DEPARTMENT OF BIOLOGY | UNIVERSITY of WASHINGTON

Biology Seminar

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Collective computation across scales of biological organization

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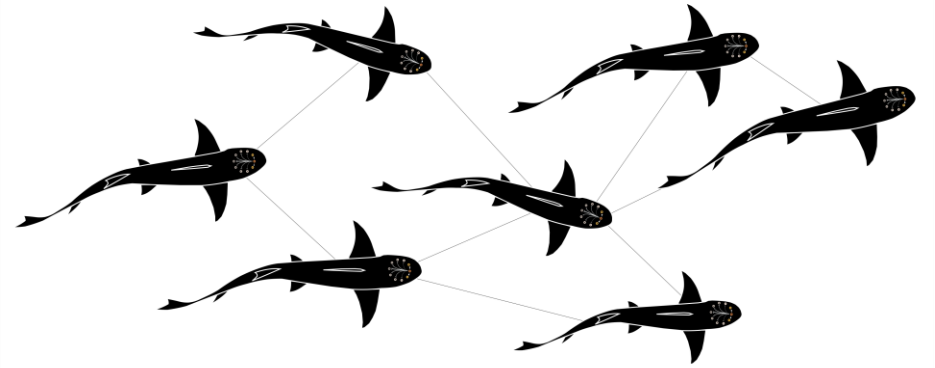

My research explores the dynamic and multiscale nature of animal behavior, integrating insights across scales of biological organization. In today's seminar, I will discuss two key directions of my work.

Firstly, I will present past findings about how the brain makes decisions when faced with spatial choices. I will highlight the evolutionary universality of this algorithm and discuss the consequences this has for our understanding of movement and social influence in animal collectives. I will emphasize why explicit consideration of space is important for decision-making processes and extend these insights to ecologically and evolutionarily relevant contexts, specifically to the study of mate-choice on antelope leks.

Secondly, I will delve into a new research direction focusing on animal search behaviors, using prey search in octopus-fish hunting groups as a prime example. Contrary to traditional views, my field-based analysis reveals mutual benefits in these mixed-species relationships, with different species contributing to group movement decisions in distinct ways. By leveraging natural variations in group composition, I demonstrate measurable improvements in octopus foraging success within these mixed-species hunting groups.

Overall, my research underscores the importance of integrating insights across biological scales for a comprehensive understanding of animal behavior and its ecological implications.

Seminar Speaker Host: Carl Bergstrom