

Research on neural dynamics wins 2022 Eppendorf & Science Prize

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Ann Kennedy is the 21st recipient of this international prize which is awarded jointly by Eppendorf and the journal Science

The American scientist Ann Kennedy, Ph.D., Assistant Professor at Northwestern University, Chicago, USA has won the 2022 Eppendorf & Science Prize for Neurobiology for her work on the neural population dynamics that generate and maintain our emotions and behavioral drives.

By comparing the activation of neurons in multiple deep brain regions, she identifies differences between them that point to the role each region plays in shaping the drives behind survival behaviors such as fighting or fleeing.

Kennedy collaborates with experimentalist researchers to characterize the activity of hypothalamic neurons implicated in the control of essential survival behaviors such as aggression, fear and reproduction. While neurons in some hypothalamic nuclei have clear responses to specific behaviors, other regions show only a weak correlation with an animal's actions.

Kennedy showed how the complex responses of individual neurons give rise at the population level to a graded signal that persists over time and escalates in intensity with an animal's level of aggression. She also demonstrated the role of this persistent activity in helping to keep animals on their guard following exposure to a predator threat. This work helps us understand how our emotional states arise from the activity of groups of neurons and how they influence our actions.

The winner is awarded \$25,000 and has her essay published in Science. The next deadline for applications is June 15, 2023.