Title
Krieg Cortical Kudos 2002

Permalink
https://escholarship.org/uc/item/9hm9h10r

Journal
Cerebral Cortex, 13(2)

ISSN
1047-3211

Author
Ribak, Charles E

Publication Date
2003-02-01

DOI
10.1093/cercor/13.2.215

Peer reviewed

In these latter studies, she showed that estrogen induced an increase in axospinous synapse density in young animals but the number of NR1 subunits per synapse remained unchanged in these rats. She also showed that estrogen replacement in aged female rats failed to increase axospinous synapse density. However, this estrogen treatment in aged rats caused an up-regulation of NR1 subunits per synapse compared with aged rats with no estrogen. She concluded that the hippocampus from young and aged rats display different reactions to estrogen. Thus, the aged animals were unable to mount a plasticity response that could generate additional synapses while they were able to respond with increases in NMDA receptor subunits per synapse.

It needs to be noted that Michelle Adams has won other awards. She was a recipient of a James S. McDowell Fellowship in Cognitive Neuroscience in 1997 and a Graduate School Service Award from the Mount Sinai School of Biological Sciences in 2001. She also has participated in annual meetings of the Society for Neuroscience and has presented seminars at universities both in the United States and Europe. It is clear that Michelle has a promising career in neuroscience.

The Cortical Scholar Award

The Cortical Scholar prize ($1000) is awarded to a predoctoral fellow who is at the endstage of completing their doctoral dissertation or within one year of obtaining their degree. This year's cortical scholar award was presented to **Michelle M. Adams** for her doctoral studies involving the hippocampus and issues of plasticity in response to estrogen status and aging. These studies have profound implications for estrogen replacement in post-menopausal women and our understanding of changes in plasticity of the aging brain. Her talk was entitled, 'The Aging Synapse: Preservation of and Alterations in Synaptic Proteins'.

Michelle earned a bachelor of arts degree in psychology from the University of California at Davis in 1990. She then spent about six years in the Laboratory of Psychology and Psycho-pathology and the Laboratory of Neuropsychology at the National Institutes of Health in Bethesda, Maryland. She worked with Dr Leslie Ungerleider, a former Krieg Cortical Kudos Discoverer Awardee, where she analyzed the monkey visual system with neuroanatomical and behavioral methods. In 1996, she decided to pursue graduate studies at Mount Sinai School of Medicine under the direction of Dr John Morrison (President-elect of the Cajal Club, 2000–2002). She completed her degree in 2001 and has started a postdoctoral fellowship with Dr Mark Bear at Brown University in Rhode Island.

Michelle's thesis advisor, Dr Morrison, wrote that her thesis took a 'broad, multidisciplinary approach to a critically important set of questions' and that her 'productivity has been remarkable'. Michelle has five first-authored papers and one second-authored paper from her thesis work. This work involved N-methyl-D-aspartate (NMDA) receptor regulation by endocrine factors across puberty and senescence. Her findings offer compelling and conclusive evidence that NMDA receptors in the hippocampus are more responsive to chronological age than they are to endocrine status. This observation is a surprising and important result with respect to the controversy surrounding estrogen/NMDA receptor interactions in the context of memory changes associated with menopause. In another study, Michelle found that NMDA receptor levels in one particular circuit in the hippocampus correlate with memory performance regardless of the age of the animal. In addition, Michelle has studied the electron microscopic localization of NMDA receptors at spines.