

Terry Kremin, PhD

Brain, Behavior, and Cognition

terry@kremin.us
925-864-3600 (cell)
925-689-2148 (home)

4149 Lillian Drive
Concord, CA
94521

EDUCATION:

1998-2004

Boston University, Boston, Massachusetts

D. Phil, completed December, 2003, awarded May, 2004

M.A. – Psychology, awarded September 2003.

Department of Psychology: Brain, Behavior, and Cognition Program.

Thesis Title: Cholinergic and GABAergic modulation of glutamatergic synaptic transmission in the hippocampus.

1995-1998

University of California, Los Angeles; Los Angeles, California

B.S. – Psychobiology

Departmental Honors. Honor thesis title: Win, place, or just show: The effect of reinforcer devaluation on a hippocampal-dependent task.

1988-1989

Idaho State University, School of Applied Technology; Pocatello, ID

Aviation Maintenance. Certificates in airframe and in aircraft powerplants. FAA licensed Airframe and Powerplant mechanic

ACADEMIC RESEARCH POSITIONS:

2004-2008

Postdoctoral Fellow.

Dr. Patricia Janak, Ernest Gallo Clinic and Research Center, University of California, San Francisco.

In vivo electrophysiology in rats and effects of drugs of abuse. Performed *in vivo* recording simultaneously from hippocampus and nucleus accumbens, examining synchrony of individual units and field potential activity. Emphasis on temporal and spatial firing and synchrony at both the individual cell level as well as field potential levels, with particular attention to changes in theta and gamma rhythmic activity. Developed new operant behavior paradigm dependent on the hippocampal formation, as well as writing custom analysis scripts in MATLAB to use informational theory to facilitate comparisons of different regions.

2000-2004

Graduate student/fellow.

Dr. Michael Hasselmo, Department of Psychology, Boston University, Boston, MA.

In vitro electrophysiology of hippocampal and piriform cortex synaptic transmission.

Extracellular recording of cholinergic inhibition of transmission and layer and mAChR subtype specific effects in rats and M1 mAChR knock out mice as well GABA time course effects in the hippocampus of rats.

1998-2000

Graduate student.

Dr. Katherine Kantak, Department of Psychology, Boston University, Boston, MA.

In vivo research on behavioral systems utilizing lidocaine temporary inactivation techniques and cocaine self-administration focusing on reinstatement of drug seeking in rats.

1996-1998

Undergraduate honors research project with Dr. Barbara Knowlton, UCLA, Los Angeles, CA.

Behavioral research using reinforcer devaluations (conditioned taste aversions) in hippocampus and caudate nucleus dependent tasks.

TEACHING POSITIONS:

2010-

Lecturer, psychology and biology departments, Dominican University, San Rafael, CA

Courses:

- Bio 1400/1405: Introductory Biology and lab
- Bio 2500: Anatomy
- Bio/Chem 2990: Biology Research Methods I
- Bio/Chem 4991 & 4992, advanced research methods
- Psych 4005: Health Psychology
- Psych 3187: Statistics
- Psych 1100: Introduction to Psychology
- Psych 4016: Behavioral Pharmacology
- Psych 3175: Physiological Psychology

2000-2002

Lecturer, psychology department, University of Massachusetts, Boston; Boston, MA

Courses:

- Psych 255: Sensation and Perception,
- Psych 250: Learning and Memory

1998-2000

Teaching Fellow, Boston University, Boston, MA

Courses:

- PSY234 Learning, under Dr. Henry Marcucella
- PSY322 Experimental Psychology: Physiological Laboratory under Dr. Jim Cherry

- PSY101 Introduction to Psychology under Richard Ely.

SOFTWARE KNOWLEDGE

- Microsoft Office (Word, Excel, Powerpoint, Publisher, & Outlook)
- OpenOffice (individual applications as with MS Office)
- Endnote
- Microsoft Windows: releases 3.1 through 10 (32 and 64 bit)
- Linux (Primarily SUSE with Gnome and KDE GUIs)
- MathWorks MATLAB (under both Windows and Linux)
- SPSS
- Adobe Acrobat and Illustrator
- TurboCAD
- Borland C++, C++ (Linux/Unix)
- Microsoft Expression
- MedAssociates programming
- Plexon NeuroExplorer & Offline Sorter.
- Various proprietary programming languages for small specialized programs/equipment.
- Windows virtualization
- Currently learning Python
- I have assembled my own computer systems for last 20 years, and have a high familiarity computer componentry and assembly.
- Working with local elementary teaching kids Scratch programming.

NONACADEMIC EXPERIENCE

1989-1995

Field services representative, Beech Aerospace Services, Inc. (Now Raytheon Aerospace Services). Inspected and maintained military C12 & U21 (Beechcraft King Air) aircraft. Lead representative for Los Alamitos Facility 1990-1991.

PROFESSIONAL MEMBERSHIPS & POSITIONS

Invited Panelist: NIH/NIAAA Advanced Alcohol Research Project on Mechanisms of Behavioral Change. National Institute on Alcohol Abuse and Alcoholism, Division of Treatment and Recovery. (September 2007)

Member: Society for Neuroscience (1999- current)

Member: American Psychological Association (2004- current)

Founder: Center for Applied Neural Dynamics and Plasticity (in progress)

www.neuralplasticity.org

Psychology Department Representative: Program in Neuroscience, Boston University (2001-2002)

Member, Secretary: Psi Chi National Honor Society in Psychology, UCLA. (1996-1998)

Member: Golden Key International Honour Society, UCLA (1996-1998)

CITATIONS:

In Preparation:

Kremin T, Janak PJ. Rhythmic activity in the ventral hippocampus and nucleus accumbens: Highly coordinated theta, beta, and gamma range activity during a two lever choice task.

Kremin T & Janak PJ. Simultaneous nucleus accumbens and ventral hippocampus recordings in rats during an operant conditioning task demonstrate equal spatial information encoding.

Kremin T, Cone J & Janak PJ. Simultaneous nucleus accumbens and ventral hippocampus recordings in rats during an operant conditioning task demonstrate similar reward-related perievent information encoding.

Kremin T & Janak PJ. Repeated alcohol bingeing impairs cognitive flexibility in rats.

Peer Reviewed:

Kremin T, Hasselmo ME. Cholinergic suppression of glutamatergic synaptic transmission in hippocampal region CA3 exhibits laminar selectivity: Implication for hippocampal network dynamics. [*Neuroscience*, \(2007\), 149\(4\):760-767.](#)

Kremin T, Gerber D, Giacomo, LM, Huang SY, Tonegawa S, Hasselmo ME. Muscarinic suppression in stratum radiatum of CA1 is dependent on both M1 and M2 receptors and is not dependent on GABAergic interneurons. [*Neurobiology of Learning and Memory*, \(2006\), 85\(2\):153-163](#)

Kantak KM, Green-Jordan K, Valencia E, Kremin T, Eichenbaum HB. Cognitive task performance after lidocaine-induced inactivation of different sites within the basolateral amygdala and dorsal striatum. [*Behavioral Neuroscience* \(2001\), 115\(3\):589-601.](#)

Other:

Kremin, T & Janak, PH. Simultaneous nucleus accumbens and ventral hippocampus recordings in rats during an operant conditioning task. I: Spatial information. Society for Neurosciences Annual Meeting, Washington, DC, November, 2008 (Poster available: <http://www.neuralplasticity.org/kremin.pdf>)

Kremin, T, Cone J & Janak, PH. Simultaneous nucleus accumbens and ventral hippocampus recordings in rats during an operant conditioning task. I: Perievent information. Society for Neurosciences Annual Meeting, Washington, DC, November, 2008(Poster available: <http://www.neuralplasticity.org/cone.pdf>)

Kremin, T & Janak, PH. Simultaneous, bilateral nucleus accumbens and ventral hippocampus recordings in rats during an operant conditioning task demonstrate coordinated activity. Society for Neurosciences Annual Meeting, Atlanta, October, 2006.

Kremin, T. Differences in referencing techniques produces qualitative changes in *in vivo* electrophysiological recording: Examples from a single animal. Invited talk, Plexon User's Group, Society for Neurosciences Annual Meeting, Atlanta, October, 2006

Kremin, T. Cholinergic and GABAergic modulation of glutamatergic synaptic transmission in the hippocampus. Doctoral dissertation (2004), Boston University, Boston.

Kremin T & Hasselmo ME. Cholinergic suppression of synaptic transmission in region CA3 of the rat hippocampal formation shows laminar selectivity. Society for Neurosciences Annual Meeting, New Orleans, November, 2003.

Kremin T, Gerber D, Huang SY, Tonegawa S, Hasselmo ME. Muscarinic suppression in stratum radiatum of CA1 is dependent on both M1 and M2 receptors and is not dependent on GABAergic interneurons. Society for Neurosciences Annual Meeting, Orlando, November, 2002.

Kremin T, Gerber D, Huang SY, Tonegawa S, Hasselmo ME. Muscarinic inhibition of hippocampal EPSPs is attenuated in mice lacking M1 subtype acetylcholine receptors. Society for Neurosciences Annual Meeting, San Diego, November, 2001.

Kremin T, Eichenbaum HB, Katak K. Effects of reversible basolateral amygdala inactivations on a caudate nucleus-dependent task. Society for Neurosciences Annual Meeting, New Orleans, November, 2000.

Katak KM, Valencia E, Black Y, Kremin T, Green-Jordan K, and Eichenbaum HB. Basolateral amygdala cognitive function and cocaine-seeking behavior. College on Problems of Drug Dependence (CPDD) Annual Meeting. San Juan, June 2000.

Green-Jordan K, Valencia E, Kremin T, Eichenbaum HB, Katak K. Cognitive task performance following bilateral lidocaine lesions of different sites within the basolateral amygdala and dorsal striatum. Society for Neurosciences Annual Meeting, Miami Beach, November, 1999.

Kremin T, and Knowlton BJ. The effect of reinforcer devaluation on performance in a hippocampal-dependent task. Undergraduate Research Conference, Los Angeles, California, 1998 and UCLA Brain Sciences, Los Angeles, CA 1998