

# CATHERINE M. MEWBORN

## Curriculum Vitae

### Contact Information

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### Education

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Exp. 2019     *Doctor of Philosophy*, Psychology (Clinical), University of Georgia, Athens, Georgia  
                         APA Accredited, PCSAS Accredited

2016            *Master of Science*, Psychology (Clinical), University of Georgia, Athens, Georgia  
                         APA Accredited, PCSAS Accredited  
                         Thesis Committee Chair: L. Stephen Miller, Ph.D.  
                         Title: Retinal and serum lutein and zeaxanthin: Relation to white matter integrity in younger and older adults.

2013            *Bachelor of Arts*, Psychology, Wake Forest University, Winston-Salem, North Carolina  
                         Thesis Committee Chair: Janine Jennings, Ph.D.  
                         Title: The effects of nitrate consumption and cognitive training on cognition.

2013            *Bachelor of Arts*, Philosophy, Wake Forest University, Winston-Salem, North Carolina

### Awards and Honors

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#### *University of Georgia*

2016- *present*     Fellow, Paul D. Coverdell Franklin Foundation Neuroimaging Scholars Program  
                         Partial stipend; Yearly award of \$3,000 for fMRI research and \$1,000 for travel.

2016            Travel Award, Paul D. Coverdell Neuroimaging Frank Foundation Scholars Program, \$900

2016            Travel Award, University of Georgia Graduate School, \$575

2013 – 2015     Graduate School Assistantship  
                         Stipend for the 2013-2015 academic years awarded on a competitive basis

2013            Excellence in Graduate Recruitment Fund

#### *Wake Forest University*

2013            William C. Archie and Ruth M. Archie Award

2009 – 2013     Dean's List, eight semesters

2012            Thesis Completion Grant, Translational Science Center of Wake Forest University, \$2,000

2011            Phi Beta Kappa

2011            Psi Chi, National Psychology Honor Society

2010            Golden Key International Honour Society

2009 – 2013     William Louis Poteat Scholarship

## Peer-reviewed Publications

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### Published

1. Lindbergh, C.A., **Mewborn, C.**, Hammond, B.R., Renzi-Hammond, L.M., Curran-Celentano, J., & Miller, L.S. (2016). The relationship of lutein and zeaxanthin levels to neurocognitive functioning: An fMRI study. *Journal of the International Neuropsychological Society*, 22, 1-12. doi: 10.1017/S1355617716000850.
2. **Mewborn, C.**, Renzi, L.M., Hammond, B.R., & Miller, L.S. (2015). Critical flicker fusion predicts executive function in younger and older adults. *Archives of Clinical Neuropsychology*, 30(7), 605-610. doi: 10.1093/arclin/ac054.

### Under Review/Accepted

1. **Mewborn, C.M.**, Terry, D.P., Renzi-Hammond, L.M., Hammond, B.R., & Miller, L.S. Retinal and serum lutein and zeaxanthin: Relation to white matter integrity in younger and older adults. *Manuscript submitted for publication.*
2. **Mewborn, C.M.**, Lindbergh, C.A., & Miller, L.S. Cognitive interventions for older adults: A systematic review and meta-analysis of randomized-controlled trials. *Manuscript submitted for publication.*
3. Renzi-Hammond, L.M., Bovier, E.R., Fletcher, L.M., Miller, L.S., **Mewborn, C.M.**, Lindbergh, C.A., Baxter, J.H., & Hammond, B.R. Effects of a lutein/zeaxanthin intervention on the cognitive function of young healthy adults: A randomized, double-masked, placebo-controlled trial. *Manuscript submitted for publication.*
4. Renzi-Hammond, L.M., Hammond, B.R., Miller, L.S., Bello, M.O., Lindbergh, C.A., & **Mewborn, C.M.** Effects of lutein/zeaxanthin supplementation on the cognitive function of community dwelling older adults: A randomized, double-masked, placebo-controlled trial. *Manuscript submitted for publication.*

### In Preparation

1. **Mewborn, C.M.**, Lindbergh, C.A., Robinson, T.L., Gogniat, M.A., Renzi-Hammond, L.M., Hammond, B.R., & Miller, L.S. Relation of lutein and zeaxanthin to visual-spatial functioning in older adults: An fMRI study.

### Presentations

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\*indicates undergraduate student supervisee

### Colloquium and Conference Talks

1. **Mewborn, C.M.**, Lindbergh, C.A., & Miller, L.S. (Accepted). Cognitive interventions for older adults: A systematic review and meta-analysis of randomized controlled trials. To be presented at the International Neuropsychological Society's Annual Meeting, New Orleans, Louisiana.
2. **Mewborn, C.**, Terry, D.P., Lindbergh, C.A., Renzi-Hammond, L.M., Hammond, B.R., & Miller, L.S. (October, 2016). Retinal and serum lutein and zeaxanthin: Relation to white matter integrity in younger and older adults. To be presented at the National Academy of Neuropsychology's Annual Conference,

October 19-22, 2016, Seattle, Washington. Published Abstract: *Archives of Clinical Neuropsychology*, 31(6), 573. doi: 10.1093/arclin/acw042.06.

3. Lindbergh, C.A., Terry, D., **Mewborn, C.**, Renzi-Hammond, L.M., Hammond, B.R., & Miller, L.S. (October, 2016). Lutein and zeaxanthin supplementation improves neurocognitive function in older adults as measured using functional magnetic resonance imaging: A randomized controlled trial. To be presented at the National Academy of Neuropsychology's Annual Conference, October 19-22, 2016, Seattle, Washington. Published Abstract: *Archives of Clinical Neuropsychology*, 31(6), 574. doi: 10.1093/arclin/acw042.05.
4. **Mewborn, C.M.**, Lindbergh, C.A., \*Reynolds, J., Jean, K., Gogniat, M.A., Robinson, T.L., Renzi-Hammond, L.M., Hammond, B.R., & Miller, L.S. (October, 2016). Lutein and zeaxanthin supplementation to improve cognition and neural functioning: Preliminary results from a randomized, placebo-controlled trial. To be presented at the North Georgia Regional Annual Memory Meeting, October 14, 2016, Atlanta, Georgia.

### Poster Presentations

1. Gogniat, M., Robinson, T., **Mewborn, C.**, Dickens, J., & Miller, L.S. (Accepted). Relationship between BMI and white matter volume in older adults. To be presented at the International Neuropsychological Society's Annual Meeting, New Orleans, Louisiana.
2. **Mewborn, C.**, Puente, A.N., Faraco, C., Renzi, L.M., Hammond, B.R., & Miller, L.S. (February, 2016). Microstructural white matter integrity predicts performance on instrumental activities of daily living (IADLs) in older adults. Presented at the International Neuropsychological Society Annual Meeting, February 3-6, 2016. Boston, Massachusetts.
3. Lindbergh, C.A., Terry, D., **Mewborn, C.**, Bello, M., Bovier, E., Renzi, L., Hammond, B.R., & Miller L.S. (October, 2015). Lutein and zeaxanthin are related to neurobiological efficiency during cognitive performance: An fMRI study. Presented at the Society for Neuroscience Annual Meeting, October 17-21, 2015. Chicago, Illinois.
4. **Mewborn, C.**, Lindbergh, C.A., Dickens, J.M., Stapley, L., Sharma, S., Goldy, S., Bello, M., Renzi, L.M., Hammond, B.R., & Miller, L.S. (July, 2015). Cognitive functioning mediates the relationship between social functioning and activities of daily living in older adults. Presented at the Alzheimer's Association International Conference, July 18-23, 2015. Washington, D.C. Published Abstract: *Alzheimer's & Dementia*, 11(7), P712-P713. doi: 10.1016/j.jalz.2015.06.1581.
5. \*Dickens, J.M., **Mewborn, C.**, Lindbergh, C.A., Sharma, S., Stapley, L., Goldy, S., Renzi, L.M., Hammond, B.R., & Miller, L.S. (July, 2015). Executive function moderates the relationship between physical performance and functional independence in older adults. Presented at the Alzheimer's Association International Conference, July 18-23, 2015. Washington, D.C. Published Abstract: *Alzheimer's & Dementia*, 11(7), P445-446. doi: 10.1016/j.jalz.2015.06.442.
6. Lindbergh, C.A., Puente, A., MacKillop, J., Faraco, C., Brown, C., Terry, D., **Mewborn, C.**, & Miller, L.S. (July, 2015). APOE-ε4 allele status is associated with functional limitations in community-dwelling older adults. Presented at the Alzheimer's Association International Conference, July 18-23, 2015. Washington, D.C. Published Abstract: *Alzheimer's & Dementia*, 11(7), P659, doi: 10.1016/j.jalz.2015.06.970.

7. **Mewborn, C.**, Duda, B., Lindbergh, C.A., Terry, D.P., Puente, A.N., Bovier, E., Shon, D., Chu, K., Washington, T.D., Stapley, L., Hammond, B.R., Renzi, L.M., Miller, L.S. (November, 2014). Processing speed and critical flicker fusion as mediators of age and cognition. Presented at the National Academy of Neuropsychology's Annual Conference, November 12-15, 2014, Puerto Rico. Published Abstract: *Archives of Clinical Neuropsychology*, 29(6), 506-50. doi 10.1093/arclin/acu038.9.
8. Terry, D.P., Duda, B., **Mewborn, C.**, Lindberg, C.A., Bovier, E., Shon, D., Puente, A.N. Chu, K., Washington, T.D., Stapley, L., Hammond, R., Renzi, L., Miller, L.S. (November, 2014). Brain activity associated with verbal learning and recall in older adults and its relationship to lutein and zeaxanthin concentrations. Presented at the National Academy of Neuropsychology's Annual Conference, November 12-15, 2014, Puerto Rico. Published Abstract: *Archives of Clinical Neuropsychology*, 29(6), 506. doi: 10.1093/arclin/acu038.7.
9. Terry, D.P., Lindberg, C.A., Duda, B., **Mewborn, C.**, Shon, D., Bovier, E., Puente, A.N., Stapley, L., Chu, K., Washington, T.D., Renzi L., Hammond, R., Miller, L.S. (November, 2014). An fMRI investigation of visual judgment in older adults and its relationship with a measure of lutein and zeaxanthin. Presented at the National Academy of Neuropsychology's Annual Conference, November 12-15, 2014, Puerto Rico. Published Abstract: *Archives of Clinical Neuropsychology*, 29(6): 505-506. doi:10.1093/arclin/acu038.6
10. **Mewborn, C.** & Dagenbach, D. (September, 2012). The effect of cognitive depletion on mind wandering. Presented at the Wake Forest University Undergraduate Research Day, September 28, 2012, Winston-Salem, NC.

## Mentored Student Projects

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\*indicates undergraduate student supervisee

### Presentations

1. \*Jordan, K.D., **Mewborn, C.M.**, & Miller, L.S. (April, 2016). Personality in relation to cognitive abilities in a sample of older adults. Presented at 39<sup>th</sup> Annual Psi Chi Convention, University of Georgia, April 8, 2016, Athens, Georgia.
2. \*Dickens, J.M., **Mewborn, C.**, Lindbergh, C.A., Sharma, S., Stapley, L., Goldy, S., Bello, M., Renzi, L.M., Hammond, B.R., & Miller, L.S. (March, 2015). Executive function moderates relationship between mobility and functional independence in older adults. Presented at the Center for Undergraduate Research (CURO) Symposium, University of Georgia, March 30-31, 2015, Athens, Georgia.
3. \*Stapley, L., **Mewborn, C.**, & Miller, L.S. (March, 2014). The influence of neuroticism, openness, and conscientiousness on executive functioning in older adults. Presented at the Center for Undergraduate Research (CURO) Symposium, University of Georgia, March 31 – April 1, 2014, Athens, Georgia.

### Honors Theses

1. \*Dickens, J.M. (2015). The interaction of cardiovascular disease risk, age, and cognitive impairment in predicting physical and functional ability in older adults.

### Research Experiences

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2013 – present      Graduate Research Assistant

Neuropsychology & Memory Assessment Laboratory; Bio-Imaging Research Center (BIRC)

Department of Psychology, University of Georgia

Supervisor: L. Stephen Miller, Ph.D.

- Conduct neuropsychological testing for healthy young adults, health older adults, and older adults with mild cognitive impairment.
- Acquire, process, and analyze images across various neuroimaging modalities (structural MRI, fMRI, Diffusion Tensor MRI, and Resting State MRI).
- Primary research questions include neural correlates of cognitive performance and functional abilities, neural markers of nutritional and physical health status, and neural mechanisms of action for nutritional and cognitive interventions.

2012 – 2013

*Senior Honors Thesis Candidate*

Department of Psychology, Wake Forest University

Supervisor: Janine Jennings, Ph.D.

Title: The effects of nitrate consumption and cognitive training on cognition

- Awarded \$2000 grant from the Translational Science Center of Wake Forest University. Director: Daniel Kim-Shapiro, Ph.D
- Designed and conducted randomized, placebo-controlled trial of the effects of nitrate supplementation and a cognitive training paradigm on working memory, selective attention, and memory performance in younger adults.
- Defended results to department faculty and students.

2012

*Research Assistant*

Department of Psychiatry and Behavioral Medicine, Wake Forest School of Medicine

Supervisors: Jacquelyn Connell B.A., Gretchen Brenes, Ph.D.

Project: Cognitive Behavioral Therapy for late life Generalized Anxiety Disorder

- Aided in participant recruitment, data collection, and data entry.
- Aims of the study included evaluating the efficacy of Cognitive Behavioral Therapy delivered remotely via telephone to older adults diagnosed with Generalized Anxiety Disorder and living in rural areas without access to mental health care services.

2011 – 2012

*Undergraduate Research Assistant*

Department of Psychology, Wake Forest University

Supervisor: Dale Dagenbach, Ph.D.

Project: The effect of cognitive depletion on mind wandering

- Helped design and conduct experiment testing the effects of cognitive depletion on the frequency of mind wandering and accuracy in performance on a go/no go task of sustained attention and inhibition.
- Analyzed data and presented results at a local research conference.

Related skills: SPM 8, SPM 12, FSL, Freesurfer, Matlab, E-Prime, Qualtrics, SPSS, and Microsoft Office.

## **Clinical Experiences**

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2016 – present

*Pre-Intern Supervisor*

Regents' Center for Learning Disabilities, University of Georgia

Supervisor: Scott E. Miller, Ph.D.

- Train junior practicum students on neuropsychological test administration.

- Prepare didactic materials for training meetings.
- Observation and individual supervision meetings with junior practicum students
- Edit integrated reports written by junior practicum students.

2016 – present

*Graduate Student Clinician*

Regents' Center for Learning Disabilities, University of Georgia

Supervisor: Scott E. Miller, Ph.D.

- Neuropsychological assessment of adolescents and adults.
- Referral questions of specific learning disabilities, attention deficit hyperactivity disorder, developmental disabilities, cognitive problems, and/or psychiatric difficulties.
- Responsibilities include: test administration, scoring, interpretation of test results, and integrated report writing.
- Participate in diagnostic interviews and provision of feedback to clients

2015 – 2016

*Psychologist-in-Training*

Psychology Clinic, University of Georgia

Supervisor: Emily R. Mouilso, Ph.D.

- Weekly individual therapy and psychodiagnostic assessment with adults.
- Responsibilities: Comprehensive assessment and diagnostic interviewing, case conceptualization, treatment planning, treatment implementation, report and progress report writing.
- Primary theoretical orientation was cognitive-behavioral.

2015 – 2016

*Neuropsychology Extern*

Children's Healthcare of Atlanta, Department of Neuropsychology

Supervisors: David J. Marcus, Ph.D., ABPP-CN and Jaqueline Kiefel, Ph.D

- Neuropsychological assessment with children and adolescents.
- Referral questions of cognitive, academic, and/or psychiatric difficulties related to genetic disorders, medical disorders, neurodevelopmental disorders, and traumatic brain injury.
- Responsibilities: Diagnostic interviewing, assessment battery development, administration, scoring, and interpretation of test results, report writing, and provision of feedback to children and families.

2014 – 2015

*Graduate Student Clinician*

Memory Assessment Clinic, Psychology Clinic, University of Georgia

Supervisor: L. Stephen Miller, Ph.D.

- Neuropsychological assessment with adults, particularly older adults. Ancillary assessments with adults with substance use disorders.
- Referral questions of psychiatric, cognitive, and/or memory difficulties.
- Responsibilities: Diagnostic interviewing, assessment battery development, administration, scoring, and interpretation of test results, integrated report writing, provision of feedback to clients and their families, and consultation with neurologists and other healthcare providers.

2014

*Psychologist-in-Training*

Psychology Clinic, University of Georgia

Supervisor: Andrea M. Jones, Ph.D.

- Psychoeducational assessment with children and adolescents.
- Referral questions of specific learning disabilities, attention deficit hyperactivity disorder, cognitive problems, and/or psychiatric difficulties.
- Responsibilities: Diagnostic interviewing, assessment battery development, administration, scoring, and interpretation of test results, integrated report writing, and provision of feedback to parents and children.

2013 – 2014

*Graduate Student Clinician*

Regents' Center for Learning Disabilities, University of Georgia

Supervisor: Scott E. Miller, Ph.D.

- Neuropsychological assessment of adolescents and adults.
- Referral questions of specific learning disabilities, attention deficit hyperactivity disorder, cognitive problems, and/or psychiatric difficulties.
- Responsibilities: Administration, scoring, and interpretation of test results and integrated report writing.

### **Additional Training Experiences**

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2016

Seminar in Psychology: Clinical Supervision and Consultation, University of Georgia

Supervisor: Emily R. Mouilso, Ph.D.

- Plan and provide workshops to first year Clinical Psychology graduate students on topics such as therapy session planning and core elements of evidence-based practice.
- Consult with medical residency students to provide training on mental health topics, including mandated reporting requirements, risk assessment and safety planning, diagnosis, mental health treatment, and community referral options.
- Develop a comprehensive consultation report to provide to the Clinical Psychology faculty with recommendations for improving supervision of psychoeducational assessments in the Psychology Clinic, in line with current standards and best practices.

2015 – 2016

Psychology Clinic, University of Georgia

Supervisor: Emily R. Mouilso, Ph.D.

- Monthly didactic training on theory and implantation of cognitive-behavioral, mindfulness, dialectical behavioral therapy, short-term psychodynamic therapy, and motivational interviewing techniques, as well as non-specific therapeutic factors and professional development skills.

2015 – 2016

Children's Healthcare of Atlanta, Department of Neuropsychology

Supervisors: David J. Marcus, Ph.D., ABPP-CN and Jaqueline Kiefel, Ph.D

- Weekly didactic training on neuropsychological testing, neuroimaging, neuropsychological correlates of medical, genetic, neurodevelopmental disorders, and traumatic brain injuries, and professional development skills.

2014

Psychology Clinic, University of Georgia

Supervisor: Andrea M. Jones, Ph.D.

- Weekly didactic training on theory and implementation of cognitive-behavioral, mindfulness, and dialectical behavioral therapy techniques to address anxiety, depression, interpersonal conflicts, and trauma.

## Teaching Experiences

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- 2015                    *Teaching Assistant*, University of Georgia  
Instructor of Record: Trina Cyterski, Ph.D.  
PSYC 3980: Research Design in Psychology
- 2015                    *Guest Lecturer*, University of Georgia  
PSYC 3100: Introduction to Neuropsychology, Lecture: History of Neuropsychology  
PSYC 3230: Abnormal Psychology, Lecture: Neurocognitive Disorders

## Professional Activities

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### *Societal Affiliations*

- American Psychological Association (Student Member), 2013 – present
- National Academy of Neuropsychology (Student Member), 2013 – present
- Alzheimer’s Association International Society to Advance Alzheimer’s Research and Treatment (ISTAART; Student Member), 2015 - 2016

### *Service to the Field*

- Ad Hoc Reviewer – Aging, Neuropsychology, and Cognition
- Ad Hoc Reviewer – Current Psychology
- Ad Hoc Reviewer – Gerontology
- Ad Hoc Reviewer – Journal of the International Neuropsychological Society

### *Service to the Department of Psychology*

- Member, Diversity Committee, Clinical Psychology, University of Georgia, 2016 – present
- Member, Admissions Committee, Clinical Psychology, University of Georgia, 2013 – present
- Mentor Coordinator, UGA Psychology Mentoring Program, Department of Psychology, University of Georgia, 2014 – 2015
- Mentor, UGA Psychology Mentoring Program, Department of Psychology, University of Georgia, 2013 – 2015

## Press

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- UGA Today, November 18, 2015, UGA researchers develop visual test to quickly check brain function quality. <http://news.uga.edu/releases/article/visual-test-quickly-checks-brain-function-quality-1115/>
- ScienceDaily, November 19, 2015, Visual test to quickly check brain function quality developed by scientists. <https://www.sciencedaily.com/releases/2015/11/151119112421.htm>
- Medical Daily, November 22, 2015, New Cognitive Function Test May Be Able to Detect Early Signs of Alzheimer’s. <http://www.medicaldaily.com/new-cognitive-function-test-may-be-able-to-detect-early-signs-alzheimers-362600>
- Medscape, November 25, 2015, Flicker Test Can Measure Brain’s Processing Speed. <http://www.medscape.com/viewarticle/855074>