



2025 - 2026 FACULTY AND STAFF GRANT PROGRAM APPLICATION

Name of Project/Program: Transformative Research Internships in Biology Date: May 27, 2025

Applicant's Name: Jann E. Vendetti (w/ Shelley Thai)

GCC Position: Adjunct faculty Department: Biology

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Please check which category best describes your project:

- Arts & Culture, Athletics & Fitness, Career & Work Training, College Operations & Facilities, Humanities/Social Sciences, Science & Technology, Other

Amount requested: \$ 10,520

Please attach a one- to two-page typed request that provides a comprehensive summary of your project/program and establishes the need. Please include the following:

- What do you propose to do? Who will be involved in the project/program? What are the benefits of this project/program to the students, college, and the community? How does this project/program support the College's Institutional Strategic Plan? Timeline for the project/program. How do you propose to use the funds requested? Please include specific budget information. Please list any other sources of funding you have applied for and include dollar amounts if already awarded. How will the Foundation's support be recognized? How do you plan to evaluate this project's success? If your project/program is successful, how will it inform your practice moving forward?

Please email this completed and signed form along with your proposal to zjacobs@glendale.edu

Submission Deadline - Thursday, May 29, 2025, by 5:00 PM PST

Signature box containing: 'Your signature indicates approval of this request to the Glendale College Foundation', Applicant's signature (Jann Vendetti), Chair or Department Head Signature (Francisco Gago), and Print name of Chair or Department Head (Dr. F. Javier Gago).

Grant Review Committee comments and/or recommendations:

This grant was denied/approved on _____ The amount awarded is \$ _____

1. What do you propose to do?/ 2. Who will be involved in the project? Dr. Shelley Thai and Dr. Jann Vendetti propose continuing two unique and transformative research courses in Biology at GCC. One is **Biol 50**, a Research Internship in Biological Sciences at the Natural History Museum of Los Angeles County (hereafter ‘Museum’) with adjunct GCC Biology instructor, Dr. Vendetti. The other is GCC’s **Biol 298** – Undergraduate Research in Microbiology and Molecular Biology, with GCC Biology professor, Dr. Thai.* The Glendale College Foundation (hereafter ‘Foundation’) has funded Biol 50 since 2020, enabling remarkable experiences for dozens of GCC students and preparing them for transfer, graduate school, and careers in the natural sciences. Requested funding for Biol 50 would cover DNA extraction, gene sequencing, and conference attendance for interns working on projects in systematics and phylogenetics; Biol 298 funding would enable student conference registration, travel expenses, and poster printing. Foundation funding would continue to allow authentic research and networking experiences in a capacity rarely provided by a community college. The track record of productivity for Biol 50 interns includes a published paper with three student co-authors, thirteen student co-authored abstracts, and five manuscripts currently in preparation with current or former GCC student co-authors. Similarly, for Biol 298, student researchers have published a paper in the *Journal of Bacteriology* (with 22 student co-authors) with their work featured on the journal cover, more than 40 student co-authored abstracts, and presentations at various local and national conferences (e.g., American Society for Microbiology). We are tremendously grateful for previous Foundation funding and would like to enable current and future GCC students to have these enriching and unique experiences. *Dr. Thai was on medical leave during the 2024-2025 academic year, but will be back at GCC teaching the Biol 298 cohort this summer (2025).

3. What are the benefits of this project to the students, college and the community? For students, Biol 50 and Biol 298 provide useful research skills often taught only in graduate programs, *i.e.*, literature review, research methods, research equipment use, experimentation, data analysis, research presentation, and manuscript co-authorship. Students use these formative experiences to build their CVs and rely on Drs. Thai and Vendetti for other internship and job referrals, recommendations, and career advice. For GCC, these courses prepare students for future training and success in biology, build a Biology program that attracts prospective students, and contribute to successful alumni, as many have gone on to attend graduate and professional programs, (e.g., Masters, MD, PA, PhD, etc.). Recently, a Biol 298 alumnus was awarded the prestigious HHMI Summer Undergraduate Research Program grant at UC Berkeley. For the community, the efforts of Biol 50 interns are diverse and wide reaching. GCC Biol 50 interns have created “pop up” exhibits for the Museum’s ‘Haunted Museum’ public program; regularly surveyed the Museum gardens for an invasive insect in collaboration with biologists at UC Riverside; sorted and colleague hundreds of specimens, created Scanning Electron Microscope (SEM) images for collaborators, their own projects, the Museum newsletter, and potential exhibits; collected invasive gastropods at the Huntington Botanical Gardens in collaboration with the California Department of Food and Agriculture; and collected genetic data from introduced/invasive snail species, enabling analysis of their pathway of introduction. Most recently, within the 2024–25 Biol 50 cohorts, interns began collecting genetic data from a collection of understudied desert snails; preliminary analysis indicates a high likelihood of discovering new species to science, which could impact land use and conservation practices in the Mojave and Sonoran deserts. Interns also participated in a “Science of SpongeBob” educational film in partnership with Nickelodeon, and developed a project analyzing genetic diversity in a wide-ranging sea slug species in collaboration with a Chapman University professor. Three interns beginning this Summer and Fall (2025) plan to contribute to the first ever phylogenetic analysis of Banana slugs, an iconic and understudied western North American genus. Students in Biol 298 learn techniques essential for microbiology and biotechnology and undertake rigorous research projects from their inception to data interpretation. Many projects in both courses have the potential to be published and are well-suited for GCC students to present at local, regional, or national meetings such as Glendale’s Annual Research

Symposium, the Southern California Conference for Undergraduate Research, Annual Meeting of the Western Society of Naturalists, and American Society for Microbiology. And for the first time, a Biol 298 student researcher presented his novel findings on the regulation of a series of genes that controls movement in bacteria at the National Conference on Undergraduate Research in Pittsburg, PA. This would not have been possible without the Foundation's support.

4. How does this project support the College's Institutional Strategic Plan? GCC is likely the only community college in the U.S. to have such a close partnership with a large natural history museum (Biol 50) as well as provide certification-quality coursework in biotechnology (Biol 298). Both directly support the Institutional Strategic Plan to "(E.4.) Increase and improve professional development opportunities for...students to develop technology skills and other topics prioritized by the Institutional Master Plan." Within the Master plan, this project meets the goals of "Increasing demand for training in new technologies", and "statewide calls for offering more workforce development and career-oriented programs" (both pg. 28 of GCC Institutional Master Plan 2018–2025).

5. Timeline for the project. Mid-late Summer – Fall of 2025 & Winter – Spring/early Summer of 2026.

6. How do you propose to use the funds requested? Molecular & laboratory supplies essential to research projects; publishing costs; and registration fees, travel and poster printing for students to attend and present their work at research conferences. Funds for 2025: \$5,810: DNA extraction kit with NHMLA discount (250 extractions): **\$900**; 100 DNA extracts sequenced (3 plates): Vendors: (Retrogen, Inc. <https://retrogen.net/>, \$270/plate, Functional Biosci <https://functionalbio.com/pricing> \$360/plate, Europhins, <https://eurofinsgenomics.com/en/products/dna-sequencing/price-list/> \$480/plate, **\$810** (using \$270/plate), Laboratory materials: **\$300**, Research publishing costs: **\$1,000**, Conference registration: **\$1,400** (~18 students), Poster printing: \$90/poster x 10 posters = **\$900**, Travel lodging (hotel): 2 rooms, one for each gender; **\$500** (non-local conferences). Funds for 2026: \$4,710: DNA extraction kit with NHMLA discount (250 extractions): **\$900**; 100 DNA extracts sequenced (3 plates, \$270/plate): Retrogen, Inc. **\$810**; Laboratory materials: **\$300**, Research publishing costs: **\$1,000**, Conference registration fee: **\$750** (6–10 students), Poster printing: \$90/poster x 5 = **\$450**, Travel lodging(hotel): 2 rooms, **\$500** (non-local conferences). Total requested: (2025) **\$5,810** + (2026) **\$4,710** = **\$10,520**

7. Other sources of funding you applied for. None.

8. How will the Foundation's support be recognized? The Foundation has been and will be named in all acknowledgements of published research papers, posters, and oral presentations. For example, in the presentation at the GCC Student Symposium in May 2024 and in other symposia, GCC interns included a slide that read, "Special thanks to the Glendale College Foundation, who funded this study".

9. How do you plan to evaluate this project's success? Success will be evaluated by the outcomes of research projects as well as student engagement. The goal for Biol 50 and Biol 298 researchers is to have a research abstract accepted and presented at a scientific conference during or up to two semesters after their research experience. Given that all students will contribute to research projects, the long-term goal is for 90% of interns and research students to be co-authors on abstracts and scientific publications that are the products of their work and for 75% or more to continue research of some kind when they transfer.

10. If your project is successful, how will it inform your practice moving forward? Success in these courses will inform our continued mentorship and support of GCC students and enable us to each continually hone an effective, creative, and adaptable mentorship style.