Unlocking the Mysteries of the Brain

Elva Diaz
Associate Professor, Pharmacology

CURRENT RESEARCH

Taking a ground-breaking approach to uncovering cures for brain diseases

Scientists have a good understanding of how most of the human body systems work but the brain is still very much of a "black box." It's used every second, yet scientists know just a tiny fraction of how it works. The brain truly represents the final frontier in academic research.

Dr. Elva Diaz of the University of California, Davis studies highly conserved genes not previously implicated in brain development and genes encoding hypothetical proteins of unknown function with state-of-the-art expression profiling approaches. She posits that such "functional comparative genomic" approaches are particularly well suited for the discovery of novel molecules involved in key aspects of brain development. However, few, if any, investigators actually pursue the characterization of these hypothetical molecules identified in such screens, because, being unannotated, nothing is known about them. Ironically, this type of study represents a huge untapped potential-a large fraction of the genes in our genome are unannotated and scientists have no idea what these molecules do. In many cases these molecules contribute to diseases and by studying these novel molecules, Dr. Diaz uncovers a better knowledge of how they affect the brain.

Dr. Diaz has cultivated multidisciplinary collaborations with biomedical engineers, cancer biologists, chemists, electrophysiologists, pediatricians, structural and computer modelers, and proteomic researchers to tackle problems that are not generally considered by the brain development field. This interdisciplinary approach yields valuable information that is not otherwise possible to obtain through traditional techniques.

- Dr. Diaz initially applied a...

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AFFILIATION

University of California, Davis

EDUCATION

- Postdoc, in Molecular and Cell Biology, 2003 , University of California, Berkeley
- Ph.D., in Biochemistry, 1999
- B.A., in Biochemical Sciences, 1993 , Harvard University

AWARDS

- Helen Hay Whitney Fellowship, 1999
- Alfred P. Sloan Research Fellowship, 2004
- NIH Director's New Innovator Award, 2014
- Principal Investigator, UC Davis Academic Senate, 2013-2014
- Principal Investigator, Hartwell Foundation, 2012-2015
- and 1 more...

RESEARCH AREAS

Life Science, Neurological / Cognitive, Proteomics, Neurological / Cognitive

FUNDING REQUEST

Dr. Diaz's lab's two main discoveries have already resulted in peer-reviewed publications in a simultaneous five-year time period. These basic science discoveries are being translated to the clinic and should yield measurable milestones within an additional five-year time frame. Her awarded NIH Director's New Innovator Award funding just ended and is non-renewable. So your donations will significantly impact her research, and help lead to cures for devastating brain diseases!