

**Curriculum Vitae**  
**Neil Chadwick Schmitzer-Torbert**

**Contact Information**

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**Employment**

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2006-present Assistant Professor of Psychology  
Wabash College, Crawfordsville, IN  
2005-2006 Visiting Assistant Professor of Psychology  
Knox College, Galesburg, IL

**Education**

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2000-2005 PhD, Graduate Program in Neuroscience,  
University of Minnesota, Minneapolis, MN  
Thesis title: *Involvement of the rodent striatum in navigation.*  
Adviser: Dr. A. David Redish  
1996-2000 B.A., Summa Cum Laude with College Honors in Psychology,  
Phi Beta Kappa, Knox College, Galesburg, IL

**Awards and Honors**

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Graduate

Neuroscience Thesis Award, Minnesota Medical Foundation (2005)  
Eli Lilly Travel Award, Society for Neuroscience (2004)  
National Science Foundation Graduate Research Fellowship (2000, 2003-2004)  
Graduate School Fellowship, Univ. of Minnesota (2002-2003)  
NSF Integrative Education and Research Training Fellowship (2001-2002)  
Morris Smithberg Memorial Prize, Graduate Program in Neuroscience, Univ. of Minn. (2001)  
*Awarded "to the outstanding first year student in the Graduate Program in Neuroscience"*

Undergraduate

E. Inman Fox Prize, Knox College (2000)  
*"Awarded to the senior student whose scholarly achievement and pursuit of a liberal education are exceptional among peers..."*  
John C. Weigel Prize, Knox College (2000)  
*"Awarded to the [senior] with the highest scholastic achievement."*  
Edith Powers Van Dyke Memorial Award in Psychology, Knox College (2000)  
Robert Stevens Harper Prize for Graduate Study in Psychology, Knox College (2000)  
Psi Chi Regional Undergraduate Research Award (1999)  
Phi Beta Kappa, Knox College (1999)

Mortar Board, Knox College (1999)  
Sigma Xi, Knox College (1999)  
Psi Chi, Psychology Honor Society (President, 1998-2000), Knox College  
Ford Fellow, Knox College (1998)  
Fenn-Proctor Sherwin Award, Knox College (1997)  
*Awarded for the best paper from First-Year Preceptorial, selected on the basis of stylistic elegance and persuasive argumentation.*  
McNair Scholar, Knox College (1996-2000)

## Research Support

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Active – NIH 1 R15 DA029546-01 – PI – \$225,000 (direct costs) Involvement of the rat infralimbic cortex and dorsolateral striatum in the facilitation of habit learning by cocaine.

## Publications

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- van der Meer, M., Johnson, A., Schmitzer-Torbert, N.C. and Redish, A.D. (2010). Triple dissociation of information processing in dorsal striatum, ventral striatum, and hippocampus on a learned spatial decision task. *Neuron* 67, 25-32.
- Schmitzer-Torbert, N.C. and Redish, A.D. (2008). Task-dependent encoding of space and events by striatal neurons is dependent on neural subtype. *Neuroscience*, 153(2), 349-360
- Schmitzer-Torbert, N.C. (2007). Place- and response-learning in human virtual navigation: Behavioral measures and gender differences. *Behavioral Neuroscience*, 121(2), 277-290.
- Schmitzer-Torbert, N.C., Jackson, J.C., Henze, D., Harris, K., and Redish, A.D. (2005). Two quantitative measures for evaluating the quality of extracellularly recorded neurons. *Neuroscience*, 131, 1-11
- Masimore, B., Schmitzer-Torbert, N.C., Kakalios, J., and Redish, A.D. (2005). Striatal local field potentials signal initiation of movement in rats. *NeuroReport* 16(18):2021-4.
- Schmitzer-Torbert, N.C., and Redish, A.D. (2004). Neuronal activity in the rodent dorsal striatum in sequential navigation: Separation of spatial and reward responses on the multiple T task. *Journal of Neurophysiology*, 91(5), 2259-72.
- Schmitzer-Torbert, N.C., Redish, A.D. (2002). Development of path-stereotypy in a single day in rats on a multiple-T maze. *Archives Italiennes Biologie*, 140(4), 295-301.

## Manuscripts Submitted and in Preparation (\* indicates undergraduate co-author)

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- Kaster, M.\*, and Schmitzer-Torbert, N.C. (in preparation). Post-training administration of cocaine in rats facilitates habit learning.
- Schmitzer-Torbert, N.C., and Hewtson, B\*. (in preparation). Place- and response-learning in human virtual navigation: Sensitivity to training parameters.

## Conference Presentations (\* indicates undergraduate co-presenter)

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- Schmitzer-Torbert, N. and MacDonald, A. (to be presented in 2011). Relationship between individual differences in navigation strategies and addiction vulnerability. Poster to be presented at the Society for Neuroscience Annual Meeting, Washington, DC.
- Apostolidis, S.\*, Ritz, R.\*, Blackwell, J.\*, Amoa, R.\*, Sun, S.\* and Schmitzer-Torbert, N. (2010). Lesions targeting the rat infralimbic cortex and dorsolateral striatum block facilitation of habit

- learning by post-training cocaine injections. Poster presented at the Society for Neuroscience Annual Meeting, San Diego, CA.
- Kaster, M. and Schmitzer-Torbert, N.C. (2009). Post-training cocaine injections facilitate habitual lever pressing in rats. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.
- Schmitzer-Torbert, N.C. and Braitman, D.\* (2008). Effects of dorsolateral striatal lesions on place- and response-learning in a complex maze. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.
- Schmitzer-Torbert, N.C. and Hewetson, B.\* (2007). Place- and response-learning in human virtual navigation: Sensitivity to training parameters. Poster presented at the Society for Neuroscience Annual Meeting, San Diego, CA.
- Schmitzer-Torbert, N.C. (2006). Assessing place- and response-strategies in human virtual navigation. Poster presented at the Society for Neuroscience Annual Meeting, Atlanta, GA, 365.8.
- Schmitzer-Torbert, N.C. and Redish, A.D. (2005). Identification and behavioral correlates of putative striatal interneurons in rodents. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.
- Schmitzer-Torbert, N.C. and Redish, A.D. (2004). Task-dependent spatial encoding in the dorsal striatum. Poster presented at the Society for Neuroscience Annual Meeting, San Diego, 207.4.
- Masimore, B., Schmitzer-Torbert, N.C., Jackson, J.C., Kakalios, J., and Redish, A.D. (2004). Synchronous oscillations in the striatal local field potentials correlate with movement initiation. Poster presented at the Society for Neuroscience Annual Meeting, San Diego, 207.3.
- Schmitzer-Torbert, N.C., Rao, S., Jackson, J.C., and Redish, A.D. (2003). Changes in patterns of neural firing in the rodent dorsal striatum precede development of a regular route. Poster presented at the Society for Neuroscience Annual Meeting, New Orleans, 621.3.
- Jackson, J.C., Schmitzer-Torbert, N.C., Harris, K.D., and Redish, A.D. (2003). Quantitative assessment of extracellular multichannel recording quality using measures of cluster separation. Poster presented at the Society for Neuroscience Annual Meeting, New Orleans, 518.18.
- Schmitzer-Torbert, N.C., Jackson, J.C., and Redish, A.D. (2002). Behavioral correlates of neuronal activity in the rodent dorsal striatum: the multiple-T task. Poster presented at the Society for Neuroscience Annual Meeting, Orlando, 676.3.
- Redish, A.D., Schmitzer-Torbert, N.C., and Jackson, J.C. (2002). Classification of dorsal striatal neurons from extracellular recordings in awake behaving rats. Poster presented at the Society for Neuroscience Annual Meeting, Orlando, 676.4.
- Jackson, J.C., Schmitzer-Torbert, N.C., and Redish, A.D. (2002). Behavioral correlates of dorsal striatal neuronal ensembles recorded from rats on an operant conditioning task. Poster presented at the Society for Neuroscience Annual Meeting, Orlando, 676.5.
- Torbert, N. C., Wasserman, E., and Young, M. E. Visual working capacity. Paper presented at the Seventh Annual Penn State McNair Research Conference, State College, PA, 1999.
- Torbert, N. C., and Kasser, T. Mindfulness meditation: Effects on coping strategies. Paper presented at the Annual Meeting of the Midwestern Psychological Association; Chicago, IL, 1999.
- Torbert, N. C., and Bratt, M. The usefulness of mindfulness-based stress reduction with college students. Paper presented at McNair Undergraduate Research Conference; Delevan, WI, 1998.
- Torbert, N. C., and Bratt, M. The usefulness of mindfulness-based stress reduction with college students: Preliminary findings. Paper presented at the Sixth Annual Penn State McNair Research Conference; State College, PA, 1998.

## **Invited Talks**

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- This is your rat on drugs: The effect of cocaine on habit learning in rats. Department of Psychology, DePauw University (2010).
- The role of the basal ganglia in learning and memory: Insights from rodent navigation. Neuroscience Seminar Series, Macalester College, St. Paul, MN (2004)

## **Courses**

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Biological Psychology/Behavioral Neuroscience  
Research Experience in Behavioral Neuroscience  
Introduction to Neuroscience  
Introduction to Psychology  
Research Methods and Statistics in Psychology  
Conditioning and Learning/Behavioral Modification  
Emotion

## **Research Experience**

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### Representation in the rodent dorsal striatum during navigation.

Graduate research with Dr. A. David Redish, University of Minnesota, 2000-2004.

*Training: Extracellular recording in awake, behaving rats.*

### Involvement of the rodent medial prefrontal cortex in olfactory short-term memory.

Honors thesis with Dr. Heather Hoffmann, Knox College, 1999-2000.

*Training: Excitotoxic lesions in rats.*

### Working memory capacity of humans and pigeons.

Undergraduate research with Dr. Edward Wasserman, University of Iowa, 1999.

*Training: Behavioral experiments with humans and pigeons.*

### The use of mindfulness-based stress reduction with undergraduates.

Undergraduate research with Dr. Michael Bratt, University of Massachusetts Medical Center, Worcester, MA, 1998.

*Training: Analysis of survey data.*

### Evaluation of the effects of mindfulness-based stress reduction in college students.

Independent project research with Dr. Tim Kasser, Knox College, 1998.

*Training: Experimental design, survey design, data analysis.*

## **Professional activities and development**

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### Brain Day (2009-10)

Organized (with Dr. Karen Gunther) a community outreach day at a local museum to present brains and activities to local children.

### Psi Chi Psychology Honor Society Faculty Advisor, Wabash College (2006-2008)

### Brain Awareness Week (2004, 2008-9)

Presented brains and activities to six classes of 4<sup>th</sup> grade students at Sweeney Elementary School in Shakopee, MN, and to 5-6 classes per year of 5<sup>th</sup> grade students at Hoover Elementary in Crawfordsville, IN.

### Developing effective assignments (2005)

Participated in a one-day workshop on learning theory and development of assignments based on learning objectives at Knox College.

### Grant writing workshop for faculty in the liberal arts (2005)

Attended a grant writing workshop held at Grinnell College.

### Brain Bee (2004)

Judge for a state-wide, high-school level neuroscience competition.

### BrainU

Guest Lecture, University of Minnesota, Summer 2004

Gave a lecture on the basics of the motor system in a two-week neuroscience course for middle school teachers.

Carnegie Initiative on the Doctorate (2003-2004)

Student member of the University of Minnesota partner program in Neuroscience for the Carnegie Initiative on the Doctorate.

GRAD 8101: Teaching in Higher Education (3 credits) (2003)

Engaged in guided teaching practice, experienced and experimented with multiple learning strategies, reflected critically on what defines “good” teaching, prepared a teaching portfolio, planned a course, and syllabus.

GRAD 8102: Practicum for Future Faculty (3 credits) (2004)

Engaged in a mentored teaching opportunity at Macalaster College with Dr. Eric Wiertelak, analyzed issues of institutional fit, planned for job search, explored faculty diversity issues, and prepared for multiple aspects of the faculty role.

Biological Basis of Behavior Group (2002)

Student member of the Biological Basis of Behavior Group (BBBG) at the University of Minnesota. Helped organize a one-day retreat for the BBBG at the University of Minnesota.

Graduate Program in Neuroscience: Self-study (2002)

Student member on a committee which conducted an internal survey of the Graduate Program in Neuroscience at the University of Minnesota.

Graduate Program in Neuroscience: Annual Retreat (2001-present)

Helped organize the Annual Spring Retreat for the Graduate Program in Neuroscience at the University of Minnesota.

Member of the Society for Neuroscience (2000-present)