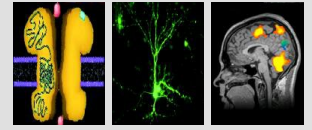


IGSN / SFB 1280 / BIOME
CONFERENCE**EXTINCTION LEARNING**

April, 23rd – 24th 2024

Session 2 **Comparative hippocampal memory formation****HANNAH PAYNE**

Mortimer B. Zuckerman Mind Brain Behavior Institute, Columbia University, New York, USA

Neural codes for physical and visual navigation in the hippocampus of food caching birds

Food-caching birds have the impressive ability to store thousands of food items across their environment and to later retrieve them using hippocampus-dependent memory. Like primates, food-caching birds also depend heavily on vision to navigate. I will first describe our discovery of spatial representations in the avian hippocampus, suggesting a remarkable similarity in hippocampal circuit function between birds and mammals despite 300 million years of independent evolution. These spatial codes were enhanced in food-caching birds compared to a species that does not cache food, indicating that the extent of place coding can vary according to ethological demands. More recently, I have developed a system to estimate gaze in freely moving birds, allowing us to behaviourally dissociate physical location from viewed location. I will present results using this system, which suggest that the hippocampus dynamically coordinates representations of physical and viewed locations in animals that actively use vision to navigate.

