

When Neurons Connect: the Developing Brain



Kimberley McAllister
Professor & Associate Director, Center for Neuroscience

CURRENT RESEARCH

Understanding the brain's connections to advance therapeutics

Psychiatric disorders affect 15-20% of our population and account for the largest proportion of disability of any disease, including cancer and heart disease. Remarkably, there have been no successful new classes of drugs developed to treat mental illness in over 50 years! In order to get to the root of these disorders, scientists must understand how connections are altered in the brain and whether there are shared changes in the molecular composition and signaling at synapses in each disorder. Dr. Kimberley McAllister, Professor and Associate Director of the Center for Neuroscience at the University of California, Davis, studies the cellular and molecular mechanisms that regulate neuronal growth and the establishment of connections in the developing brain. Her basic research has the potential for long-lasting impacts on society in leading to significant advancements in knowledge, novel diagnostics, and life-altering therapies.

Dr. McAllister's research is twofold: her projects study how connections are made in the developing brain that lead to function or dysfunction and she examines the relationship between the immune and nervous systems. Her team has developed novel assays that can be used, for the first time, to identify molecular signatures of synapses of known strength which will help improve therapeutics related to memory loss and forgetting or as biomarkers for nootropics. In addition, her team is identifying immune molecules whose expression and signaling are altered in the brain in psychiatric disorders in order to develop an entirely new class of drugs and diagnostic tools. As one of the only labs in the world studying the molecular mechanisms underlying the role of immune molecules in brain...

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AFFILIATION



University of California, Davis

EDUCATION

- Ph.D., in Neurobiology, 1996 , Duke University
- Postdoctoral Fellowship, 1996 - 1999 , Salk Institute

AWARDS

- Pew Scholars Award
- Merck Scholars Award
- Sloan Fellowship
- Basil O'Connor Starter Scholar Award
- Society for Neuroscience Young Investigator Award

RESEARCH AREAS

Life Science, Immunology / Inflammatory, Infectious, Neurological / Cognitive

FUNDING REQUEST

Your contributions will support Dr. McAllister's team as they reveal new rules for regulating brain development and identify new classes of molecules for developing novel therapeutics for psychiatric disorders. Donations will allow her laboratory to increase the pace of discovering critical immune molecules in the brain and move those exciting new discoveries into preclinical models. Join Dr. McAllister in taking basic science discoveries in the brain and converting them into new diagnostic tools and therapies!