

## **CURRICULUM VITAE**

### **PERSONAL INFORMATION**

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**NAME:** Miranda N. Reed, Ph.D.

**CITIZENSHIP:** United States of America

**ADDRESS:**

Department of Psychology  
West Virginia University  
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websites: <http://community.wvu.edu/~mnr011/>

### **EDUCATION & EMPLOYMENT**

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2010-current Assistant Professor, West Virginia University  
Department of Psychology & Center for Neuroscience

2007-2010 Postdoctoral Fellowship in Neuroscience and Neurology, University of Minnesota  
Major Emphasis: Alzheimer's Disease  
Departments: Neuroscience, Neurology  
Mentors: Karen Hsiao Ashe & James Cleary

2007 Ph.D. in Experimental Psychology, Auburn University  
Major Emphasis: Behavioral Toxicology, Pharmacology  
Minor Emphasis: Biochemistry, Statistics  
Mentor: M. Christopher Newland  
Graduate minor degree in statistics conferred by the Department of Mathematics and Statistics

2005 Masters in Experimental Psychology, Auburn University

2002 B.A. in Psychology, Auburn University, Summa Cum Laude

### **AWARDS and HONORS**

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2006 Teaching Fellows (Department of Psychology, Auburn University)

2006 Society for the Advancement of Behavior Analysis (SABA) student presenter award. Association for Behavior Analysis Convention, Atlanta, GA.

2005 SABA student presenter award, Association for Behavior Analysis Convention, Chicago, IL.

2005 Student presenter award. International Neurotoxicology Conference, Research Triangle Park, NC.

2000 Phi Beta Kappa

1999 Undergraduate academic scholarship to University of North Alabama

## GRANTS

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### Current Extramural:

*Effects of Risk Factors on Tau-Mediated Memory Deficits*

Principal Investigator: Miranda N. Reed

Agency: Alzheimer's Association

The goal of this study is to compare the effects of diabetes on tau pathology in young and aged mice.

Dates: 8/01/2012 – 8/01/2014

Direct: \$88,631; Indirect: \$8,863

### Completed Extramural:

*Amyloid-Beta and Tau Interactions: The Importance of Timing*

Principal Investigator: Miranda N. Reed

Agency: NIH Ruth L. Kirschstein National Research Service Award (NRSA) for Individual Postdoctoral Fellows was awarded but declined in favor of Assistant Professor position at WVU

3/2009

*Comparison of Amyloid Beta Species*

Principal Investigator: Miranda N. Reed

Agency: NIH (T32 DA022616-02)

Dates: 09/01/2007-09/01/2009

Compare the neuronal dysfunction caused by different forms of soluble oligomeric amyloid beta (A $\beta$ ) from a range of sources when tested under similar *in vivo* behavioral conditions.

### Completed Intramural:

*The Role of Dendritic Spine in Alzheimer's Disease*

Principal Investigator: Miranda N. Reed

Agency: Eberly College of Arts and Sciences Mini-Grant Program

\$5,000

## GRANT REVIEWER

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2012: Alzheimer's Association, Ad hoc reviewer

2012: NSF – Division of Integrative Organismal Systems (IOS) – Neural Systems, March and October panels

2012: NIH – Cellular and Molecular Neurodegeneration, Early Career Reviewer, October panel

## AD HOC REVIEWER

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- Journal of Neurochemistry
- Learning & Memory
- Food and Chemical Toxicology
- Toxicology Letters
- Neurotoxicology
- Psychopharmacology
- Behavioural Brain Research

## **CURRENT RESEARCH INTERESTS**

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- Alzheimer's Disease
- Synaptic Correlates of Learning and Memory
- Behavioral Pharmacology
- Risk factors for Alzheimer's disease, such as aging and metabolic disorders

## **EMPLOYMENT HISTORY**

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### **RESEARCH POSITIONS**

- 2010 – Present      **West Virginia University**  
**Department of Psychology**  
**Assistant Professor**
- 2007- 2010          **University of Minnesota**  
**N. Bud Grossman Center for Research Memory and Care**  
**Department of Neurology**  
**Postdoctoral Associate**  
Supervisor: Karen Hsiao Ashe, M.D., Ph.D. & James P. Cleary, Ph.D.
- 2002- 2007          **Auburn University**  
**Behavioral Toxicology Laboratory**  
**Graduate Research Assistant**  
Supervisor: M. Christopher Newland, PhD
- 2003-2004          **Auburn University**  
**Anatomy, Physiology, and Pharmacology**  
**Graduate Research Assistant**  
Supervisor: Dean. D. Schwartz, PhD

### **TEACHING POSITIONS**

- 2012                  **Neurobiology of Disease: Graduate Level**  
Teacher of Record  
*West Virginia University*
- 2011                  **Physiological Psychology: Undergraduate Level**  
Teacher of Record  
*West Virginia University*
- 2011, 2013          **Mixed Models Statistics: Graduate Level**  
Teacher of Record  
*West Virginia University*
- 2011, 2013          **Survival Analysis Statistics: Graduate Level**  
Teacher of Record  
*West Virginia University*

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- 2011, 2013      **Nonparametric Statistics: Graduate Level**  
Teacher of Record  
*West Virginia University*
- 2010-2013      **Biological Foundations in Behavior: Undergraduate Level**  
Teacher of Record  
*West Virginia University*
- 2006, 2007      **Drugs & Behavior: Undergraduate Level**  
Teacher of Record  
*Auburn University*
- Experimental Statistics: Graduate Level**  
Graduate Teaching Assistant  
Supervisor: Dr. Alejandro Lazarte  
*Auburn University*
- 2003, 2004      **Behavioral Pharmacology: Graduate & Undergraduate Level**  
Graduate Teaching Assistant  
Supervisor: Dr. M. Christopher Newland  
*Auburn University*
- 2004              **Statistics in Social and Behavioral Science: Undergraduate Level**  
Graduate Teaching Assistant  
Supervisor: Dr. Steven Shapiro  
*Auburn University*
- 2004              **Introduction to Psychology: Undergraduate Level; 2 sections**  
Graduate Teaching Assistant  
Supervisor: Dr. Rebecca Peterson  
*Auburn University*
- 2003              **Introduction to Psychology: Undergraduate Level; 1 section**  
Graduate Teaching Assistant  
Supervisor: Dr. William Buskist  
*Auburn University*
- 2002, 2003      **Introduction to Psychology: Undergraduate Level; 1 section**  
Graduate Teaching Assistant  
Supervisor: Dr. William Buskist  
*Auburn University*
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## TRAINING WORKSHOPS ATTENDED

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1. "NIH Regional Seminars on Program Funding". Three-day seminar in Scottsdale, AZ, April, 2011.
2. "NSF Regional Grants Conference". Two-day workshop at Vanderbilt University, March, 2011.
3. "eCampus Boot Camp". One-day workshop at West Virginia University, August, 2010.
4. "Seminar for Academic Job Searches". Two-day workshop at the University of Minnesota, September 2009.
5. "Proteomics Workshop". Three-day workshop at the University of Minnesota Center for Mass Spectrometry and Proteomics, March, 2009.
6. "Writing Winning Grants". One-day workshop at the University of Minnesota, April, 2008.

## PEER-REVIEWED PAPERS

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1. **Reed, M.N.**, Hofmeister, J.J., Jungbauer, L., Welzel, A.T., Yu, C., Lesne, S., LaDu, M.J., Walsh, D.M., Ashe, K.H., & Cleary, J.P. (2011). Cognitive effects of cell-derived and synthetically-derived A $\beta$  oligomers. *Neurobiology of Aging*, *32*, 1784-94.
2. Klyubin, I., Wang, Q., **Reed, M.N.**, Irving, E.A., Upton, N., Hofmeister, J., Cleary, J.P., Anwyl, R., & Rowan, M.J. (2011). Protection against Abeta-mediated rapid disruption of synaptic plasticity and memory by Memantine. *Neurobiology of Aging*, *32*, 614-23.
3. Hoover, B.R.<sup>1</sup>, **Reed, M.N.**<sup>1</sup>, Su, J., Kotilinek, K., Penrod, R.D., Pitstick, R., Carlson, G.A., Lanier, L.M., Yuan, L., Ashe, K.H., & Liao, D. (2010). Tau mislocalization to dendritic spines mediates synaptic dysfunction independently of neurodegeneration. *Neuron*, *68*, 1-15.  
<sup>1</sup>Authors contributed equally.
4. **Reed, M.N.**, Kotilinek, L.A., & Ashe, K.H. (2010). Effect size of Morris water maze deficits in Tg2576 mice. *Behavioural Brain Research*, *212*, 115-120.
5. Heath, J.C., **Reed, M.N.**, Banna, K.M., Pesek, E.F., Cole, N., Li, J., & Newland, M.C. (2010). Dietary selenium protects against selected signs of methylmercury exposure and aging. *Neurotoxicology*, *31*, 169-179.
6. Newland, M.C., Paletz, E.M., & **Reed, M.N.** (2009). Lactational exposure to mercury in experimental models. *Neurotoxicology*, *30*, 161-163.
7. **Reed, M.N.** & Newland, M.C. (2009). Gestational methylmercury exposure selectively increases the sensitivity of operant behavior to cocaine. *Behavioral Neuroscience*, *123*, 408-417.
8. Newland, M.C., Paletz, E.M., & **Reed, M.N.** (2008). Methylmercury and nutrition: Adult effects of fetal exposure in experimental models. *Neurotoxicology*, *29*, 783-801.

9. **Reed, M.N.**, Banna, K.M., Donlin, W.D., & Newland, M.C. (2008). Effects of gestational exposure to methylmercury and dietary selenium on reinforcement efficacy in adulthood. *Neurotoxicology & Teratology*, *30*, 29-37.
10. **Reed, M.N.** & Newland, M.C. (2007). Prenatal methylmercury exposure increases responding under clocked and unclocked fixed interval schedules of reinforcement. *Neurotoxicology & Teratology*, *29*, 492-502.
11. **Reed, M.N.**, Paletz, E.M., & Newland, M.C. (2006). Gestational exposure to methylmercury and selenium: Effects of a spatial discrimination procedure in adulthood. *Neurotoxicology*, *27*, 721-732.
12. Newland, M.C., **Reed, M.N.**, LeBlanc, A., & Donlin, W.D. (2006). Brain and blood mercury and selenium after chronic and developmental exposure to methylmercury. *Neurotoxicology*, *27*, 710-720.
13. Day, J.D., **Reed, M.N.**, & Newland, M.C. (2005). Neuromotor deficits and mercury concentrations in rats exposed to methyl mercury and fish oil. *Neurotoxicology & Teratology*, *27*, 629-641.

#### **INVITED PRESENTATIONS**

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1. **Reed, M.N.** "Altered Reinforcer Efficacy: One Explanation for Perseverative Behavior?", Virginia Association for Behavior Analysis: James Madison University, April, 2011.
2. **Reed, M.N.** "The molecular basis of memory and cognitive dysfunction in Alzheimer's disease", West Virginia University: Seminars in Neuroscience, September 2010.
3. **Reed, M.N.** "Alzheimer's disease research at the University of Minnesota", Minneapolis College of Art and Design, March 2010.
4. **Reed, M.N.** "The toxicological underpinnings of Alzheimer's disease: A biochemical and behavioral assessment", West Virginia University, November 2009.
5. **Reed, M.N.** "Cognitive effects of cell-derived and synthetically-derived A $\beta$  oligomers", Symposium on Aging and Neurobiology of Disease, September 2009.
6. **Reed, M.N.** "Alzheimer's disease research at the University of Minnesota", Health Education Program for the Minneapolis Chapter of Hadassah, March 2009.
7. **Reed, M.N.** "Gestational methylmercury exposure selectively increases the sensitivity of operant behavior to cocaine", University of Minnesota, October 2007.

## ORAL PRESENTATIONS

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1. **Reed, M.N.**, Ashe, K.H., & Cleary, J.P. "Mouse models with short-term memory deficits: The use of a titrating delayed matching-to-position procedure", Association for Behavior Analysis International, May 2010.
2. **Reed, M.N.** "Tau: The importance of timing", The N. Bud Grossman Center for Memory Research and Care, University of Minnesota, November 2008.
3. **Reed, M.N.**, Cleary, J.P., LaDu, M., Walsh, D., Lesne, W., Welzel, A., Jungbauer, L., Hofmeister, J., & Ashe, K.H. "Cognitive effects of synthetic and neuron-derived soluble A $\beta$  oligomers", Society for Neuroscience, November 2007.
4. **Reed, M.N.** & Newland, M.C. "Clocks and dopamine: Drug effects on behavior under clocked and unclocked FI schedules", Association for Behavior Analysis, May 2007.
5. **Reed, M.N.** & Newland, M.C. "Effects of gestational methylmercury and selenium exposure on behavioral tasks", Association for Behavior Analysis, May 2007.
6. **Reed, M.N.** & Newland, M.C. "Effects of gestational methylmercury exposure on behavior under external stimulus control following drug challenges", Association for Behavior Analysis, March 2004.
7. **Reed, M.N.** & Newland, M.C. "The effects of cocaine on behavior controlled by internal and external stimuli for methylmercury exposed animals", Auburn University Psychology Research Festival, November 2004.
8. **Reed, M.N.** & Newland, M.C. "Selective sensitivity to cocaine in rats exposed to DHA and prenatally to methylmercury", Auburn University Psychology Research Festival, November 2002.

## POSTER PRESENTATIONS

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*#Current or past Undergraduate student co-author*

*\*Current or past Graduate student co-author*

1. Reed, M.N., *\*Tosto, D.E.*, *#Knowlan, K.M.*, & *#Grizzanti, J.M.* "Comparing Memory Deficits in Conventional and Novel Memory Tasks in rTg4510 Mice." Alzheimer's Association International Conference, July 2012.
2. *#LeNguyen, K.D.*, *\*Hunsberger, H.C.*, *#Kelly, C.*, *#Hotz, E.*, *#Povroznik, J.M.* & **Reed, M.N.** "Memory deficits in a novel location recognition task for TauP301L mice?" Summer Undergraduate Research Symposium, July 2012.  
**\*Awarded 1st place in the Summer Undergraduate Research Symposium Poster Session for Biological & Health Sciences.**
3. *\*Winser, M.*, *\*Tosto, D.E.*, *#Glover, T.L.*, *#Deweese, S.L.*, *#Knowlan, K.M.*, *#Grizzanti, J.M.* & **Reed, M.N.** "Memory deficits in a transgenic model of comorbid Alzheimer's disease and diabetes." Association for Behavior Analysis International, May 2012.

4. \*Tosto, D.E., #Glover, T.L., #Deweese, S.L., #Knowlan, K.M., #Grizzanti, J.M. & **Reed, M.N.** “Identifying a behavioral task sensitive to early spatial learning and memory deficits in a TauP301L transgenic mouse model.” Association for Behavior Analysis International, May 2012.
5. #Knowlan, K.M., #Grizzanti, J.M., \*Tosto, D.E., & **Reed, M.N.** “Hippocampal deficits on retention of contextual learning in fear conditioning of tauP301L mice.” West Virginia University Capstone Poster Session, April 2012.
6. \*Tosto, D.E., #Glover, T.L., #Deweese, S.L., #Knowlan, K.M., #Grizzanti, J.M. & **Reed, M.N.** Early hippocampal learning and memory deficits in a transgenic mouse model of Alzheimer’s disease. Van Liere and Health Science Center Research Day, March 2012. **\*Awarded 1st place in the Basic Science 2011-2012 category.**
7. \*Tosto, D.E., #Glover, T.L., #Deweese, S.L., #Knowlan, K.M., & **Reed, M.N.** “Can Inhibition of GABA reverse an NMDA-induced Deficit in Acquisition of Response Chains in FVB Mice?”, Southeastern Association for Behavior Analysis, October 2011.
8. #Kline, E.M., #Rairigh, J.R., #Ryan, L.L., & **Reed, M.N.** “Testing learning and memory in mice: Comparing background strains.” Summer Undergraduate Research Symposium, July 2011.
9. #Rairigh, J.R., #Kline, E.M., #Ryan, L.L., & **Reed, M.N.** “An assessment of response acquisition by FVB and 129S6 mice using an autoshaping training procedure.” Summer Undergraduate Research Symposium, July 2011.
10. **Reed, M.N.**, Hoover, B.R., Kotilinek, L., & Ashe, K.H. “The role of the dendritic spine in Alzheimer’s disease”, Winter Conference on Brain Research, January, 2011.
11. **Reed, M.N.** & Montgomery-Downs, H. “Behavioral Neuroscience at WVU”, Southeastern Association for Behavior Analysis, November 2010.
12. **Reed, M.N.**, Kotilinek, L.A, Ramsden, M.& Ashe, K.H. “The role of the postsynaptic density in tau pathology”, Society for Neuroscience, October 2009.
13. **Reed, M.N.**, Pesek, E.F., & Newland, M.C. “Gestational exposure to methylmercury and selenium: Effects on a spatial discrimination procedure in adulthood”, Southeastern Association for Behavior Analysis, October 2005.
14. **Reed, M.N.** & Newland, M.C. “Motor function and tissue levels in dams chronically exposed to methylmercury and selenium”, International Neurotoxicology Conference, September 2005.
15. **Reed, M.N.** & Newland, M.C. “Behavioral effects of cocaine & desipramine for rats gestationally exposed to methylmercury and selenium”, International Neurotoxicology Conference, September 2005.



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16. **Reed, M.N.** & Newland, M.C. “Effects of gestational methylmercury and continued selenium exposure on lever-pressing under a Mult FI 120 FIClock 120 following acute cocaine administration”, Southeastern Association for Behavior Analysis, October 2004.
17. **Reed, M.N.**, Donlin, W., Paletz, E., & Newland, M.C. “Effects of Desipramine on behavior under a fixed interval schedule in rats exposed to methylmercury and n-3 fatty acids during gestation”, Southeastern Association for Behavior Analysis, October 2003.
18. **Reed, M.N.** & Newland, M.C. “Effects of monoamine agonists on behavior under a fixed interval schedule in rats exposed to methylmercury and n-3 fatty acids during gestation”, Auburn University Graduate Student Research Festival, March 2003.
19. **Reed, M.N.**, Donlin, W., Paletz, E., Reile, P., Stallings, M.E., & Newland, M.C. “Behavior under a fixed interval schedule in rats exposed to methylmercury and n-3 fatty acid during gestation”, Southeastern Association for Behavior Analysis, November 2002.

## **REFERENCES**

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### **University of Minnesota**

Karen Hsiao Ashe, M.D., Ph.D.  
Professor, Department of Neurology and Neuroscience, University of Minnesota  
Edmund Wallace and Anne Marie Tulloch Chairs in Neurology and Neuroscience  
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### **Auburn University**

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