

Jastro & Shields Graduate Award Application – Graduate Group in Ecology

Student name: Katherine Lauck

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Degree sought (M.S. or Ph.D.): PhD

Major professor and their home department and college (your major professor's home department must be in the College of Agricultural and Environmental Sciences): Daniel Karp; WFCB in CAES

Year of entry into the GGE: 2019

Have you advanced to candidacy? If so, when? Yes, 2/1/2022

Cumulative grade point average (must be 3.30 or greater): 4.0

Have you previously received a Jastro & Shields Award? If yes, for which academic years, and for what amount per year? (individuals may not receive more than \$18,000 in Jastro & Shields awards during their tenure at UC Davis): Yes - 2020-21: \$3854 research, 21-22: \$6000 research, \$3000 support

If you previously received a Jastro & Shields Award, have all funds from that award been expended? If not, what is your balance? Yes

Abstract. Provide an extended abstract of your thesis or dissertation research. Include a title; introduction; methods; description of anticipated scientific advances; description of applicability to management, education, or other practical purposes (if relevant); and literature cited. The abstract should address the scientific novelty and rigor of the research. The abstract, not including literature cited, may not exceed 500 words. Use 12-point font and 1” margins, number your pages, and double-space the abstract.

Attached

Applicability to California. Provide a statement of 100 words or fewer that explains whether your research is conducted in California or, if not, how it is applicable to California. Per CAES rules, this relevance is a requirement for receipt of Jastro & Shields awards.

This study will be conducted in and near Putah Creek, Davis, CA. In this ecosystem, warm temperatures during nesting are associated with lower nestling growth (and survival in some species).¹ Furthermore, conversion of natural land cover to agriculture may exacerbate these effects.² Native species in the Central Valley and other agricultural areas of CA may be especially vulnerable to population decline as climate change-driven warming progresses. This project will explore the mechanisms driving reduced nestling growth and survival in temperature spikes so that managers can modify working landscapes to better accommodate cavity-nesting birds.

Literature Cited

1 Riggio *et al.* in prep.

2 Lauck et al in prep.

Contribution of the requested research funds to the thesis or dissertation. Provide a statement of 100 words or fewer than explains how the Jastro & Shields funds will advance the scientific objectives of your thesis or dissertation.

My dissertation explores the mechanisms driving community and population change under climate change and land use change. The first chapter uses existing data from a network of sites in Costa Rica to model the consequences of forest cover, precipitation, and drought for survival and colonization rates of bird species. The second uses Cornell’s NestWatch dataset to demonstrate that negative consequences of temperature spikes on nestlings are exacerbated by agriculture and urban land uses. This proposed project extends the second chapter by exploring the mechanisms that underpin its results and is likely to be my only experimental or field-based chapter.

Statement from major professor. Attach a signed statement from your major professor indicating that they support your application and will assist with budget administration and management as needed. This is a simple statement only, not a letter of recommendation.

Attached

BUDGET

In 2022, CAES specified that support funds (\$1000–3000 per student), which may be used for stipends, tuition, and fees, only can be awarded after research funds (\$1000–3000 per student) have been awarded to eligible students. Given the GGE’s Jastro budget and the number of students who usually apply for Jastro awards, it is highly unlikely that the GGE will be able to award support funds. You may apply for support funds, but please be aware of these constraints.

Research budget. Per CAES rules, research funds must be used for purposes vital to the success of the student’s research. This budget may not be less than \$1000 or exceed \$3000. Research awards shall be administered as an account by the student’s home department. GGE approval shall be required for among-category transfers that exceed 10% of the budgeted amount.

Research Budget Category	Amount (total must be \$1000–3000)
Wages	\$3000
Purpose of wages (e.g., for undergraduate or other research assistants)	Partial funding for 2 undergraduate research assistants during field season 2022: 15 weeks (Early April-mid-July) * 20 hours/week, paid at the UC Davis rate of \$15/hour, plus benefits of 2.1% * 2 people = \$9189
Travel	
Purpose of travel (e.g., field research, registration for a professional conference at which research will be presented). If multiple purposes, explain each.	
Estimated travel expenses, itemized (e.g., airfare, mileage, lodging)	
Materials and supplies. Please itemize in general categories (e.g., GPS units, reagents). Per CAES rules, computers must be returned to the university upon graduation.	
Other. Explain and itemize.	

Total (must be \$1000–3000)	\$3000

Including but not limited to Jastro funds, what is the total cost of your thesis or dissertation research?

\$38,718: this includes 80 temperature loggers, 16 humidity and temperature loggers, 24 cameras, salary for 2 field assistants in summer 2022 and summer 2023, physiology reagents for 1,160 samples, 90 nest boxes and poles, and transportation for three field seasons.

Other secured sources of research support (e.g., major professor's grant funds, other extramural grants and contracts). Per CAES rules, if the student's thesis or dissertation research costs more than \$3000, the graduate group must be assured that other sources of support are or will be available.

Source	Amount
Horodas	\$5000
Selma Herr	\$11,000
Daniel Karp's startup fund	\$6200
Jastro 2020 & 2021	\$9854
Museum of Fish and Wildlife Biology volunteer donation	\$2100
Total	\$34154

Support budget. Per CAES rules, the support budget may not be less than \$1000 or exceed \$3000. Jastro & Shields awards do not support non-resident tuition and fees. Funds awarded for tuition and fees are paid directly by the GGE. Stipends are disbursed to students, are taxable income, and may affect financial aid awards.

Support Budget Category	Amount (total must be \$1000–3000)
Tuition and fees	
Stipend	\$3000
Total (must be \$1000–3000)	\$3000