John P. O'Reilly, PhD
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EDUCATION

1997 **Ph.D.,** Neurobiology, Department of Biology, Yale University, New Haven, CT
Thesis Title: *Hypoxia in the Central Nervous System: Electrophysiologic Responses and the Role of Na^+ Channels*.

1994 **M.Phil.**, Department of Biology, Yale University, New Haven, CT

1993 **M.S.**, Department of Biology, Yale University, New Haven, CT

1977 **B.A.,** Biology, University of Virginia, Charlottesville,VA

PRESENT POSITION

2008 – present Associate Professor, Southeastern Louisiana University, Hammond, LA

2003 – 2008 Assistant Professor, Southeastern Louisiana University, Hammond, LA

Teaching - Neurobiology with lab (undergraduate and graduate), Animal Behavior with lab (undergraduate and graduate), Animal Physiology with lab (undergraduate), Anatomy & Physiology lecture & laboratory (undergraduate), General Biology laboratory (undergraduate), Biology of Sensory Systems (graduate), Physiology of Homeostasis (graduate).

Research - structure-function analysis of slow inactivation in voltage-gated Na^+ channels.

RESEARCH EXPERIENCE

1997 – 2002 Postdoctoral Research Fellow, Department of Anesthesia Research, Brigham & Women's Hospital, Harvard Medical School, Boston, MA

Research focussed on understanding the relationship between molecular structure and physiologic function in voltage-gated sodium channels (NaChs) using wild-type, chimeric and mutant NaChs from different species and tissues.

1991 – 1997 Graduate Studies, Departments of Biology, Neurobiology, Physiology, and Pediatrics Yale University and Yale Medical School, New Haven, CT

Electrophysiologic analysis of the response of neurons in the central nervous system to oxygen deprivation (hypoxia) which included the role of regional variations, age-related differences, and other intrinsic and extrinsic factors. Studies in other laboratories included restriction mapping of olfactory-associated genes in *Drosophila*, histological studies on muscle morphogenesis in *Drosophila*, physiological studies of fever-induced temperature regulation in rats, and neuropharmacologic studies on synaptogenesis in frog.

1987 – 1991 Research Associate, Department of Biomedical Engineering, Johns Hopkins Medical School, Baltimore, Maryland

Neuroanatomical and neurophysiological studies of the rat autonomic nervous system using neuroanatomical tracing, light and immunfluorescent microscopy, and *in vivo* neurophysiologic recordings

1983 – 1986 Research Associate, Department of Anatomy, Georgetown University Medical School, Washington, DC

Comparative neuroanatomical studies of the VIIIth cranial nerve in fish and salamanders.

TEACHING EXPERIENCE

Southeastern Louisiana University, Hammond, LA

2008 – present **Associate Professor, Department of Biological Sciences**

2003 – 2008 **Assistant Professor, Department of Biological Sciences**

Neurobiology with lab (undergraduate and graduate), Animal Behavior with lab (undergraduate and graduate), Animal Physiology with lab (undergraduate), Anatomy & Physiology lecture & laboratory (undergraduate), General Biology laboratory (undergraduate), Biology of Sensory Systems (graduate), Physiology of Homeostasis (graduate).

Northeastern University, Boston, MA

2002 (2 terms) Invited Lecturer, Neurophysiology, Physician Assistant Program

2000 – 2002 (4 terms) Instructor, Anatomy & Physiology, Department of Biology

1999 (1 term) Instructor, General Biology for non-majors, Department of Biology

Yale University, New Haven, CT

1995 – 1996 (2 terms) Lecturer, Laboratory for Neurobiology (graduate & undergraduate)

1994 – 1995 (2 terms) Teaching Assistant, Laboratory for Biology of Reproduction and Development

1992 – 1994 (3 terms) Teaching Assistant, Neurobiology (lecture & laboratory, graduate & undergraduate)

1991 – 1992 (2 terms) Teaching Assistant, Lecture & Laboratory for Introduction to Biology (for majors)

GRANTS AND FELLOWSHIPS

2008 – 2011 Academic Research Enhancement Award (AREA), National Institutes of Health, $186,895

2005 – 2008 Academic Research Enhancement Award (AREA), National Institutes of Health, $179,092

2006 – 2007 Faculty Development Grant, Southeastern Louisiana University, $1000

2005 – 2006 Faculty Development Grant, Southeastern Louisiana University, $1862

2004 – 2005 Faculty Development Grant, Southeastern Louisiana University, $1800

2000 – 2003 National Research Service Award, National Institutes of Health, $126,844

1999 – 2000 Postdoctoral Fellowship, American Heart Association, New England Affiliate, $50,000

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Biophysical Society

Society for Neuroscience

American Association for the Advancement of Science

Invited Reviewer, *Journal of Neuorphysiology*

Invited Reviewer, *Experimental Brain Research*

Invited Reviewer, *Neuroscience Letters*

Invited Reviewer, *Pflugers Archives - European Journal of Physiology*

Invited Reviewer, *Forensic Science International*

Invited Reviewer, *Biophysical Journal*

Invited Reviewer, *Journal of Physiology (London)*

PUBLICATIONS

Peer-reviewed Research Articles

Chancey JW, Shockett PE, O'Reilly JP (2007) Relative resistance to slow inactivation of human cardiac Na^+ channel hNav1.5 is reversed by lysine or glutamine substitution at V930 in D2-S6. *American Journal of Physiology – Cell Physiology* 293: C1895-C1905

O'Reilly JP, Shockett PE (2006) Slow-inactivation induced conformational change in domain 2-segment 6 of cardiac Na^+ channel. *Biochemical and Biophysical Research Communications* 345: 59-66.

O'Reilly JP, Wang S-Y, Wang GK (2003) Methanethiosulfonate-modification alters local anesthetic block in rNav1.4 cysteine-substituted mutants S1276C and L1280C. *Journal of Membrane Biology.* 193: 47-56.

O'Reilly JP, Wang S-Y, Wang GK (2001) Residue-specific effects on slow inactivation at V787 in D2-S6 of $Na_v1.4$ sodium channels. *Biophysical Journal* 81: 2100-2111.

Novotny EJ, Ariyan C, Mason GF, O'Reilly JP, Haddad GG, Behar KL (2001) Differential increases in cerebral cortical glucose metabolism during rat postnatal development is greater in vivo than in vitro. *Brain Research* 888: 193-202.

O'Reilly JP, Wang S-Y, Wang GK (2000) A point mutation in domain 4 - segment 6 of rat skeletal muscle Na^+ channel produces an atypical inactivation state. *Biophysical Journal* 78: 773-784.

Xia Y, Fung M, O'Reilly JP, Haddad GG (2000) Increased neuronal excitability after long-term O_2 deprivation is mediated mainly by sodium channels. *Brain Research: Molecular Brain Research* 76(2):211-219.

O'Reilly JP, Wang S-Y, Kallen RG, Wang GK (1999) Comparison of slow inactivation in human heart and rat skeletal muscle Na^+ channel chimeras. *Journal of Physiology (London)* 515.1: 61-73.

O'Reilly JP, Cummins TR, Haddad GG (1997) Oxygen deprivation inhibits Na^+ current in hippocampal neurons via protein kinase C. *Journal of Physiology (London)* 503.3: 479-488.

O'Reilly JP, Haddad GG (1996) Chronic hypoxia in vivo renders neocortical neurons more vulnerable to subsequent acute hypoxic stress. *Brain Research* 711: 203-210.

O'Reilly JP, Jiang C, Haddad GG (1995) Major differences in response to graded hypoxia between hypoglossal and neocortical neurons. *Brain Research* 683: 179-186.

Selected Published Abstracts and Presentations

Chancey JW, Shockett PE, O'Reilly JP (2007) Lysine substitution at V930 in D2-S6 of hNav1.5 greatly enhances slow inactivation. 2007 Biophysical Society Meeting Abstracts. *Biophysical Journal,* Supplement, 20a, Abstract 473-Pos.

O'Reilly JP, Wang S-Y, Wang GK (2002) MTSEA-modification of L1280C in D3-S6 of rNav1.4 produces resistance to local anesthetic block similar to lysine-substitution in L1280K. *Abstracts: Society for Neuroscience* 835.5.

O'Reilly JP, Wang S-Y, Wang GK (2001) Different amino acids at V787 in D2-S6 of rat skeletal muscle Na channel produce opposite effects on slow inactivation. *Biophysical Society Abstract* 692.

O'Reilly JP, Wang S-Y, Wang GK (1999) Altered kinetics with single and double mutations in segment 6 of muscle Na channel. *Biophysical Society Abstract* 497.

O'Reilly JP, Wang S-Y, Wang GK (1998) Na channel slow inactivation differs between human heart and rat skeletal muscle isoforms. *Abstracts: Society for Neuroscience* 427.7.

O'Reilly JP, Haddad GG (1996) Hypoxia reduces Na^+ current in hippocampal neurons via a kinase mediated pathway. *Abstracts: Society for Neuroscience* 841.1.

O'Reilly JP, Schwartz ML, Haddad GG (1995) Adaptive mechanisms in developing brain: II. Effect of chronic hypoxia on neuronal excitability. *Annals of Neurology* 38: 533.

Novotny EJ, Ariyan C, Akiyama Y, O'Reilly JP, Behar KL, Haddad GG (1995) Comparison of the ontogeny of brain oxidative metabolism in vivo versus in vitro: an NMR spectroscopy study. *Abstracts: Society for Neuroscience* 656.6.

O'Reilly JP, Haddad GG (1995) Different responses of cortical and brain stem neurons to graded hypoxia. *American Journal of Respiratory and Critical Care Medicine* 151(4): A633.