# *Elizabeth A. West* Department of Cell Biology and Neuroscience Rowan University School of Osteopathic Medicine, Stratford, NJ Tel: 856-566-6051; westniedringhaus@rowan.edu

Rowan University School of Osteopathic Medicine, Stratford, NJ	2019-present
Assistant Professor	
epartment of Cell Biology and Neuroscience	
EDUCATION AND TRAINING	
University of North Carolina, Chapel Hill, NC	2012-2019
Postdoctoral Fellow	
Department of Psychology and Neuroscience	
Georgetown University, Washington, DC	2012
Ph.D., Neuroscience	
Department of Pharmacology and Physiology	
University of Delaware, Newark, DE	2006
B.A., Biology and Psychology with an emphasis in Neuroscience	
Department of Psychology	
AstraZeneca Pharmaceuticals, Wilmington, DE	2003-2006
Behavioral Pharmacology Intern	
Department of Neuroscience	

#### EXTERNAL RESEARCH SUPPORT

#### Ongoing

**PI**, National Institute on Aging, R00 DA042934-05S2, "Neural circuitry mediating behavioral flexibility," ADRD Supplement. **Direct Cost:** \$177,998. 03/1/22-2/28/23.

**Major User,** National Institute of Health, S10 OD032124, "Andor Dragonfly 201 Spinning Disk Confocal Microscope System". **Direct Cost:** \$243,541. 04/15/22-04/14/23 (**PI**: Carone).

**PI**, National Institute on Drug Abuse, R00 DA042934-05S1, "β1 noradrenergic blockade in early withdrawal to reduce cocaine induced behavioral flexibility deficits". **Direct Cost:** \$33,036. 03/1/22-2/28/23. **Post-baccalaureate Scholar**: Leighelle Adrian

**PI**, National Institute on Aging, R21 AG072355, "Prefrontal neural modulation to restore cognitive deficits in an Alzheimer's disease rat model", **Direct Cost:** \$275,000. 02/15/22-01/31/24.

**PI**, Brain and Behavior Research Foundation, Young Investigator Grant, "Cortical GABAergic signaling to drug vs nondrug reward cues", **Direct Cost:** \$69,997. 01/15/22-01/14/24.

**PI**, National Institute on Drug Abuse, K99/R00 DA042934, "Neural circuitry mediating behavioral flexibility," **Direct Cost:** \$738,000. 9/1/17-2/28/23.

## Completed

**PI**, National Institute on Aging, R00DA04934-03S1, "Neural circuitry mediating behavioral flexibility" **Direct Cost:** \$222,084. ADRD Supplement. 03/01/20-02/28/21

**PI**, National Institute on Drug Abuse, F32 DA037733, "The role of accumbens neural activity and dopamine release in flexible behavior," **Direct Cost:** \$166,643 09/01/14-08/31/17

**PI**, National Institute on Drug Abuse, F31 DA026705, "The role of the orbitofrontal cortex in goaldirected behavior," **Direct Cost:** \$41,800. 02/01/11-01/31/12

## AWARDS AND HONORS

Brain and Behavior Research Foundation Young Investigator	2021
K99/R00 Pathway to Independence (NIDA)	2017-2019
American College of Neuropsychopharmacology (ACNP) Travel Award	2017
Postdoctoral Individual NRSA Fellowship (NIDA)	2014-2017
Predoctoral Individual NRSA Fellowship (NIDA)	2011-2012
Georgetown University MCGSO Travel Award	2011
University of Delaware Honors Award	2004
University of Delaware Honors Merit Scholarship	2002-2006

## **TEACHING EXPERIENCE**

Scientific Writing, Lecturer, Rowan University	2022-present
Neuropharmacology and Behavior, Lecturer, Rowan University	2022-present
Fundamentals of Neuroscience, Co-Course Director, Rowan University	2021-present
Neurophysiology, Lecturer, Rowan University	2021-present
Fundamentals of Neuroscience, Lecturer, Rowan University	2020-2021
Learning, Lecturer, University of North Carolina	2015
Drugs, Brain and Behavior, Co-Course Director, Georgetown University	2009
Neurobiology of Disease, Teaching Assistant, Georgetown University	2008-2010
Drugs, Brain and Behavior, Lecturer, Georgetown University	2007-2011
Introduction to Biology, Teaching Assistant, University of Delaware	2005

#### MENTORING EXPERIENCE

#### Mentees

*Post-doctoral Scholars* Dylan Crawford, Ph.D. (2023-present, co-mentored with Dr. Rachel Navarra) Claire Corbett, Ph.D. (2022-present)

#### Graduate Students

Benjamin Dunham (2023-present), Rowan University, GSBS Doctoral Student Brianna Linneman (2022-present), Rowan University, GSBS Doctoral Student Eleni Papadopoulos (2022), Rowan University, GSBS Rotation Student Corrine Gallagher (2021), Rowan University, GSBS Rotation Student T. Joseph Sloand (2021-present), Rowan University, GSBS Doctoral Student Bhumiben Patel (2020), Rowan University, GSBS Rotation Student Damini Kashyap (2020), Rowan University, GSBS Master's Student

Medical Students

Philip Kumpf (2021), Rowan University SOM, Summer Medical Research Fellowship Paul Kumpf (2021), Rowan University SOM, Summer Medical Research Fellowship

Undergraduate Students

Savana Coraggio (2022-present), Rowan University

Anjali Patel (2021-present), Rowan University

Taqdees Gohar (2020-2022), Rutgers University-Camden, MARC undergraduate student

- Heather Ortega (2017-2018), University of North Carolina, McNair Scholars Program, Peele Memorial Research Award Recipient, Undergraduate Honors Thesis student
- David McCue (2008-2011), Georgetown University, HHMI Research Scholar and Undergraduate Thesis Student
- Alice Murnen (2008-2010), Georgetown University, GUROP recipient and Undergraduate Thesis Student

#### Thesis Committee Member

Benjamin Dunham (2023-present), Rowan University GSBS, Mentor Brianna Linneman (2023-present), Rowan University GSBS, Mentor David Kahn (2022-present), Rowan University GSBS, Chair Timothy (Joey) Sloand (2021-present), Rowan University GSBS, Mentor Bhumiben Patel (2021-present), Rowan University GSBS, Chair Erin Wannen (2021-present), Rowan University GSBS, Member Arthur Reyes (2021-present), Rowan University GSBS, Member Haven Predale (2021-present), Rowan University GSBS, Member Metika Ngbokoli (2021-present), University of North Carolina at Chapel Hill, Member Nicole Hinds (2020-present), Rowan University GSBS, Chair John Tkaczynski (2020-present), Rowan University GSBS, Member

# ADMINISTRATIVE EXPERIENCE

Cell and Molecular Biology Ombudsperson, Rowan University GSBS	2022-present
Curriculum Committee, Rowan University GSBS	2022-present
Seminar Committee, Rowan University Cell Biology and Neuroscience, co-chair	2021-present
Admission and Recruitment Committee, Rowan University GSBS	2021-present
Neuroscience Curriculum Committee, Rowan University GSBS	2020-2021

#### **PROFESSIONAL SERVICES**

Journal Reviewer (Ad-hoc): Neuropharmacology, Addiction Neuroscience, Cerebral Cortex, Psychopharmacology, Plos One, Neurobiology of Stress, Biological Psychiatry, Neuron, Nature

*Grant Reviewer (Ad-hoc):* Georgetown University Pilot Grant Program, 2012 K-INBRE, External Reviewer, 2020 Willy Gepts Research Foundation, External Reviewer, 2021 National Institute of Health, Biobehavioral Regulation, Learning and Ethology Study Section, 2022

*Editor (Ad-hoc)* Brain Research Bulletin, Special Issue "Addiction III" (*guest editor*) Frontiers in Behavioral Neuroscience (*reviewing editor*)

## Seminars

University of North Carolina, Department of Psychology, 2013 University of North Carolina, Department of Psychology, 2015 University of Maryland, Maryland Psychiatric Research Center, 2017 Georgetown University, Department of Pharmacology, 2018 Uniformed Service University, Department of Psychiatry, 2018 Emory University, Department of Psychology, 2018 University of Pennsylvania, Department of Psychiatry, 2018 University of South Carolina, Department of Pharmacology, Physiology and Neuroscience, 2018 University of North Carolina, Department of Psychology, 2018 Virginia Commonwealth University, Department of Anatomy and Neurobiology, 2018 University of Alabama, Birmingham, Department of Neurobiology, 2018 University of Nebraska-Lincoln, Department of Psychology, 2018 University of California- Riverside, Department of Psychology, 2019 Rowan University, Department of Cell Biology and Neuroscience, 2019 Binghamton University, Department of Psychology, 2019 University of Delaware, Department of Psychology, 2020 Rowan University SOM, 25th Annual Research Day, 2021 University of Texas, El Paso, Department of Biology, 2022 American Psychiatric Association, Annual Meeting, New Orleans, LA, 2022 International Society for Behavioral Neuroscience, Annual Meeting, Glasgow, Scotland, 2022

# PUBLICATIONS

- [1] Niedringhaus M. West EA. Prelimbic cortex neural encoding dynamically tracks expected outcome value. *Physiology and Behavior*. 2022. Nov 1; 256: 113938. https://doi.org/10.1016/j.physbeh.2022.113938
- [2] West EA\*, Niedringhaus M\*, Ortega HK, Haake RM, Frohlich F, Carelli RM. Noninvasive brain stimulation rescues cocaine-induced prefrontal hypoactivity and restores flexible behavior. *Biological Psychiatry*. 2021. May 15; 89(10):1001-1011. dio:10.1016/j.biopsych.2020.12.02. Commentary by Vaughn Steel, A circuit-based approach to treating substance use disorders with noninvasive brain stimulation.
- [3] Haake RM, West EA, Wang X, Carelli RM. Drug-induced dysphoria is enhanced following prolonged cocaine abstinence and dynamically tracked by nucleus accumbens neurons. *Addiction Biology*. Jul; 24(4):631-640, 2019. doi: 10.1111/adb.12627.
- [4] West EA, Moschak TM, Carelli RM. Distinct functional microcircuits in the nucleus accumbens underlying goal-directed decision making. In: *Understanding Goal-Directed Decision Making: Computations and Circuits* (eds. Richard Morris, Aaron Bornstein, and Amitai Shenhav). Elseveir. 199-219, 2018.
- [5] Hurley SW, West EA, Carelli RM. Opposing roles of rapid dopamine signaling across the rostralcaudal axis of the nucleus accumbens shell in drug-induced negative affect. *Biological Psychiatry*. 82 (11): 839-846, 2017. PMCID: PMC5675798.
- [6] Forcelli PA, DesJardin JT, West EA, Holmes A, Elorette C, Wellman LL, Malkova L. Amygdala

inactivation attenuates defense responses evoked from the superior colliculus in non-human primates. *Soc Cogn Affect Neurosci.* 11 (12): 2009-2019, 2016. PMCID: PMC5141962.

- [7] West EA, Carelli RM. Nucleus accumbens core and shell differentially encode reward-associated cues after reward devaluation. *J. Neurosci.* 36(4):1128-39, 2016. PMCID: PMC4728721. Featured article with commentary by Theresa Eden, *Accumbens shell reflects reward devaluation*.
- [8] West EA, Saddoris MP, Kerfoot EC, Carelli RM. Prelimbic and Infralimbic cortical regions differentially encode cocaine-associated stimuli and cocaine-seeking before and following abstinence. *Eur J Neurosci.* 39(11):1891-902, 2014. PMCID: PMC4260329.
- [9] Carelli RM, West EA. When a good taste turns bad: Neural mechanisms underlying the emergence of negative affect and associated natural reward devaluation by cocaine. *Neuropharmacology*. 76: 360– 369, 2014. PMCID: PMC4160877
- [10] West EA, Forcelli PA, McCue DL, Malkova L. Differential effects of serotonin-specific and excitotoxic lesions of OFC on conditioned reinforcer devaluation and extinction in rats. *Behav Brain Res.* 246(1): 10-14, 2013. PMCID: PMC3633724.
- [11] Holmes AL, Forcelli PA, DesJardin JT, Decker AL, Teferra M, West EA, Malkova L, Gale K. Superior colliculus mediates cervical dystonia evoked by inhibition of the substantia nigra pars reticulata. J Neurosci. 32(38): 13326-32, 2012. PMCID: PMC3752088
- [12] West EA, Forcelli PA, Murnen AT, McCue DL, Gale K, Malkova L. Transient inactivation of basolateral amygdala during selective satiation disrupts reinforcer devaluation in rats. *Behav Neurosci*. 126(4):563-74, 2012. PMCID: PMC3432320
- [13] Forcelli PA\*, West EA\*, Murnen AT, Malkova L. Ventral pallidum mediates amygdala-evoked deficits in prepulse inhibition. *Behav Neurosci*. 126(2): 290-300, 2012. PMCID: PMC3314164
- [14] West EA, DesJardin JT, Gale K, Malkova L. Transient inactivation of orbitofrontal cortex disrupts reinforcer devaluation in macaques. *J Neurosci.* 31(42):15128-35, 2011. PMCID: PMC3224797
- [15] West EA, Forcelli PA, Murnen A, Gale K, Malkova L. A visual, position-independent instrumental reinforcer devaluation task for rats. *J Neurosci Methods*. 194(2): 297-304, 2011. PMCID: PMC3015218
- [16] Rosen JB, Donley MP, Gray D, West EA, Morgan MA, Schulkin J. Chronic corticosterone administration does not potentiate unconditioned freezing to the predator odor, trimethylthiazoline. *Behav Brain Res.* 194(1): 32-38, 2008
- [17] Rosen JB, West EA, Donley MP. Not all rat strains are equal: Differential unconditioned fear responses to the synthetic fox odor trimethylthiazoline in three outbred rat strains. *Behav Neurosci.* 120(2): 290-7, 2006.

# COMPLETE LIST OF PUBLICATIONS

#### NCBI:

https://www.ncbi.nlm.nih.gov/sites/myncbi/elizabeth.west.1/bibliography/41167518/public/?sort=date& direction=descending

#### Google Scholar:

https://scholar.google.com/citations?user=a6N3RbsAAAAJ&hl=en

# ABSTRACTS

[1] Niedringhaus M, Adrian LA, Sloand, TJ, West EA. Cocaine induced neurophysiological alterations in corticostriatal circuits to reward predictive cues following outcome devaluation. ACNP 61<sup>th</sup> Annual Meeting, 2022.

- [2] Sloand TJ, Niedringhaus M, West EA. Prelimbic cortex neural encoding in an Alzheimer's disease rat model during an outcome devaluation task. Society for Neuroscience Abstract, 2022.
- [3] Adrian LA, Sloand TJ, Ciacciarelli EJ, Niedringhaus M, West EA. Cocaine induced alterations in infralimbic cortex and dorsal lateral striatum neural encoding to reward predictive cues following outcome devaluation. Society for Neuroscience Abstract, 2022.
- [4] Ciacciarelli, EJ, Dunn, S.D, Niedringhaus, M., Sloand, TJ, Gohar, T, Adrian, LA, West EA. Nucleus reuniens to prelimbic cortex circuit is critical for performance on a delayed nonmatch to position task. Society for Neuroscience Abstract, 2022.
- [5] Niedringhaus M, West EA. Prelimbic cortex encoding of reward-predictive cues following devaluation. International Behavioral Neuroscience Society, 2022.
- [6] Sloand TJ, Niedringhaus M. West EA. Prelimbic cortex neural encoding in an Alzheimer's disease rat model during an outcome devaluation task. International Behavioral Neuroscience Society, 2022.
- [7] Niedringhaus M, Sloand TJ, West EA. Prelimbic cortex encoding of reward-predictive cues following outcome devaluation. ACNP 60<sup>th</sup> Annual Meeting, 2021.
- [8] Sloand TJ, Niedringhaus M, West EA. Medial prefrontal cortex neural encoding in an Alzheimer's disease rat model during an outcome devaluation task. Society for Neuroscience, 2021.
- [9] Dunn, SD, Ciacciarelli EJ, Gohar T, Kumpf PC, Kumpf PD, Sloand TJ, Niedringhaus M, West EA. Transient inactivation of the nucleus reuniens, but not dorsal hippocampus, impairs performance on a delayed nonmatch to position task. Society for Neuroscience, 2021
- [10] Gohar T, Dunn SD, West EA. The effects of sex in Fischer F344 rats on a delayed nonmatch to position task. Society for Neuroscience, 2021
- [11] Dunn, SD, Gohar T, Niedringhaus M, West EA. Nucleus reuniens inactivation impairs performance on a delayed nonmatch to position task. International Behavioral Neuroscience Society, 2021.
- [12] Gohar T, Dunn SD, West EA. The effects of sex in Fischer F344 rats on a delayed nonmatch to position task. International Behavioral Neuroscience Society, 2021.
- [13] West EA, Niedringhaus M, Sloand TJ, Carelli RM. Optogenetic stimulation of the prelimbic cortex to nucleus accumbens core pathway reverses cocaine-induced deficits in behavioral flexibility. ACNP 58th Annual Meeting. 2019.
- [14] West EA, Niedringhaus M, Sloand TJ, Carelli RM. Targeted optogenetic stimulation of the prelimbic cortex to nucleus accumbens core pathway restores behavioral flexibility following a history of cocaine exposure. Society for Neuroscience Abstract, 2019.
- [15] Haake RM, Niedringhaus M, Moschak TM, West EA, Frohlich F, Carelli RM. Effects of prolonged cocaine abstinence on neural activity in the prelimbic cortex and nucleus accumbens core. Society for Neuroscience Abstract, 2019.
- [16] West EA, Niedringhaus M, Ortega HK, Haake RM, Frohlich F, Carelli RM. High frequency transcranial alternating current stimulation restores cocaine-induced behavioral flexibility deficits and underlying altered neural activity in rats Carolina Neurostimulation Conference, 2019.
- [17] Haake RM, Niedringhaus M, Moschak TM, West EA, Frohlich F, Carelli RM. The effects of transcranial alternating current stimulation on heightened cocaine seeking following prolonged abstinence in rats. Caroline Neurostimulation Conference, 2019.
- [18] West E, Niedringhaus M, Ortega H, Haake R, Carelli R., A History of Cocaine Alters Prelimbic to Accumbens Neural Activity During Learning and Impairs Subsequent Behavioral Flexibility. ACNP 57th Annual Meeting. 2018.
- [19] West EA, Niedringhaus M, Carelli RM. Prelimbic-accumbal pathway encoding during learning predicts and is causally linked to behavioral flexibility. Society for Neuroscience Abstract, 2018.
- [20] West EA, Niedringhaus M, Haake RM, Ortega, HK Frohlich F, Carelli RM. The effects of transcranial alternating current stimulation on cocaine-induced deficits in behavioral flexibility in rats. Carolina Neurostimulation Conference, 2018.

- [21] Haake, RM, Niedringhaus M, Moschak, TM, West EA, Frohlich F, Carelli RM. The effects of transcranial alternating current stimulation on heightened cocaine seeking following prolonged abstinence in rats. Carolina Neurostimulation Conference, 2018.
- [22] West E, Niedringhaus M, Ortega H, Haake R, Carelli R. Performance in a Reinforcer Devaluation Task is Casually Linked to PrL to NAc Transmission Suggesting a Mechanism for Cocaine-Induced Impairments in Flexible Behavior. ACNP 56th Annual Meeting. 2017.
- [23] West EA, Niedringhaus M, Ortega HK, Haake RM, Carelli RM. A history of cocaine alters prelimbic neuronal activity during learning and impairs subsequent reinforcer devaluation. Society for Neuroscience Abstract, 607.01, 2017.
- [24] Haake RM, Niedringhaus M, West EA, Carelli RM. Effects of abstinence from cocaine selfadministration on basal cell firing dynamics in prelimbic cortex and nucleus accumbens core. Society for Neuroscience Abstract, 607.02, 2017.
- [25] West EA, Niedringhaus M., Carelli RM. Prelimbic neurons encode reward predictive cues following reward devaluation. Society for Neuroscience Abstract 837.01. 2016.
- [26] Niedringhaus M., West EA, Sackett DA, Carelli RM. Oscillatory dynamics in the prelimbic cortex form to a reward-predictive cue following learning. Society for Neuroscience Abstract 837.02. 2016.
- [27] Haake RM, West EA, Wang X, Thomas EL, Carelli RM. Enhancement of negative affect by abstinence from cocaine in a preclinical model. Society for Neuroscience Abstract, 349.09, 2016.
- [28] Hurley SW, West EA, Carelli RM. Optogenetics reveals that dopamine signaling in the rostral-caudal NAc shell differentially inhibits/facilitates cocaine-induced natural reward devaluation and negative affect in a preclinical model. Society for Neuroscience Abstract, 349.13. 2016.
- [29] Moschak TM, West EA, Haake RM, Wang X, Carelli RM. Neural activity in the anterior insula tracks cocaine-induced devaluation of natural rewards. Society for Neuroscience Abstract. 349.01, 2016.
- [30] West EA, Thomas EL, Carelli RM. Nucleus accumbens subregions (core vs shell) differentially encode reward-associated cues following reinforcer devaluation. Society for Neuroscience Abstract. 2015.
- [31] West EA, Thomas EL, Carelli RM. Dynamic shifts in nucleus accumbens neural encoding of rewardassociated cues following reinforcer devaluation. Society for Neuroscience Abstract. 2014.
- [32] Presker MA, West EA, Carelli RM. Effects of prolonged abstinence on cocaine-induced negative affect and the encoding of this information by nucleus accumbens neurons. Society for Neuroscience Abstract. 2014.
- [33] West EA, Green JL, Saddoris MP, Carelli RM. Effects of cocaine abstinence on nucleus accumbens cell firing during drug-induced devaluation of a natural reward. Society for Neuroscience Abstract. 295.09, 2012.
- [34] West E, Forcelli PA, McCue D, Gale K, Malkova L. Reinforcer devaluation is impaired by either excitotoxic or serotonin specific orbitofrontal cortex lesions in rats. Society for Neuroscience Abstract 511.23, 2011.
- [35] West E, Forcelli PA, Gale K. Neurobiology of Disease: Linking animal models to human disorders. Society for Neuroscience Abstract 25.04SA, 2011.
- [36] West EA, Forcelli PA, McCue D, Gale K, Malkova L. Orbitofrontal cortex and basolateral amygdala lesions impair reinforcer devaluation in rats. NYAS: Critical Contributions of the Orbitofrontal Cortex to Behavior, 2011.
- [37] Malkova L, West EA, DesJardin D, Gale K. Different contribution of orbital frontal cortex and basolateral amygdala to reinforcer devaluation. NYAS: Critical Contributions of the Orbitofrontal Cortex to Behavior, 2011.
- [38] West E, Forcelli, PA, Murnen A, McCue D, Gale K, and Malkova L. Basolateral amygdala inactivation impairs reinforcer devaluation in rats: Comparison with monkeys. Society for Neuroscience Abstract 707.12, 2010.

- [39] Murnen A, Forcelli PA, West E, Malkova L, and Gale K. Amygdala-ventral pallidum interactions in modulating prepulse inhibition (PPI). Society for Neuroscience Abstract 61.9, 2010.
- [40] Malkova L, West EA, DesJardin J, Gale K. Pharmacological inactivation of orbital frontal cortex impairs reinforcer devaluation in monkeys. Society for Neuroscience Abstract 707.11, 2010.
- [41] Ullrich L, Forcelli PA, West E, and Gale K. A course within a course: Learning to teach through teaching neuroscience. Society for Neuroscience Abstract 26.21, 2010.
- [42] West E, Forcelli P, Murnen A, Gale K, Malkova L. A new reinforcer devaluation task using visual cues in rodents. Society for Neuroscience Abstract 683.9, 2009.
- [43] Holmes AL, Decker A, West E, DesJardin J, Teferra M, Malkova L, Gale K. GABAergic nigrotectal projections mediate specific nigra-evoked motor abnormalities. Society for Neuroscience Abstract. 661.18, 2009.
- [44] Holmes AL, Teferra M, West E, Decker A, Malkova L, Gale K. GABAergic nigrotectal projections mediate nigra-evoked dystonia and dyskinesia. Society for Neuroscience Abstract. 318.7, 2008.
- [45] West E, Sutton EB, Evenden J. The effects of psychotomimetic drugs on prepulse inhibition in the guinea pig. Society for Neuroscience Abstract. 587.1, 2006.
- [46] Widzowski DV, West E, Sydserff SG. Sleep-inducing GABA<sub>A</sub>-positive modulators but not other sleep-inducing agents partially generalize to the zolpidem discriminative stimulus in rats. Society for Neuroscience Abstract. 768.8, 2006.
- [47] Rosen JB, West EA, Donley MP. Differences Across Rat Strains in Unconditioned Fear Predatory Odor, but Not in Avoidance or Odor-pair Shock Fear Conditioning. Society for Neuroscience Abstract, 416.12. 2005.
- [48] Rosen JB, West EA, Schulkin J. Corticosterone Poteniates Predator (fox) Odor Induced Unconditioned Fear. Society for Neuroscience Abstract. 772.7. 2004.