

Q&A with SESYNC Postdoc Lauren White

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Name: Lauren White

Ph.D.: Ecology, Evolution & Behavior from the University of Minnesota

Hometown: Leesburg, Virginia

SESYNC Project:

Integrating host movement, genomic, and spatial data to understand the effects of human-altered landscapes on pathogen spread

How would you describe your primary field of study?

Disease ecology

What are the broad questions you are interested in studying?

I am interested One Health- the intersection of human, animal, and environmental health- and its implications for the spread of disease. The goal of my research so far has been to characterize how three different types of heterogeneity can alter individual infectiousness in wildlife: (1) host heterogeneity: variation in host behavior and susceptibility, (2) contact heterogeneity: sociality that affects community structure within populations, and (3) spatial heterogeneity: patchiness in resource and host density across a landscape.

What inspired you to choose this field of study?

Both of my parents are veterinarians, so I grew up surrounded by animals. While I've always loved math and science, I spent my summer after college doing fieldwork with prairie dogs and plague, which cemented my interest in disease ecology. I'm always amazed by the insights that even simple mathematical models can provide.

Can you briefly describe your proposed SESYNC postdoctoral project?

During my time at SESYNC, I will be investigating how landscape structure and management interventions interact to influence disease spread across human-influenced landscape. Using pre-existing host movement, and host and pathogen genomic data of puma (*Puma concolor*) from three geographic regions, I will use mathematical models to explore how landscape structure affects host movement and contact patterns, and in turn, assess how future outbreaks may spread in these populations. The results of this novel integration of movement and genomic data will have broader implications for understanding the consequences of human-mediated environmental changes and direct management interventions on the survival and conservation of threatened species worldwide.

Why is SESYNC the right place to undertake this research?

SESYNC offers all the support, colleagues, and framework for truly interdisciplinary research, which this project is.

What are you reading right now?

I really enjoy fiction. I just finished reading *The Secret History of the Pink Carnation* by Lauren Willig. Currently, I am working on *Lily and the Octopus* by Steven Rowley and *Daughter of Fortune* by Isabel Allende.

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