviewed journals.
- Contribute to research, outreach, and collaborative efforts of the VMRC.

Qualifications:

- PhD in forestry, environmental science, geography, or a related field.
- Strong proficiency in R programming for data analysis and visualization, or alternatively Python, with experience in R package development and Shiny app implementation (or Dash for Python).
- Expertise in geospatial analysis and tools such as Google Earth Engine and GIS software.
- Familiarity with PRISM climate data, SSURGO soil data, and their application in ecological modeling.
- Quantitative skills in statistical analysis and modeling.
- A track record of scientific writing and communication, demonstrated through peer-reviewed publications.

The Postdoctoral Scholar position is fully funded for two years. Includes salary plus benefits. Further information about salary and benefits can be found here:

<https://gradschool.oregonstate.edu/postdocs/stipends-and-benefits>

The VMRC is a research cooperative that consists of private companies, public land management agencies and scientists from Oregon State University that are working together to conduct applied forest regeneration research, with a main emphasis on forest vegetation management (<http://www.cof.orst.edu/coops/vmrc/>).

Application deadline: November 10, 2024 (or until position filled)

Starting date: 01/06/2025 (negotiable).

Please send a letter of interest and a CV/resume that includes contact information for three references to:

Dr. Carlos A. Gonzalez-Benecke

Associate Professor

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