Hanne M. Hoffmann

Assistant Professor of Animal Science; Expert in Neuroendocrinology at Michigan State University

East Lansing, MI, US

Dr. Hoffmann?s research program is focused on how light changes your well being, motivation, fertility and pregnancy success.

Biography

Dr. Hoffmann?s research program is focused on understanding the molecular pathways and brain circuitry regulating function of the hypothalamus and the suprachiasmatic nucleus (SCN), the major pacemaker of the body, and how their impaired function affects hormone release, behavior and reproductive competence. Uncoordinated hormone release, as seen in shift workers and people sitting in front of bright screens late into the night, is a growing health concern and affects more than 20% of the US population. Not only do impaired circadian rhythms increase the risk of endocrine disorders such as diabetes, obesity, and cardiovascular disease, but they also affect mental health and lead to infertility and preterm labor. To further our understanding of the importance of circadian rhythms in endocrine-related disorders, Dr. Hoffmann has developed novel mouse models allowing her to understand the central and peripheral control reproductive function. The major goal of Dr. Hoffmann?s research is to understand how abnormal SCN function leads to desynchronization of hormone release and how this relates to cellular function, for example through receptor expression and localization. Her long-term goal is to identify novel drug targets for the treatment of arrhythmia, infertility and preterm labor. Dr. Hoffmann?s current projects use numerous molecular biology approaches, including novel transgenic mouse models, reporter mice (Per2::luciferase, TdTomato, etc), and recordings from live cells and tissues, in combination with behavioral studies.

Areas of Expertise

Light Contamination, Impact of Light on Physiology, Development, Molecular Biology, Preterm Labor, Reproduction, Neuro-endocrinology, Circadian Rhythms, Shift-work

Affiliations

Society for Neuroscience (SFN), The Endocrinology Society (ENDO), Society for Behavioral Neuroendocrinology (SBN), Society for Research on Biological Rhythms (SRBR), Scholars Strategic Network, Michigan Chapter, Start School Later : Ingham County Chapter Leader

Event Appearances

Unexpected Impact of light-shift directionality on female reproductive function
American Physiology Summit

Circadian timing in pregnancy
Symposium, Preterm Birth International Collaborative (PREBIC) and Parturition/Myometrium Group

Dual receptor targeting as a novel strategy to improve labor- regulating drug efficacy
The American Society for Reproductive Immunology

The Role of Circadian Clocks in Reproduction
Symposium: Advances in Understanding the GnRH Pulse Generator

Circadian and neuroendocrine control of reproduction
Society for Behavioral Neuroendocrinology

Education

Montpellier University 2
Ph.D. Neurobiology

Autonomous University of Barcelona
Ph.D. Neuroscience

Montpellier University 2
M.S. Biology and Health

Montpellier University 2
B.S. Animal Physiology

Accomplishments

Biology of Reproduction Most Popular Research Article Award
2022 - 2021

March of Dimes Basil O'Connor Starter Scholar Research Award
2019

Early Career Forum Travel award
2014 Awarded for ICE/ENDO 2014 in Chicago, IL (Women in Endocrinology)

Endocrine Society Outstanding Abstract Award
2015

Neena Schwartz Young Investigator Award in Basic Science
2016

Early Investigators Award
2016 Supported by Merck & Co., Inc. (Endocrine Society)

New Investigator Award
2017
