CURRICULUM VITAE
Robert Hamilton Kline, IV M.S.

PERSONAL INFORMATION

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UNIVERSITY ADDRESS

Department of Neurology
F-512a Acre Bld
1310 24th Ave South
Nashville TN, 37212

CURRENT POSITION

Laboratory Manager (Lab of Experimental Neurology)
VA Tennessee Valley Healthcare System and Vanderbilt University *(1999-present)*

AREAS OF SPECIALIZATION

Neurobiology of pain
Neuronal lesioning with targeted toxins
Behavioral pharmacology of nociception
Operant and reflex algesiometry
Chronic catheterization of the lumbar intrathecal space in rat
Stereo tactic micro-injections in rat brain
Trans-cardiac perfusion (mouse and rat)
Quantification of anatomic CNS lesions
IHC, IF single and double label
Graphical and statistical analysis (Sigma Plot, Sigma Stat)

EDUCATION

1998	B.S.	Western Kentucky University Biology and Biophysics (Neuroscience Emphasis)
2006	M.S.	Vanderbilt University School of Medicine Laboratory Investigation. (Neuroscience Emphasis)

Thesis Title: Postsynaptic dorsal horn mu-opioid receptor expressing neurons are required for the anti-hyperalgesic effects of morphine.

Advisor:	Ronald G Wiley M.D., Ph.D.
Committee members:	Viven Casagrande Ph.D.
	Robert McDonald Ph.D.

PROFFESIONAL SOCIETIES

Society for Neuroscience
American Society of Pain Educators

PUBLICATIONS

Abstracts

C.J. Vierck[1*]; P.M. Belford[3]; M.A. Iqbal[3]; C. Camara[3]; R.H. Kline[3]; D.A. Lappi[2]; R.G. Wiley[3] ALTERED OPERANT AND REFLEX RESPONSES TO NOXIOUS HEAT IN RATS WITH CENTRAL NORADRENERGIC LESIONS USING ANTIDβH-SAPORIN. *1999 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 1999. Online

R.G. Wiley, M.A. Iqbal, R.H. Kline IV, D.A. Lappi. SELECTIVE DESTRUCTION OF CNS NORADRENERGIC NEURONS USING AN IMMUNOTOXIN TO DOPAMINE-BETA HYDROXYLASE, EFFECTS ON PAIN PERCEPTION IN RATS.
American Academy of Neurology 2000.

R.G. Wiley[1,2,3*]; R.H. Kline, IV[1]; D.A. Lappi[4] DOSE-DEPENDENT EFFECTS OF INTRATHECAL SUBSTANCE P-SAPORIN AND SSP-SAPORIN. *2000 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2001. Online

R.H. Kline IV, R.G. Wiley. ANALYSIS OF THE LOW TEMPERATURE HOTPLATE ALGESIA ASSAY. Program No. 157.3. *2002 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2002. Online.

M.T. Harvey, R.H. Kline, M.E. May, M.G. Valdovinos, C.H. Kennedy, R.G. Wiley. INCREASED SENSITIVITY TO SELECTIVE C NOCICEPTOR ACTIVATION FOLLOWING REM SLEEP DEPRIVATION. Program No. 384.9. *2003 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2003. Online

R.G. Wiley, S.A. Miller, R.H. Kline, IV. SELECTIVE DESTRUCTION OF MOR EXPRESSING DORSAL HORN NEURONS USING INTRATHECAL DERMORPHIN-SAPORIN. Program No. 174.15. *2003 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2003. Online

R.H. Kline IV, R.G. Wiley. SSP-SAPORIN DECREASES FORMALIN INDUCED C-FOS EXPRESSION THROUGHOUT THE DORSAL HORN. Program No. 174.7. *2003 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2003. Online.

R.H. Kline IV, R.G. Wiley, C.J. Vierck Jr.. RESINIFERATOXIN-INDUCED THERMAL HYPALGESIA: EFFECTS ON REFLEX AND OPERANT ALGESIA ASSAYS Program No. 60.10. *2004 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2004. Online.

R.G. Wiley, R.H. Kline, IV, D.A. Lappi. INTRATHECAL GALANIN-SAPORIN AND NPY-SAPORIN REDUCE NOCIFENSIVE RESPONSES TO NOXIOUS HEAT AND

FORMALIN Program No. 292.15. *2004 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2004. Online

R.H. Kline IV, R.G. Wiley, C.J. Vierck Jr.. RESINIFERATOXIN-INDUCED THERMAL HYPALGESIA: EFFECTS ON DORSAL HORN ANATOMY Program No. 60.10. *2004 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2005. Online.

R.H. Kline IV, R.G. Wiley. INCREASED FORMALIN BEHAVIOR AFTER INTRATHECAL DERMORPHIN-SAPORIN: DECREASED INHIBITORY CONTROLS? *2005 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2005. Online

R.H. Kline IV, R.G. Wiley. ROLE OF SPINAL CORD MU-OPIOID RECEPTOR EXPRESSING DORSAL HORN NEURONS IN MORPHINE ANALGESIA *2006 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2006. Online

R.H. Kline IV, L.L.Lemons, R.G. Wiley. ANTINOCICEPTIVE EFFECTS OF LUMBAR INTRATHECAL NPY-SAPORIN. Society for Neuroscience, 2007

S Datta, K. Chatterjy, R. H. Kline IV, R.G. Wiley. Anatomical and behavioral correlates of bilateral CCI in a model of neuropathic pain in rats. Society for Neuroscience, 2007

S Datta, K. Chatterjy, R. H. Kline IV, R.G. Wiley. CCK in dorsal horn and nocifensive responses after bilateral CCI in rats. American Society of Anesthesiology 2007.

R.G. Wiley, R.H.Kline, IV. COMPARISON OF RETROGRADE TRACERS FOR COMBINED LABELING STUDIES. Society for Neuroscience, 2007

R.H. Kline IV, L.L.Lemons, R.G. Wiley. ANTINOCICEPTIVE EFFECTS OF LUMBAR INTRATHECAL NPY-SAPORIN. American Pain Society, 2008

R.G. Wiley, L.L.Lemons R.H. Kline IV. REDUCED COLD HYPERALGESIA AND COLD ALLODYNIA AND ANATOMICAL EFFECTS OF LUMBAR INTRATHECAL NPY-SAPORIN. American Pain Society, 2008

Peer Reviewed Abstracts

R.G. Wiley, R.H. Kline IV. ANTI-NOCICEPTIVE ACTIVITY OF LUMBAR INTRATHECAL SSP-SAPORIN. 7th International Conference on the Mechanisms and Treatment of Neuropathic Pain. P38. 2004

R.G. Wiley, R.H. Kline IV. ANALYSIS OF ANTI-NOCICEPTIVE EFFECTS OF SYSTEMIC RESINIFERATOXIN IN RATS. 7th International Conference on the Mechanisms and Treatment of Neuropathic Pain. P39. 2004

R.H. Kline IV, R.G. Wiley, C.J. Vierck. THERMAL NOCICEPTION IN RATS TREATED WITH THE TRPV-1 AGONIST RESINIFERATOXIN (RTX): CORRELATION OF INNATE REFLEX NOCIFENSIVE RESPONSES, OPERANT ALGESIA ASSAYS AND DORSAL HORN ANATOMY. 11TH *IASP World Congress on Pain. 2005*

R.H. Kline IV, R.G. Wiley. ROLE OF SPINAL CORD MU-OPIOID RECEPTOR EXPRESSING DORSAL HORN NEURONS IN MORPHINE ANALGESIA *2007 The Journal of Pain, Volume 8, Issue 4, Supplement 1, April 2007, Page S16*

S Datta, R. H. Kline IV, K. Chatterjy, R.G. Wiley. PROLONGED COLD HYPERALGESIA AFTER BILATERAL CONSTRICTION OF THE SCIATIC NERVE. *The Journal of Pain, Volume 8, Issue 4, Supplement 1, April 2007, Page S8*

S Datta, K. Chatterjy, R. H. Kline IV, R.G. Wiley. BEHAVIORAL AND ANATOMICAL CORRELATIONS AFTER BILATERAL CCI IN RATS AT 45 DAYS: POSSIBLE MECHANISMS OF COLD HYPERALGESIA. 12TH *IASP World Congress on Pain. 2008*

R.G. Wiley R.H. Kline IV. COMPARISON OF NOCIFENSIVE REFLEXES VS OPERANT/INSTRUMENTAL RESPONSES TO NOXIOUS STIMULATION FOR STUDYING PAIN IN RATS: LESSONS FROM SELECTIVE LESIONS. 12TH *IASP World Congress on Pain. 2008*

R.G. Wiley R.H. Kline IV. MOLECULAR NEUROSURGERY IN ANIMAL PAIN RESEARCH: LESSONS FROM TARGETED TOXINS. 12TH *IASP World Congress on Pain. 2008*

Papers

"Neuronal lesioning with axonally transported toxins". *Journal of Neuroscience Methods 103 (2000) 73-82* .Ronald G. Wiley and Robert H. Kline IV.

"Intrathecal substance-p saporin attenuates operant escape from nociceptive thermal stimuli." *Neuroscience 119 (2003)223-232*. C.J. Vierck , R.H. Kline IV ,R.G. Wiley.

"Comparison of innate reflex and operant escape responses to nociceptive skin temperatures produced by heat and cold stimulation of rats" C.J. Vierck, R.H. Kline IV, R.G. Wiley. *Behavioral Neuroscience 2004 Jun;118(3):627-35*

"Nociceptor and age specific effects of REM sleep deprivation induced hyperalgesia" *Behavioural Brain Research 159 (2005) 89-94*, Michael E. May, Mark T. Harvey, Maria G. Valdovinos, Robert H. Kline IV, Ronald G. Wiley and Craig H. Kennedy

"Anti-nociceptive effects of selectively destroying substance P-receptor expressing dorsal horn neurons using [Sar^9, $Met(O_2)^{11}$]substance P-saporin: Behavioral and anatomical analyses", *NeuroscienceVolume 146, Issue 3, 25 May 2007, Pages 1333-1345 2007* R.G. Wiley. R.H. Kline IV C.J. Vierck

"Postsynaptic mu-opioid receptor expressing dorsal horn neurons are required for morphine anti-hyperalgesia." R.H. Kline IV, R.G. Wiley. *The Journal of Pain, Volume 8, Issue 4, Supplement 1, April 2007, Page S1*

"Spinal μ-opioid receptor expressing dorsal horn neurons: Role in nociception and morphine antinociception." R.H. Kline IV, R.G. Wiley *The Journal of Neuroscience, Jan 2008, 28(4) p 904-913*

"Parametric Analysis of Thermal Preference Following REM Sleep Deprivation in the Rat." Mark T. Harvey, Robert H. Kline, IV, A. Celeste Roberts, Michael E. May, Maria G. Valdovinos, Ronald G. Wiley, and Craig H. Kennedy. Behavioral Neuroscience, 2008 In review.

"Comparison of reflex to operant thermal nociceptive tests: Effects of resiniferatoxin" R.H. Kline IV, C.J. Vierck, R.G. Wiley. Pain 2008, In submission.

Book Contributions:

Figures: 2-4 Molecular Neurosurgery With Targeted Toxins 2005
Figure 10.3 Wall and Melzack's Textbook of Pain, 5th Edition 2006

Works in progress

Antinociceptive effects of lumbar intrathecal Neuropeptide Y-saporin in rats.
R.H. Kline IV, R.G. Wiley. *Neuroscience* 2008 In preparation.

Spinally projecting locus coerular neurons are required for normal escape responses from noxious thermal stimuli. R.H. Kline IV, R.G. Wiley. *Neuroscience* 2008 In preparation.

Tonic thermal algesiometry in the rat. R.H. Kline IV, R.G. Wiley. Journal of Neuroscience Methods 2008 In preparation.