A postdoctoral position is available at the Department of Anatomy of the Institute of Biomedical Sciences (ICB) / University of São Paulo (USP). As part of our research project funded by the São Paulo State Research Support Foundation (FAPESP), the objective is to investigate the neural bases of risk assessment (AR), a central component of the defensive response pattern to the threat or the danger, especially prominent when the source of the threat or the situation is ambiguous. Our results revealed that exposure to the snake induced an exuberant expression of Fos in the region of the Edinger-Westphal (EW) nucleus, particularly located in the central projection part of the EW (EWcp). Importantly, EWcp is one of the main sites that express urocortin 1 (Ucn1) and the transcript regulated by cocaine and amphetamine (CART). It was found that EWcp is involved in controlling the stress response and food intake, in addition to regulating alcohol consumption and facilitating nociception. In the present case, it would be important to understand how EWcp influences behavioral and stress responses in the context of snake exposure. To that end, we will carry out a neural pathway tracking study to examine the efferent projections of the EWcp. To address EWcp neurons, we will use transgenic mice that express CRE recombinase in CART neurons and apply the flox sequence expressed in adeno-associated virus to mark with EYFP the projection fibers of specific EWcp neurons. Next, we will carry out functional studies of EWcp in the context of snake exposure, where we will investigate with experiments the loss of EWcp function using inactivation with a pharmacogenetic method that uses the combination of the hM4D receptor and its selective clozapine-N-oxide (CNO) ligand.

Candidate skills
For this project, the candidate must have good experience in neural track tracing and behavioral analysis, along with an interest in strengthening the validation of animal models for human behavior and psychopathology. Applicants must send a short CV and a letter of interest explaining the motivation and previous experience to carry out the project, please contact Prof. D. Caroline Blanchard (email: dcb@hawaii.edu).