

BIOGRAPHICAL SKETCH

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NAME Thomas J. Morrow		POSITION TITLE Research Associate Professor of Neurology	
eRA COMMONS USER NAME (credential, e.g., agency login)			
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
Fordham University, Bronx, NY	B.S.	1967	Biology
Long Island University, Greenvale, NY	M.S.	1969	Marine Biology
University of Michigan, Ann Arbor, MI	Ph.D.	1976	Neurophysiology

A. Positions and Honors:

- 1975-79 Research Associate II, University of Michigan, Dept. of Physiology
- 1979-80 Asst. Research Scientist, University of Michigan, Dept. of Physiology
- 1980-present Health Science Research Specialist / Clinical Neurophysiologist, Ann Arbor VAMC, Neurology
- 1980-1988 Adjunct Instructor, University of Michigan, Dept. of Physiology
- 1988-1994 Adjunct Asst. Professor, University of Michigan, Dept. of Physiology
- 1989-1992 Assistant Research Scientist, University of Michigan, Dept. of Neurology
- 1992-1997 Associate Research Scientist, University of Michigan, Dept. of Neurology
- 1994-2007 Adjunct Associate Professor, University of Michigan, Dept. of Physiology
- 1997-2003 Senior Associate Research Scientist, University of Michigan, Dept. of Neurology
- 2003-2007 Research Associate Professor, University of Michigan, Dept. of Neurology, Ann Arbor, MI
- 2007-present Research Professor, University of Michigan, Dept. of Neurology, Ann Arbor, MI
- 2007-present Adjunct Professor, University of Michigan, Dept. of Molecular and Integrative Physiology

Honors and Awards:

- 1963-69 New York State Scholar Incentive Award
- 1967-69 Research Assistantship, Long Island University
- 1969-1971 Research Assistantship, University of Michigan, Dept. of Natural Resources
- 1971-1975 Teaching Fellowship, University of Michigan, Dept. of Physiology

B. Selected Peer-Reviewed Publications

1. Lin Y, Morrow TJ, Kiritsy-Roy JA, Terry LC, Casey KL: Cocaine: A supraspinal, dopamine mediated, non-opiate analgesic. Brain Res 1989; 479:396-312.
2. Shyu BC, Kiritsy-Roy JA, Morrow TJ, Casey KL: Neurophysiological, pharmacological and behavioral evidence for medial thalamic mediation of cocaine-induced dopaminergic analgesia. Brain Res 1992; 572:216-223.
3. Beydoun A, Morrow TJ, Shen, JF, Casey KL: Variability in laser-evoked potentials: attention, arousal and lateralized differences. Electroenceph and Clin Neurophysiol 1993, 88:173-181.
4. Casey KL, Zumberg M, Heslep H, Morrow TJ: Afferent modulation of warmth sensation and heat pain in the human hand. Somatosensory and Motor Res 1993, 10: 327-337.
5. Casey KL, Minoshima S, Berger KL, Koeppe, RA, Morrow TJ, Frey KA: Positron emission tomographic analysis of cerebral structures activated specifically by repetitive noxious heat stimuli. J Neurophysiol 1994, 71:802-807

6. Kiritsy-Roy JA, Shyu BC, Danneman PJ, Morrow TJ, Belczynski C, Casey KL: Spinal antinociception mediated by cocaine-sensitive dopaminergic supraspinal mechanisms. *Brain Res* 1994, 644: 109-116.
7. Danneman PJ, Kiritsy-Roy JA, Morrow TJ, Casey KL: Central delay of the laser-activated tail flick reflex. *PAIN* 1994, 58: 39-44.
8. Pastoriza LN, Morrow TJ, Casey KL: Medial frontal cortex lesions selectively attenuate the hot plate response: Possible nocifensive apraxia in the rat. *PAIN* 1996, 64: 11-17.
9. Casey KL, Beydoun A, Boivie J, Sjolund, B, Holmgren H, Leijon G, Morrow TJ, Rosen I: Laser-evoked cerebral potentials and sensory function in patients with central pain. *PAIN* 1996, 64: 485-492.
10. Casey KL, Minoshima S, Morrow TJ and Koeppe RA: Comparison of human cerebral activation patterns during cutaneous warmth, heat pain, and deep cold pain. *J. Neurophysiol*, 1996, 76: 571-581.
11. Beydoun A, Dyke DBS, Morrow TJ and Casey KL: Topical capsaicin selectively attenuates heat pain and Ad fiber-mediated laser-evoked potentials. *PAIN*, 1996, 65: 189-196.
12. Svensson P, Beydoun A, Morrow TJ, Casey KL: Non-painful and painful stimulation of human skin and muscle: analysis of cerebral evoked potentials. *Electroencephalography and clinical Neurophysiology*, 1997, 104: 343-350.
13. Svensson P, Rosenberg B, Beydoun A, Morrow TJ, and Casey KL,: Comparative psychophysical characteristics of cutaneous CO2 laser and contact heat stimulation. *Somatosensory & Motor Research*, 1997, 14: 113-118.
14. Svensson P, Minoshima S, Beydoun A, Morrow TJ, Casey KL. Cerebral processing of acute skin and muscle pain in humans. *J. Neurophysiol*, 1997, 78: 450-460.
15. Svensson P, Beydoun A, Morrow TJ, and Casey KL: Human intramuscular and cutaneous pain: psychophysical comparisons. *Exp. Brain Res.* 1997, 114: 390-392.
16. Beydoun A, Morrow TJ, and Casey, KL. Pain-related laser-evoked potentials in awake monkeys: Identification of components, behavioral correlates and drug effects. *PAIN*, 1997, 72: 319-324
17. Morrow TJ, Paulson PE, Danneman PJ, Casey, K.L.: Regional changes in forebrain activation during the early and late phase of formalin nociception: analysis using cerebral blood flow in the rat. *PAIN*, 1998, 75 (2,3): 355-365.
18. Paulson PE, Minoshima S, Morrow TJ and Casey KL: Pain perception and patterns of cerebral activation during noxious heat stimulation: Gender differences. *PAIN*, 1998, 76:223-229.
19. Morrow TJ, Paulson PE, Brewer KL, Yesierski RP, K.L. Casey: Chronic, selective forebrain responses to excitotoxic dorsal horn injury. *Exptl Neurology*, 2000, 161: 220-226
20. Paulson PE, Morrow TJ, K.L. Casey: Bilateral behavioral and regional cerebral blood flow changes during painful peripheral mononeuropathy in the rat. *PAIN*, 2000, 84: 233-245.
21. Morrow TJ and Casey KL: Attention-related, cross modality modulation of somatosensory neurons in primate ventrobasal (VB) thalamus. *Somatosensory and Motor Research*, 2000, 17(2): 133-144.
22. Casey KL, Svensson P, Morrow TJ, Raz J, Jone C, Minoshima S: Selective opiate modulation of nociceptive processing in the human brain. *J. Neurophysiol*, 2000, 84: 525-533.
23. Casey KL, Morrow TJ, Lorenz J, Minoshima S: Temporal and Spatial Dynamics of Human Forebrain Activity During Heat Pain: Analysis by Positron Emission Tomography. *J Neurophysiol* 2001, 85 (2): p. 951-959.
24. Paulson PE, Casey KL, Morrow, TJ: .Long Term Changes in Behavior and Regional Cerebral Blood Flow Associated with Painful Peripheral Mononeuropathy in the Rat. *Pain.* 2002, 95:31-40.
25. Lorenz J, Cross DJ, Minoshima S, Morrow TJ, P.E. Paulson PE, and Casey KL: A Unique Representation Of Heat Allodynia In The Human Brain. *Neuron*, 2002, 383-393.
26. Hong S, Morrow TJ, Paulson PE, Isom LL, Wiley JW: Early painful diabetic neuropathy is associated with differential changes in tetrodotoxin-sensitive and -resistant sodium channels in dorsal root ganglion neurons in the rat., *J. Biol. Chem.*, 2004, 279: 29341-29350.
27. Paulson PE, Casey KL, Morrow TJ: Differences in Forebrain Regional Cerebral Blood Flow in Two Strains of Rat At Rest and After SCI. *Exptl. Neurology*, 2005, 196: 413-421.
28. Hauck M, Bischoff P, Schmidt G, Zimmerman R, Lorenz J, Morrow TJ, Bromm B: Clonidine effects on pain evoked SII activity in humans. *Eur J Pain*, 2006, 10: 757-765.
29. Cross DJ, Flexman JA, Anzai Y, Morrow TJ, Maravilla KR, Minoshima S. In vivo imaging of functional disruption, recovery and alteration in rat olfactory circuitry after lesion. *Neuroimage.* 2006, 32:1265-72.

30. Paulson, PE, Wiley, JW and Morrow, TJ: Concurrent Activation of the Somatosensory Forebrain and Deactivation of Periaqueductal Gray in Rats with Diabetes-Induced Neuropathic Pain. *Exptl. Neurology*, 2007, 208:305-313.

C. Research Support.

Ongoing Research Support

1 R01 NS046406-01A2 Morrow (PI) 09/15/2004 to 06/30/2008

NIH/NINDS

Supraspinal mechanisms in painful diabetic neuropathy

The major goal of this project is to identify potential CNS mechanisms of chronic pain as a consequence of diabetic mellitus. This project employs a time series analysis of the development of painful diabetic neuropathy over several weeks using quantitative behavioral assessment and functional brain imaging to determine the role specific CNS structures in the production and/or maintenance of neuropathic pain in diabetic rats.

Role: PI

Completed Research Support

VA Merit Review Grant Morrow (PI) 10/1/2005 to 9/30/2008

Department of Veteran Affairs

CNS Mechanisms of Neuropathic Pain in Type I Diabetes Mellitus

The main goal of this project is to identify potential CNS mechanisms of pain as a consequence of type I diabetes mellitus. This project will identify CNS structures with a unique stimulus-response relationships for activation in rats exhibiting symptoms of chronic pain due to diabetes. This study employs quantitative behavioral assessment and functional brain imaging to determine the role specific CNS structures in the production and/or maintenance of neuropathic pain in diabetic rats.

Role: PI

JDRF grant Fink (PI) 08/01/2004 – 06/31/2006

Juvenile Diabetes Research Foundation

Painful Diabetic Neuropathy

The goal of this project is to investigate potential gene therapies for the reducing intractable pain from diabetic neuropathy.

Role: Co-PI