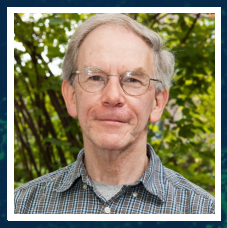
The Secrets in the Songbird



Eliot Brenowitz

Professor, Biology and PsychologyAffiliate, Institute for Stem Cells and Regenerative MedicineAffiliate, Center for Human Development and Disability

CURRENT RESEARCH

Understanding neuronal regeneration of songbirds to shed light on repairing brain from damage

Songbirds who sing and humans who speak have a lot in common. One of the most notable similarities is that just like human babies who gradually learn how to talk, the songbirds also learn to sing; their song is not an innate but a learned behavior. The molecules and cellular processes that regulate plasticity -- or adaptability to changes -- in the bird brain, and the hormones that drive these changes, are very similar to those observed in mammalian brains, including humans. Dr. Eliot Brenowitz, Professor of Biology and Psychology at the University of Washington, studies songbirds as a model for understanding fundamental cellular and molecular mechanisms underlying human brain plasticity. By researching the occurrence of extreme plasticity in a well-defined neural circuit found in the songbird brain, Dr. Brenowitz hopes to unravel basic biological processes that can help us identify paths for treating human brain injury and disease.

In a scientific world that is reliant upon rodent and fly models, Dr. Brenowitz leaps outside of the box to focus on specialist species like white-crowned sparrows to understand how the brain regulates behavior and how we can tap into the brain's capacity for plasticity to repair brain damage. Song learning in songbirds is controlled by a discrete network of connected brain regions, and song is produced only or most frequently during the breeding season when the number of neurons proliferates, and deteriorates at the end of the season. Dr. Brenowitz and his team have found that when mature neurons die, they release chemical signals that stimulate the birth of new neurons that will regenerate the neural network in the next breeding season; identifying these signals will help...

Read More at benefunder.com/

AFFILIATION

University of Washington

EDUCATION

- B.A. in Biology 1975, Swarthmore College
- Ph.D. in Neurobiology & Behavior 1982,Cornell University
- Postdoctoral in Laboratory of Neuroendocrinology 1985, University of California, Los Angeles

AWARDS

- Fellow of American Association for the Advancement of Science, 2009
- Fellow of Association for Psychological Science, 2009
- Invited keynote lecture at meeting of Dutch National Cognition Program, 2004
- Research Scientist Development Award, NIMH, 2003-2008
- Virginia Merrill Bloedel Hearing Research Scholar, 2002

RESEARCH AREAS

Life Science, Neurological / Cognitive, Regenerative Medicine, Veteran's Causes

FUNDING REQUEST

Your contributions will support Dr. Eliot Brenowitz as he uses naturally occurring plasticity in the brains of songbirds as a model for addressing fundamental molecular and cellular mechanisms of repairing neuronal damage. Donations will help fund the $500K/year required for personnel, supplies, wild bird maintenance, and computer analysis of large data sets. Donors will not only partake in advancing potential solutions for neuronal diseases, but are also invited to go bird watching with the team!