

## ERIKA M. NYHUS

Bowdoin College, Department of Psychology and Program in Neuroscience, Brunswick, ME 04011 | 207-798-4204 |  
enyhus@bowdoin.edu

### PROFESSIONAL APPOINTMENTS

Bowdoin College, Brunswick, ME  
**Assistant Professor** **2013-present**

Brown University, Providence, RI  
**Postdoctoral Research Associate** **2010-2013**

### EDUCATION

University of Colorado at Boulder, Boulder, CO  
**Ph.D. in Cognitive Science, Neuroscience, and Psychology** **2010**  
Dissertation: "Theta Oscillations in Top-down Control of Episodic Memory Retrieval"

University of Colorado at Boulder, Boulder, CO  
**M.A. in Psychology** **2006**  
Thesis: "Perceptual Processing in Recognition Memory"

University of California, Berkeley, Berkeley, CA  
**B.A. Honors in Psychology and Anthropology** **2003**  
Areas of Concentration: Psychology, Anthropology  
Honors Thesis: "Time Perception"  
Psi Chi Honors Society, Phi Beta Kappa, Golden Keys International Honours Society

### EXTRAMURAL GRANTS

NIH AREA, "Identifying the Role of Theta Oscillations in the Transient Network Dynamics Involved in Episodic Memory"  
\$298,841 total direct costs, 8/1/2018-7/31/2021  
Principal Investigator

National Science Foundation IUSE, "Level II Collaborative Proposal: Preparing Undergraduates for Research in STEM-related fields Using Electrophysiology (PURSUE)"  
2/1/2020-1/31/2025  
Participating Faculty

National Science Foundation IUSE, "Collaborative Proposal: Preparing Undergraduates for Research in STEM-related fields Using Electrophysiology (PURSUE)"  
9/15/2016-8/31/2019  
Participating Faculty

### PUBLICATIONS

Chrastil, E.R., Rice, C.\*, Goncalves, M. Moore, K.\*, Stern, C.E., **Nyhus, E.** (2021). Theta oscillations support active exploration in human spatial navigation. Manuscript submitted for publication.

Wynn, S.C., **Nyhus, E.**, & Jensen, O. (in press). Alpha modulation in younger and older adults during distracted encoding. *European Journal of Neuroscience*.

- Nyhus, E.,** Engel W.E.\*, Donatelli Pitfield\* T.\*, & Vakkur, I.\* (2020). Combining behavior and EEG to study the effects of mindfulness meditation on episodic memory. *Journal of Visualized Experiments*, 159, e61247.
- Nyhus, E.,** Engel W.E.\*, Donatelli Pitfield\* T.\*, & Vakkur, I.\* (2019). Increases in theta oscillatory activity during episodic memory retrieval following mindfulness meditation training. *Frontiers in Human Neuroscience*, 13, 311.
- Ross, R., Smolen, A., Curran, T., & **Nyhus, E.** (2018). MAO-A phenotype effects response sensitivity and the parietal old/new effect during recognition memory. *Frontiers in Human Neuroscience*, 12, 53.
- Nyhus, E.** (2018). Brain networks related to beta oscillatory activity during episodic memory retrieval. *Journal of Cognitive Neuroscience*, 30(2), 174-187.
- Medrano, P., **Nyhus, E.,** Smolen, A., Curran, T., & Ross, R. (2017). Individual differences in EEG correlates of recognition memory due to DAT polymorphisms. *Brain and Behavior*, 7(12), 1-16.
- Nyhus, E.,** & Curtis, N. (2016). Incorporating an ERP project into undergraduate instruction. *Journal of Undergraduate Neuroscience Education*, 14(2), A91-A96.
- Ross, R., Medrano, P., Boyle, K., Smolen, A., Curran, T., **Nyhus, E.** (2015). Genetic variation in the serotonin transporter gene influences the ERP old/new effect during recognition memory. *Neuropsychologia*, 78, 95-107.
- Nyhus, E.** & Badre, D. (2015). Memory Retrieval and the Functional Organization of Frontal Cortex. In D.R. Addis, M. Barense, A. Duarte (Eds.), *The Wiley Handbook on the Cognitive Neuroscience of Memory* (pp. 131-149). West Sussex, UK: John Wiley & Sons, Ltd.
- Frank, M. J., Gagne, C., **Nyhus, E.,** Masters, S., Wiecki, T.V., Cavanagh, J., & Badre, D. (2015). EEG and fMRI correlates of dynamic decision parameters during reinforcement learning. *Journal of Neuroscience*, 35(2), 485-494.
- Depue, B.E., Ketz, N., Mollison, M.V., **Nyhus, E.,** Banich, M.T., & Curran, T. (2013). ERPs and neural oscillations during volitional suppression of memory retrieval. *Journal of Cognitive Neuroscience*, 25, 1624-1633.
- Nyhus, E.** & Curran, T. (2012). Midazolam induced amnesia reduces memory for details and affects the ERP correlates of recollection and familiarity. *Journal of Cognitive Neuroscience*, 24, 416-427.
- Snyder, H. R., Hutchison, N., **Nyhus, E.,** Curran, T., Banich, M. T., O'Reilly, R. C., & Munakata, Y. (2010). Neural inhibition enables selection during language processing. *Proceedings of the National Academy of Sciences*, 107, 16483-16488.
- Nyhus, E.** & Curran, T. (2010). Functional role of gamma and theta oscillations in episodic memory. *Neuroscience and Biobehavioral Reviews*, 34, 1023-1035.
- Nyhus, E.** & Curran, T. (2009). Semantic and perceptual effects on recognition memory: Evidence from ERP. *Brain Research*, 1283, 102-114.
- Nyhus, E.** & Barceló, F. (2009). The Wisconsin Card Sorting Test and the cognitive assessment of prefrontal function. *Brain and Cognition*, 71, 437-451.
- Norman, K. A., Tepe, K., **Nyhus, E.,** & Curran, T. (2008). Event-related potential correlates of interference effects on recognition memory. *Psychonomic Bulletin and Review*, 15(1), 36-43.
- Barceló, F., Periañez, J., & **Nyhus, E.** (2008). An information theoretical approach to task-switching: Evidence from cognitive brain potentials in humans. *Frontiers in Human Neuroscience*, 1, 13.

## PRESENTATIONS

- Nyhus, E.** (2020, February). *Effects of Mindfulness Meditation on Long-term Memory*. Talk presented at the faculty seminar series, Bowdoin College.
- Patel, R.\*, Wieffering, H.\*, Fisher, H.\*, **Nyhus, E.** (2019, October). *Directed interactions during episodic memory*. Poster presented at the President's Summer Research Symposium, Bowdoin College.
- Patel, R.\*, Wieffering, H.\*, Fisher, H.\*, **Nyhus, E.** (2019, October). *Directed interactions during episodic memory*. Poster presented at the annual meeting of the Faculty for Undergraduate Neuroscience, Society for Neuroscience, Chicago.
- Rice, C.\*, Chrastil, E.R. Goncalves, M. Moore, K.\*, Stern, C.E., **Nyhus, E.** (2018, November). *Active and passive spatial learning and memory in human navigation*. Poster presented at the annual meeting of the Faculty for Undergraduate Neuroscience, Society for Neuroscience, San Diego.

- Chrastil, E.R., Rice, C.\*, Goncalves, M. Moore, K.\*, Stern, C.E., **Nyhus, E.** (2018, November). *Theta oscillations during active and passive decision making for spatial learning*. Nanosymposium presentation at the annual meeting of the Society for Neuroscience, San Diego.
- Nyhus, E.** (2018, October). *Rhythms of the Brain: Dynamic Interactions Between Brain Regions During Episodic Memory Retrieval*. Talk presented at the psychology program weekly colloquium, Middlebury College.
- Rice, C.\*, Chrastil, E.R. Goncalves, M. Moore, K.\*, Stern, C.E., **Nyhus, E.** (2018, October). *Active and passive spatial learning and memory in human navigation*. Poster presented at the President's Summer Research Symposium, Bowdoin College.
- Chrastil, E.R. Goncalves, M. Moore, K.\*, Stern, C.E., **Nyhus, E.** (2018, March). *Theta oscillations during active and passive decision making for spatial learning*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Boston.
- Nyhus, E.,** Engel, W. A.\*, Donatelli Pitfield, T.\* (2017, November). *Effects of mindfulness meditation on long-term memory*. Poster presented at the annual meeting of the Society for Neuroscience, Washington, DC.
- Nyhus, E.** (2016, October). *Rhythms of the Brain: Dynamic Interactions Between Brain Regions During Episodic Memory Retrieval*. Talk presented at the psychology program weekly colloquium, Tulane University.
- Nyhus, E.,** Engel, W. A.\*, Donatelli Pitfield, T.\* (2016, October). *Effects of mindfulness meditation on long-term memory*. Talk presented at the annual meeting of Mainely Data.
- Ross, R., Medrano, P., Smolen, A., Curran, T., **Nyhus, E.** (2016, April). *The role of genetic variations in dopamine transporter and D<sub>2</sub> receptor genes on ERP and oscillatory correlates of recognition memory*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York.
- Wieffering, H.\*,**Nyhus, E.** (2015, October). *Directed connectivity in the brain during memory retrieval*. Poster presented at the President's Science Symposium, Bowdoin College.
- MacDonald, J.\*, Moore, K.\*, Markant, J., **Nyhus, E.** (2015, October). *IOR distractor suppression increases attentional resources for attended stimuli and improves recognition memory*. Poster presented at the President's Science Symposium, Bowdoin College.
- Engel, W. A.\*, **Nyhus, E.** (2015, October). *Effects of mindfulness meditation on long-term memory*. Poster presented at the President's Science Symposium, Bowdoin College.
- MacDonald, J.\*, Moore, K.\*, Markant, J., **Nyhus, E.** (2015, October). *IOR distractor suppression increases attentional resources for attended stimuli and improves recognition memory*. Poster presented at the annual meeting of the Faculty for Undergraduate Neuroscience, Society for Neuroscience, Chicago.
- Engel, W. A.\*, **Nyhus, E.** (2015, October). *Effects of mindfulness meditation on long-term memory*. Poster presented at the annual meeting of the Faculty for Undergraduate Neuroscience, Society for Neuroscience, Chicago.
- Nyhus, E.,** Curtis, N. (2015, October). *Incorporating an ERP Project into Undergraduate Instruction*. Poster presented at the annual meeting of the Society for Neuroscience, Chicago.
- Nyhus, E.** (2015, October). *Rhythms of the Brain: Dynamic Interactions Between Brain Regions During Episodic Memory Retrieval*. Talk presented at the psychology program weekly colloquium, Bates College.
- Nyhus, E.** (2015, September). *Rhythms of the Brain: Dynamic Interactions Between Brain Regions During Episodic Memory Retrieval*. Talk presented at the faculty seminar series, Bowdoin College.
- Nyhus, E.** (2015, September). *Rhythms of the Brain: Dynamic Interactions Between Brain Regions During Episodic Memory Retrieval*. Talk presented at the psychology program weekly colloquium, Colby College.
- Nyhus, E.,** Andrews, L.\*, MacDonald, J.\*, Markant, J. (2015, May). *Selective attention and memory: Event-related potentials and the IOR effect*. Talk presented at the annual meeting of Mainely Data.
- Andrews, L.\*, MacDonald, J.\*, Markant, J., **Nyhus, E.** (2015, March). *Selective attention and memory: Event-related potentials and the IOR effect*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
- Andrews, L.\*, MacDonald, J.\*, Markant, J., **Nyhus, E.** (2014, November). *Selective attention and memory: Event-related potentials and the IOR effect*. Poster presented at the annual meeting of the Faculty for Undergraduate Neuroscience, Society for Neuroscience, Washington, DC.

- Medrano, P., **Nyhus, E.**, Curran, T., Ross, R. (2014, November). *The influence of dopamine polymorphisms on ERP amplitudes and reaction time during recognition memory*. Poster presented at the annual meeting of the Society for Neuroscience, Washington, DC.
- Nyhus, E.**, Badre, D. (2014, November). *Comparison of cardioballistic artifact removal methods for simultaneously recorded EEG and fMRI*. Poster presented at the annual meeting of the Society for Neuroscience, Washington, DC.
- Andrews, L.\* , MacDonald, J.\* , Markant, J., **Nyhus, E.** (2014, October). *Selective attention and memory: Event-related potentials and the IOR effect*. Poster presented at the President's Science Symposium, Bowdoin College.
- Nyhus, E.**, Gagne, C., Badre, D. (2014, June). *Brain networks related to beta oscillatory activity during episodic memory retrieval*. Poster presented at the annual meeting of the Organization for Human Brain Mapping, Hamburg, Germany.
- Nyhus, E.** (2014, June). *Brain networks related to beta oscillatory activity during episodic memory retrieval*. Talk presented at the psychology department weekly colloquium, University of Konstanz, Germany.
- Shih, P., **Nyhus, E.**, Masters, S., Duan, L.H., Badre, D. (2014, April). *EEG Evidence of Sequential Dynamics During Hierarchical Cognitive Control*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Boston.
- Frank, M. J., Gagne, C., Cavanagh, J., Masters, S., **Nyhus, E.**, Badre, D. (2013, November). *EEG and fMRI Correlates of Dynamic Decision Parameters During Reinforcement Learning*. Nanosymposium presentation at the annual meeting of the Society for Neuroscience, San Diego.
- Nyhus, E.**, Badre, D. (2013, June). *Brain networks related to theta oscillatory activity during episodic memory retrieval*. Poster presented at the Rhythmic Dynamics and Cognition conference, Boston.
- Nyhus, E.**, Badre, D. (2013, April). *Brain networks related to theta oscillatory activity during episodic memory retrieval*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
- Nyhus, E.** (2012, November). *Dynamic interactions between brain regions during episodic memory retrieval*. Talk presented at the cognitive program weekly colloquium, Wesleyan University.
- Nyhus, E.**, Worden, M.S., Badre, D. (2012, April). *Simultaneously recorded EEG and fMRI identifies brain networks related to visually-evoked gamma oscillatory activity*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Chicago.
- Nyhus, E.**, Curran, T. (2011, April). *Individual differences in executive function updating predict episodic retrieval*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
- Nyhus, E.**, Curran, T. (2011, January). *Theta oscillations in top-down control of memory retrieval*. Poster presented at the annual meeting of the center on Executive Function and Dysfunction, Boulder, CO.
- Nyhus, E.** (2011, February). *Theta oscillations in top-down control of episodic memory retrieval*. Talk presented at the cognitive program weekly colloquium, University of Massachusetts Amherst.
- Nyhus, E.**, Curran, T. (2010, April). *Theta oscillations in top-down control of source memory retrieval*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Montreal, Canada.
- Snyder, H., Hutchison, N., **Nyhus, E.**, Curran, T., Munakata, Y. (2009, July). *So many options: The roles of neural inhibition and abstract representations in selection*. Poster presented at the annual meeting of the Cognitive Science Society, Amsterdam, Netherlands.
- Nyhus, E.**, Curran, T. (2009, March). *Recollection revealed by its absence: Midazolam-induced amnesia reduces memory for details and the ERP correlate of recollection*. Talk presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
- Barceló, F., Periañez, J., **Nyhus, E.** (2008, September). *An information theoretical approach to task-switching: Evidence from cognitive brain potentials in humans*. Talk presented at the International Conference on Cognitive Neuroscience, Bodrum, Turkey.
- Nyhus, E.**, Dennis, S., Curran, T. (2008, September). *ERP indices of orthographic and normative frequency in recognition memory*. Poster presented at the Neuroscience of Memory: Methods and Concepts to Investigate

Our Internal Representation of the World Program of European Neuroscience Schools, Wales Institute of Cognitive Neuroscience Summer School, Bangor University, Bangor, Wales.

- Nyhus, E.** (2008, May). *Everything a modeler needs to know about EEG*. Talk presented at the Perceptual Expertise Network Meeting, Banff, Canada.
- Nyhus, E.,** Dennis, S., Curran, T. (2008, April). *ERP indices of orthographic and normative frequency in recognition memory*. Poster presented at the annual Institute for Cognitive Science Poster Session, Boulder, CO.
- Nyhus, E.,** Dennis, S., Curran, T. (2008, April). *ERP indices of orthographic and normative frequency in recognition memory*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
- Nyhus, E.,** Curran, T. (2008, January). *Insights from ERP and behavioral modeling on a recognition memory task*. Talk presented at the annual Context and Episodic Memory Symposium, Tampa, Florida.
- Nyhus, E.,** Curran, T. (2007, July). *Semantic and perceptual contributions to recognition memory*. Talk presented at the annual meeting of the Australian Society for Cognitive Science, Adelaide, Australia.
- Nyhus, E.,** Curran, T. (2007, May). *Perceptual processing in recognition memory: An ERP study*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York.
- Nyhus, E.,** Curran, T. (2007, April). *Perceptual processing in recognition memory: An ERP study*. Poster presented at the annual Institute for Cognitive Science Poster Session, Boulder, CO.
- Nyhus, E.,** Curran, T. (2006, April). *Early perceptual processing in recognition memory: An ERP study*. Poster presented at the annual Institute for Cognitive Science Poster Session, Boulder, CO.
- Nyhus, E.,** Curran, T. (2005, November). *Early perceptual processing in recognition memory: An ERP study*. Poster presented at the annual meeting of the Society for Neuroscience, Washington, DC.
- Periañez, J., **Nyhus, E.,** Barceló, F. (2005, September). *Context updating and task-switching: an inquiry into the functional value of the novelty P3 potential*. Poster presented at the annual meeting of the International Conference on Cognitive Neuroscience, Havana City, Cuba.
- Periañez, J., **Nyhus, E.,** Barceló, F. (2005, September). *Context updating in oddball and task-switching paradigms: frontal and parietal modulations of the endogenous P3 potential*. Poster presented at the annual meeting of the Society for Psychophysical Research, Lisbon, Portugal.
- Nyhus, E.** (2003, November). *The ten percent myth*. Poster presented at the annual meeting of the Society for Neuroscience, New Orleans.
- Edwards, E., Curtis, C., **Nyhus, E.,** De'Esposito, M., Knight, R.T. (2002, April). *Combined EEG and fMRI analysis of antisaccade task performance*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.

\* Denotes Bowdoin College student author

## TEACHING EXPERIENCE

Bowdoin College, Brunswick, ME

### **Instructor – “Research Design in Psychology”**

**Spring 2015**

Full responsibility for creating a syllabus, giving lectures, developing labs and homework, assignments, developing writing assignments, maintaining the course webpage, and holding office hours.

### **Instructor – “Data Analysis”**

**Spring 2014, 2016**

Full responsibility for creating a syllabus, giving lectures, developing labs and homework, assignments, writing exams, maintaining the course webpage, and holding office hours.

### **Instructor – “Cognitive Neuroscience”**

**Fall 2014, 2015, 2018,  
2020**

Full responsibility for creating a syllabus, giving lectures, developing homework,

assignments, writing exams, maintaining the course webpage, and holding office hours.

**Instructor – “Cognitive Neuroscience of Memory”**

Full responsibility for creating a syllabus, giving lectures, leading discussions, developing writing assignments, maintaining the course webpage, and holding office hours.

**Spring 2014, 2015**

**Fall 2015, 2018, 2020**

**Instructor – “Lab in Cognitive Neuroscience”**

Full responsibility for creating a syllabus, giving lectures, developing labs and homework, assignments, writing exams, maintaining the course webpage, and holding office hours.

**Fall 2013, 2014**

**Spring 2016, 2018, 2019,  
2020**

developing writing assignments, maintaining the course webpage, and holding office hours.

University of Colorado at Boulder, Boulder, CO

**Instructor – “Introduction to Cognitive Psychology”**

Full responsibility for creating a syllabus, giving lectures, developing homework, assignments, writing exams, maintaining the course webpage, and holding office hours.

**Spring 2009**

**Teaching Assistant – “Introduction to Cognitive Psychology”**

Guest lectured, held office hours, and graded all exams.

**Spring 2005**

**Teaching Assistant – “Sensation and Perception”**

Ran weekly lab practicum, held office hours, and graded all work, including lab reports, homework, and exams.

**Fall 2004**

#### TEACHING RELATED ACTIVITIES

Center for Learning and Teaching Faculty Fellows Program, Bowdoin College

Graduate Teacher Program Certificate in College Teaching, University of Colorado at Boulder

Awarded this certificate after completing requirements: Participation in 20 Graduate Teacher Program workshops, 20 hours of teacher training in psychology, teach for two semesters, video taped observation and evaluation by the Graduate Teacher Program, observation and evaluation by a faculty member in psychology, and a written teaching portfolio.

#### AWARDS AND HONORS

Beckman Scholars Program mentor	2017-2023
Summer Institute in Cognitive Neuroscience Fellowship, National Institute of Mental Health	2011
National Institute of Mental Health postdoctoral training grant, Brown University	2010 – 2011
Graduate School Dissertation Fellowship, University of Colorado at Boulder	2010
Institute of Cognitive Science Student Paper Award, University of Colorado at Boulder	2009
Sheryl R. Young Memorial Scholarship, University of Colorado at Boulder	2008 – 2009
National Science Foundation East Asia and Pacific Summer Institute Fellowship	2007
National Science Foundation Graduate Research Fellowship Honorable Mention	2005
Student Research Fund, University of Colorado at Boulder	2005 – 2010
University Fellowship, University of Colorado at Boulder	2005– 2008
Advanced Allocation Fellowship, University of Colorado at Boulder	2004

#### DEPARTMENTAL SERVICE

Mentored 5 honors, 14 independent study, and 11 summer research students, Bowdoin College

Advise pre-majors and majors (psychology and neuroscience), Bowdoin College  
Cognitive journal club coordinator, University of Colorado at Boulder  
Neuroscience journal club Coordinator, University of Colorado at Boulder  
Assisted undergraduate research day, University of Colorado at Boulder

#### CAMPUS SERVICE

Governance and Faculty Affairs, Bowdoin College  
Recording Committee, Bowdoin College  
Institutional Review Board (IRB), Bowdoin College  
Bowdoin Course Questionnaire working group, Bowdoin College  
Faculty mentor for the Bowdoin Science Experience, Bowdoin College

#### PROFESSIONAL SERVICE

Cognitive Neuroscience Society Trainee Professional Development Panel  
ADVANCE Rising Tide Center at the University of Maine, Advancing Women in Academia Conference Planning Committee  
Cognitive Neuroscience Society Student Association Executive Committee, Vice Chair  
Cognitive Neuroscience Society Student Association Executive Committee, Communications and Marketing Officer  
Association for Psychological Science Student Representative  
Senior Reviewer Association for Psychological Science Student Research Award  
Graduate Learning Opportunities Worldwide Representative, University of Colorado at Boulder  
Reviewer (ad hoc) for *Biological Psychology*, *Brain and Cognition*, *Brain Research*, *Brain Sciences*, *Cognitive, Affective, and Behavioral Neuroscience*, *European Journal of Neuroscience*, *Frontiers in Human Neuroscience*, *International Journal of Psychophysiology*, *Journal of Experimental Psychology: General*, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *Journal of Cognitive Neuroscience*, *Journal of Neuroscience*, *Journal of Undergraduate Neuroscience Education*, *Memory, Memory and Cognition*, *Neuroimage*, *Neuroscience and Biobehavioral Reviews*, *Neuropsychologia*, *Neuroscience*, *PLOS ONE*, *Scientific Reports*  
Reviewer (ad hoc) for NSF grant, United States-Israel Binational Science Foundation grant, Wellcome Trust Sir Henry Dale Fellowship

#### PROFESSIONAL MEMBERSHIPS

Organization for Human Brain Mapping  
Cognitive Neuroscience Society  
Society for Neuroscience  
Association for Psychological Science  
American Psychological Association