

Application Related Information

Application: Application Not Verified
Grad Program Applying To: MES

Iteration Name: 202510_GR_G
Program Name: MES

Recommendation Information

Recommended By: Dylan Fischer
Recommenders Institution: The Evergreen State College

Recommenders Title: Lead Faculty

Contact Name: Orion Gee

Waive Access to Recommendation Ltrs: I do not waive my right to review this recommendation.

Recommendation Waiver Choice:

Recommendation Form Submitted: ✓

Recommendation Status: Received

Received Date: 03/11/2024 12:09 PM

Recommender Assessment: I recommend this applicant.

Recommendation Type: General

Recommender Form: Letter of Recommendation

Recommendation Entity ID: 1024000116762673

Recommendation Owner: Josephine Bernier

Recommender Form Questions

How long have you known applicant:

Applicant ability as self-directed learner:

Time since last contact with applicant:

Applicant as productive member of group:

Relationship with Applicant:

Applicant most significant strengths:

Ability to complete rigorous grad program:

Responsibility/reliability:

Communication Skills - Oral:

Communication skills - written:

Service Orientation-sensitivity/empathy:

Ability to work independently:

Ability to handle stress:

Ability to think critically:

Ability to analyze/problem solve:

Ability to think creatively:

Openness to feedback:

Potential for leadership:

Ability to work in a team:

Personal/professional reflection:

Description Information

Description:

Form URL: <https://evergreenstatecollege.radiu>

Other Information

Created Time: 12/26/2023 02:11 PM

Created By: Josephine Bernier

Modified Time: 03/11/2024 12:09 PM

Modified By: Josephine Bernier

Back to Offering

- Academic Progress
- Enrollment Info
- Evaluation
- Evaluation of Faculty
- Self Evaluation

Gee, Orion A

Winter 2022 - Plant Ecology and Physiology (UG)

Unlock

- Last edited by: Pam Udovich (Mar 18, 2022 - 10:28:37 am)

This evaluation revision has been shared with the student.

Description

Faculty: Lalita Calabria, Ph.D. and Dylan Fischer, Ph.D.

This program focused on the study of individual plants from the cell to the organismal level (physiology), the interactions among plants (community ecology), and the physiological interactions of plants with their environment (ecophysiology). Students learned field and laboratory methods for studying plant community ecology and plant physiology including vegetation sampling methods, methods for measuring plant growth, photosynthesis, water-stress, plant traits, and tree water-use. In laboratory, students also learned how to measure phenology, seedling germination, clone propagation, leaf area and specific leaf area, plant stomatal density, plant cell and tissue structure, and how to conduct allelopathy assays. Plant ecology lectures were supported by the primary literature and the book *Cottonwood and the River of Time* by Stettler. Plant ecology lecture topics included plant communities, competition and facilitation ecology, succession, population genetics, community genetics, and the potential effects of large-scale disturbances, such as climate change, on plant communities. Physiology lectures were supported by the text *Introduction to Plant Physiology* by Hopkins and Hüner. Lecture topics in physiology included water relations and water pressure, plant growth and development, photosynthesis, plant hormones and secondary metabolism. Students applied what they learned to better understand current research in the broader fields of ecophysiology, global change, and restoration ecology.

Local day trips to temperate rainforests, coastal habitats, and prairies, allowed us to do hands-on observations in plant physiology, plant restoration, and the plant ecology of diverse environments.

Students all contributed to four major class-wide research project including: 1) a greenhouse experiment examining tree budburst in response to different soil types, 2) a maple-sap tapping experiment where we tapped more than 30 trees for maple syrup and analyzed sugar content and volume among different trees, 3) a plant traits experiment combining class data with a global database for plant traits, and 4) a native plant germination experiment examining seedling germination potential in local forest soils. Student contributions to these projects were assessed in a final paper and presentation at the end of the quarter.

Skill-building in scientific writing was an emphasis throughout the program. Students completed weekly writing exercises and class discussions focused on analyzing scientific papers and how to improve them. These activities were anchored in the text *Writing Science* (Schimmel 2011). Students also worked in groups to develop, write and present a research proposal. Students presented their proposals at the end of the quarter.

Narrative

Written by: Lalita Calabria, Ph.D. and Dylan Fischer, Ph.D.

Orion's learning in plant ecology was evaluated based on performance on weekly quizzes, exams, labs, a research proposal, and completion of a research project that worked with a dataset collected by the whole class. In weekly quizzes in plant ecology, Orion's performance was generally good. In a final open-book exam with an opportunity for extensive essay responses, Orion's performance was excellent. Our weekly labs provided an opportunity to put theory into practice and contribute to larger class-wide research. In this work, Orion's performance was excellent.

Orion developed a good understanding of the material covered in plant physiology lectures based on open-book weekly quizzes. His final exam score was excellent. Orion completed all required plant physiology labs and participated actively in all quarter-long plant physiology experiments. The quality of Orion's plant anatomy and morphology lab indicated very good observation skills and attention to detail. Orion also completed a series of allelopathy and anti-microbial bioassays focused on *Salvia apiana* with a lab partner. An excellent lab report recapped their findings with figures and graphs including summary statistics, plus a discussion with references to primary literature, placing their results into the context of previous research.

A final research paper and presentation allowed students to work with a quarter-long dataset collected by the whole class. Orion's group worked on a comparison of understory plant leaf traits in a common understory plant species (salal; *Gaultheria shallon*). The group found a pattern where traits differed among sun and shade leaves. The group had clear hypotheses, and they were able to articulate potential issues with site selection for their treatments. They found lower stomatal density in shade environments. Sun environment leaves were smaller, but had higher leaf mass area (LMA), and the carbon to nitrogen ratio in leaves was lower in the sun (implying higher nitrogen in the sun). Interesting trends between stomatal density and specific leaf area were explored. They did a very nice job with graphical analysis of their data, and correctly interpreted how original site selection may have muddied the sun vs. shade treatment. The final presentation was good, and the final paper had a nice reference list and mirrored the presentation.

Orion completed all of the weekly *Writing Science* exercises, and their answers demonstrated an overall excellent comprehension of the elements of effective scientific writing. Orion's group research proposal investigated the potential value of perennial polyculture and biosolids for developing more sustainable agricultural production. They did a great deal of research to define their question and support their proposal. Orion's group took advantage of some faculty and peer feedback on revisions and each of the several drafts documented improvements. As a group member, Orion took a lead role in writing the paper and contributed especially to the study design, objectives, and expected results sections. The final proposal was much improved from early drafts. The final presentation was adequate.

Overall, Orion leaves the program with increased knowledge and skills in plant ecology and physiology, as well as scientific writing and project management.

Suggested Course Equivalencies

Credits Attempted: 16

Credits	Subject
*6	Plant Ecology
*6	Plant Physiology
*4	Scientific Writing
16	Total

* Upper Division Science Credit