

2021 Wild Felid Legacy Scholarship Recipients

This year WFA received 12 scholarship applications. The WFA Council is pleased to announce Mariam Weston Flores, Natalie Payne, and Guilherme Costa Alvarenga as this year's recipients. Mariam will receive the \$1500 scholarship that specifically honors Deanna Dawn, and Natalie and Guilherme will each receive \$1250. As has been the case every year, the committee struggled with their decisions – each candidate was highly qualified and deserving. WFA was able to provide this year's scholarships because of a generous support from two anonymous donors and “Evergreen” donations from 3 WFA members. We thank all the applicants for their drive to understand, conserve and coexist with wild cats. We have provided information on the scholarship recipients' projects below.

Mariam Weston Flores, MPhil candidate, University of Cambridge, England; mariamweston@gmail.com



Advisor: Lisa Harris h382@cam.ac.uk

Thesis: The lesser five; understanding and mitigating threats to small Mexican wildcats in Mexico through sustainable solutions and environmental education.

Objectives: understanding and mitigating threats to small Mexican wild cats through sustainable solutions, environmental education and community-based conservation.

Mariam writes: “...even though wild cats in Mexico have a deep influence on ecosystem wellness and a big cultural legacy ... the public is more familiar and feels a closer bond to African cats ..than to the native cats. This ...reflects on a lack of conservation and outreach initiatives for the other 5 cat species that inhabit Mexico apart of the Jaguar. This is why ...I started working ... at a Mexican conservation

NGO [Animal Karma] ... , where I developed and supervise a variety of projects focused on small Mexican small cats and jaguar conservation....Ten years from now, I see myself designing sustainable development and environmental education projects focused on benefiting vulnerable communities and small wild cat species, in order to promote a healthy co-existence with these predators but also improve social well-being and support economic growth. ...In the long run, I would like to integrate rewilding strategies into these community-led projects to secure the restoration of vulnerable ecosystems and ensure the permanence of their services to both people and wildlife. Rodrigo Berengueras, Founder and General Director at Animal Karma writes: “Mariam’s interest in wildlife and specially wild cat conservation is unique, she is passionate about it and her conservation actions through her work as a Project Director are remarkable. She is not only interested in conservation, but also in helping people by creating profitable and socially responsible conservation initiatives, fighting laws and governmental initiatives that do not support this idea, and communicating and informing people of what is going on in endangered ecosystems.”

Completion date: September 2022.

Natalie Payne, PhD candidate, University of Arizona, Tucson; nataliermercercer@email.arizona.edu

Advisor: Melanie Culver, culver@ag.arizona.edu



Co-advisor: Koenraad Van Doorslaer, vandoorslaer@email.arizona.edu

Dissertation: “Population genomics and viromics of at-risk felids and ungulates”

Objectives: 1. Characterize fecal virome composition and diversity within populations of Sonoran Desert felids (bobcat, puma, ocelot, and jaguar) and Sonoran pronghorn using viral metagenomic analyses of scat samples from Arizona, USA, and Sonora, MX.

Additionally, we will characterize viromes of Florida panthers and bobcats to identify potential etiologic agents of feline leukomyelopathy (FLM). 2. Assess host population structure, connectivity, and gene flow to investigate routes of viral transmission, and genetic diversity to infer susceptibility of populations to disease-related reductions in population size.

Natalie writes: “Along with interests in using genomics to resolve taxonomy and demographic history, my primary research interests in wild felid conservation include studying population connectivity and structure across fragmented habitats and in integration with indicators of population health such as comparative viromics. Home to four species of felids, two of which are endangered, and under threat due to climate change and habitat fragmentation, the Sonoran Desert provides both the perfect opportunity and the necessity to do just that.... I intend to positively impact both society and the natural world through a prolific

career in research. As a conservation geneticist, I will conduct research that will directly inform management practices that could be imperative for prevention of extinction. Proper management of threatened wildlife, including felids, is of the utmost importance as the world navigates the Sixth Mass Extinction, and as a researcher I will strive to help prevent dwindling populations from slipping into oblivion. I aim to dedicate much of my career to felid conservation genetic and genomic research specifically, including clarifying taxonomy and identifying threatened populations and possible threats, such as viral diseases or barriers to gene flow.”

Completion date: Projected August 2024

Guilherme Costa Alvarenga, PhD candidate, University of Oxford, gcalvarenga.bio@gmail.com;



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Major advisor: Dr. Alexandra Zimmermann;

alexandra.zimmermann@zoo.ox.ac.uk

Dissertation: A multi-scale modelling approach to range-wide analysis of jaguar (*Panthera onca*) population connectivity.

Research goal: to develop the first landscape ecological modeled assessment of jaguar population connectivity across the species' entire geographical range.

Objectives: to develop (1) multi-scale regional models of habitat use by male and female jaguar across their range using multi-scale machine learning approaches with the random forest algorithm; (2) use the results to model and quantify jaguar population connectivity across their range taking into account gender differences; (3) evaluate the impact of potential future land use changes on jaguar population size, habitat extent, connectivity and genetic diversity; and (4) model human-carnivore conflict between jaguars and local communities in the key areas identified by the connectivity model, using multi-scale spatial predictive modeling and spatial incidence function contract risk modeling.

Guilherme writes: “I expect my PhD outcomes to drive field-based conservation actions, and I aim to participate actively in these actions. For instance, combining the jaguar connectivity model ...and the predictions of potential future sceneries in land-use change...will allow the identification of the most threatened regions, where governmental agencies and international organizations should focus their field-based conservation strategies... I also intend to direct my efforts to the most impacted regions predicted in my models, especially those in Brazil. I believe it is essential to include traditional people in decision-making processes, bringing empowerment and responsibility to them. Therefore, I aim to keep working in community-based projects, combining scientific and traditional knowledge leading to human-carnivore coexistence. My long-term career goal is to become a respected professor and researcher in my country, mentoring and inspiring students who will base next-generation actions for wildlife conservation.”

Completion date: 10th October 2025