BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Zylka, Mark J.	Assistant Professor Dept. of Cell & Molecular Physiology and UNC Neuroscience Center
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Virginia Tech	B.S.	1990-1994	Biochemistry
National Institutes of Health		1991-1994*	Neuroendocrinology
Harvard Medical School	Ph.D.	1994-1999	Neurobiology
California Institute of Technology	Postdoc.	2000-2005	Neurobiology

* Summers only

A. Positions and Honors.

Positions and Employment

1991-1994 IRTA Summer Research, NIH, NICHD
(Mentor: David C. Klein)
1994-1999 Graduate Student, Department of Neurobiology, Harvard Medical School
(Mentor: Steven M. Reppert)
2000-2003 Postdoctoral Scholar in Biology, Division of Biology, Caltech
(Mentor: David J. Anderson)
2003-2005 Associate, Howard Hughes Medical Institute, Division of Biology, Caltech
2006-present Assistant Professor, Cell and Molecular Physiology, University of North Carolina, Chapel Hill
2007-present Director, UNC Bacterial Artificial Chromosome (BAC) Engineering Core Facility

Other Experience and Professional Memberships

1992-present American Association for the Advancement of Science
2005-present Society for Neuroscience

Honors

1991-1994 Received five different Academic Scholarships
1991-1994 President's List (4.0 GPA) for seven of eight semesters
1991 Luther K. Brice General Chemistry Award for the highest grade in the Chemistry majors section of Organic Chemistry.
1994 American Chemical Society Award, outstanding senior in the graduating biochemistry class
1994 Alpha Zeta Outstanding Senior in graduating biochemistry class
1994 Phi Sigma Society National Res. Award, achievement in biological science
1994 Barry Goldwater National Scholar in Mathematics, Science and Engineering
1996-1999 Predoctoral NRSA, National Research Service Award
1997 Albert J. Ryan Fellow for excellence in Graduate research
2000-2003 Damon Runyon-Walter Winchell Foundation Postdoctoral Fellowship
2006-present Alfred P. Sloan Research Fellowship
2006-present Klingenstein Fellowship Award in the Neurosciences
2007-present Searle Scholar
2007-present Rita Allen Foundation-Milton E. Cassel Scholar* (**awarded only to highest-ranked scholar*)

B. Peer-reviewed publications (in chronological order).

* = Authors contributed equally to the paper

1. Weller, J.L., Jaffe, H., Roseboom, P.H., **Zylka, M.J.**, and Klein, D.C. (1996). 2D-PAGE analysis–adrenergically regulated pineal protein AIP37/6 is a phosphorylated isoform of cytosolic malate dehydrogenase. Brain Research *713*, 8-16.
2. **Zylka, M.J.**, and Schnapp, B.J. (1996). Optimized filter set and viewing conditions for the S65T mutant of GFP in living cells. Biotechniques *21*, 220-226.
3. Chik, C.L., Liu, Q.Y., Li, B., Klein, D.C., and **Zylka, M**. (1997). Alpha(1D) L-type calcium channel currents – inhibition by beta-adrenergic agonist and pituitary adenylate cyclase-activating polypeptide (PACAP) in rat pinealocytes. J. Neurochem*. 68*, 1078-1087.
4. Shearman, L.P.*, **Zylka, M.J.***, Weaver, D.R., Kolakowski, L.F. Jr., and Reppert, S.M. (1997). Two *period* homologs: Circadian expression and photic regulation in the suprachiasmatic nuclei. Neuron *19*, 1261-1269.
5. Solow, B., Bischoff, K.M., **Zylka, M.J.**, and Kennelly, P.J. (1998). Archaeal phosphoproteins. Identification of a hexosephosphate mutase and the [alpha]-subunit of succinyl-CoA synthetase in the extreme acidothermophile *Sulfolobus solfataricus*. Protein Science *7*, 105-111.
6. **Zylka, M.J.***, Shearman, L.P.*, Weaver, D.R., and Reppert, S.M. (1998). Three *period* homologs in mammals: Differential light responses in the suprachiasmatic circadian clock and oscillating transcripts outside of brain. Neuron *20*, 1103-1110.
7. **Zylka, M.J.**, Shearman, L.P., Levine, J.D., Jin, X., Weaver, D.R., and Reppert, S.M. (1998). Molecular analysis of mammalian *Timeless*. Neuron *21*, 1115-1122.
8. Jin, X.*, Shearman, L.P.*, Weaver, D.R., **Zylka, M.J.**, De Vries, G.J., and Reppert, S.M. (1999). A molecular mechanism regulating rhythmic output from the suprachiasmatic circadian clock. Cell *96*, 57-68.
9. Shearman, L.P., **Zylka, M.J.**, Reppert, S.M., and Weaver, D.R. (1999). Expression of basic helix-loop-helix/PAS genes in the mouse suprachiasmatic nucleus. Neuroscience *89*, 387-397.
10. Kume, K.*, **Zylka, M.J.***, Sriram, S.*, Shearman, L.P.*, Weaver, D.R., Jin, X.J., Maywood, E.S., Hastings, M.H., and Reppert, S.M. (1999). mCRY1 and mCRY2 are essential components of the negative limb of the circadian clock feedback loop. Cell *98*, 193-205.
11. **Zylka, M.J.**, and Reppert, S.M. (1999). Discovery of a putative heme-binding protein family (SOUL/HBP) by two-tissue suppressive subtractive hybridization and database searches. Molecular Brain Research *74*, 175-181.
12. Dong, X., Han, S-K., **Zylka, M.J.**, Simon, M.I., and Anderson, D.J. (2001). A Diverse Family of GPCRs Expressed in Specific Subsets of Nociceptive Sensory Neurons. Cell *106*, 619-632.
13. Han, S-K., Dong, X., Hwang, J-I., **Zylka, M.J.**, Anderson, D.J., and Simon, M.I. (2002). Orphan G protein-coupled receptors MrgA1 and MrgC11 are distinctively activated by RF-amide related peptides through the Gαq/11 pathway. Proc. Natl. Acad. Sci. USA *99*, 14740-14745.
14. **Zylka, M.J.**, Dong, X., Southwell, A.L., and Anderson, D.J. (2003). Atypical expansion in mice of the sensory neuron-specific *Mrg* G protein-coupled receptor family. Proc. Natl. Acad. Sci. USA *100*, 10043-10048.
15. Lee, J., **Zylka, M.J.**, Anderson, D.J., Burdette, J.E., Woodruff, T.K., Meade, T.J. (2005). A steroid-conjugated contrast agent for magnetic resonance imaging of cell signaling. J. Am. Chem. Soc. *127*:13164-13166.
16. **Zylka, M.J.**, Rice, F.L., Anderson, D.J. (2005). Topographically distinct epidermal nociceptive circuits revealed by axonal tracers targeted to *Mrgprd*. Neuron *45*,17-25.
17. Liu, Q., Vrontou, S., Rice, F.L., **Zylka, M.J.**, Dong, X.D., Anderson, D.J. (2007). Molecular genetic visualization of a rare subset of unmyelinated sensory neurons that may detect gentle touch. Nature Neurosci. Published Online July 8, 2007.

C. Research Support.

<u>Ongoing Research Support</u>

Zylka (PI) 1/1/06 – 1/1/11
Startup funds from UNC

Zylka (PI) 9/16/06 – 9/15/08
Sloan Research Fellowship
Functional Analysis of Mammalian Pain Circuits

Zylka (PI) 7/1/06 – 7/1/08
National Alliance for Research on Schizophrenia and Affective Disorders (NARSAD) Young Investigator Award
Contribution of Mrgprd Expressing Pain Circuits to Psychiatric Disorders

Zylka (PI) 7/1/06 – 7/1/09
Klingenstein Fellowship
Circuit-based mechanisms for encoding painful somatosensory stimuli

Zylka (PI) 9/1/06 – 9/1/09
Whitehall Foundation Research Grant
Circuit-based Mechanisms for Encoding Pain and Affect

Zylka (PI) 6/1/07 – 5/31/10
Searle Scholars Program Grant
A Genetic Approach to Study Pain Circuits in Mice

Zylka (PI)
Rita Allen Foundation Fall 2007 – 2010
High-throughput Approaches to Identify Analgesics