

## ***INDUSTRY RESEARCH APPLICANT (Biology)***

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### ***EDUCATION***

Stanford University, Department of Biological Sciences, Palo Alto, CA  
Ph.D. Biological Sciences Major Area: Neurobiology 2006

Cold Spring Harbor Laboratory, Cold Spring Harbor, NY  
Summer Coursework: Imaging the Nervous System and Human Molecular Neurobiology,  
Summer 1998, 2001

Haverford College, Haverford, PA  
B.A. Biology 1998

### ***HONORS AND AFFILIATIONS***

National Science Foundation Pre-doctoral Fellowship (2004-2006), Society for Neuroscience member (2001-present), International Brain Research Organization member (2005-2006)

### ***TECHNICAL EXPERTISE***

Extracellular recording from brain slices, including use of ion-selective microelectrodes; whole-cell patch clamp recording in isolated neurons and brain tissue slices, confocal fluorescence imaging in neuronal cells, primary neuronal and glial cell culture, in vivo models of cerebral ischemia in both rats and gerbils, cerebral microdialysis and HPLC amino-acid analysis, recombinant DNA, RNA, and protein analysis.

### ***RESEARCH EXPERIENCE***

Stanford University, Department of Biological Sciences, Palo Alto, CA  
Graduate Fellow, 2001-2006

Examined effects of pH on hypoxic neuronal injury and spreading depression in rodent hippocampal slices; monitored field potentials and extracellular shifts in selected ions during hypotaxia. Studied changes in evoked responses in post-ischemic gerbil hippocampal slices maintained in vitro using a carotid occlusion model of ischemia. Characterized effects of pH on voltage-gated ion currents in acutely dissociated hippocampal neurons. Combined whole-cell recordings in isolated hippocampal neurons/ tissue slices with confocal fluorescence imaging of intracellular pH. Laboratory of Nel Weigand.

Monsanto Company, Molecular Genetics Division, St. Louis, MO  
Research Biologist, 1998-2001

Studied structure-function relationships of human tissue plasminogen activator (tPA). Used site-directed mutagenesis to generate cDNA variants. Expressed recombinant tPAs in cultured mammalian cells and performed in vitro and in vivo assays to detect modified enzyme activity or half-life.

## **PUBLICATIONS**

### **Articles:**

Applicant, R., Weigand, N. (2002) Corticosterone accelerates hypoxia- and cyanide-induced ATP loss in cultured hippocampal astrocytes. *Brain Research*, 482:153-158.

Applicant, R., Hong, S., Anderson, R., and Weigand, N. (2004) Corticosterone exacerbates hypoxic and hypoglycemic hippocampal injury in vitro: biochemical correlates and a role for astrocytes. *Journal of Neurochemistry*, 48:139-148.

Campbell, C. Jr., Wainwright, T., Packard, D., Applicant, R., Naylor, M., Weigand, N. (2003) Glucocorticoids inhibit glucose transport and glutamate uptake in hippocampal astrocytes: implications for glucocorticoid neurotoxicity. *Journal of Neurochemistry*, 42: 1322-1327.

### **BookChapter:**

Weigand, N., Holsti, R., Puckett D., Candidate R. (2002) Stress and glucocorticoids in aging, in Seimer, L., ed., *Endocrinology and Metabolism Clinics of North America: Endocrinology and Aging*. Saunders, Philadelphia, pp. 304-320.