

University of Utah, Psychology Dept.

801-581-6977

matt.euler@psych.utah.edu**Education**

Ph.D., Psychology (Clinical)	University of New Mexico	2010
Clinical Internship	Southwest Consortium Predoctoral Psychology Internship	2010
M.S., Psychology	University of New Mexico	2007
B.A. Psychology, Philosophy	New Mexico State University	2003

Licensure

Utah Psychology License: 8474474-2501 2012-Present

Professional Positions

Assistant Professor, Psychology, University of Utah 2012-Present
Postdoctoral Fellowship, Adult Neuropsychology, Medical College of Wisconsin 2010-2012

Honors and Awards

2018 Recognition for Contributions in Supervising Honors Theses, University of Utah College of Social and Behavioral Sciences and Honors College

2017 Junior Faculty Research Leave Award, University of Utah College of Social and Behavioral Sciences

2012 Resident Scholar Award, Medical College of Wisconsin, Department of Neurology

2009 Quad-L Foundation Research Award, University of New Mexico, Department of Psychology

Peer-Reviewed Publications

Euler, M.J. (2018). Intelligence and uncertainty: Implications of hierarchical predictive processing for the neuroscience of cognitive ability. *Neuroscience and Biobehavioral Reviews*, *94*, 93-112.
<https://doi.org/10.1016/j.neubiorev.2018.08.013>

Euler, M.J., McKinney, T.L., Schryver, H.M., & Okabe, H. (2017). ERP correlates of the decision time-IQ relationship: The role of complexity in task- and brain-IQ effects. *Intelligence*, *65*, 1-10.
<https://doi.org/10.1016/j.intell.2017.08.003>

Wiltshire, T.J., **Euler, M.J.**, McKinney, T.L., & Butner, J.E., (2017). Changes in dimensionality and fractal scaling suggest soft-assembled dynamics in human EEG. *Frontiers in Physiology*, *8*:633.
<https://doi.org/10.3389/fphys.2017.00633>

Euler, M. J., Wiltshire, T., Niermeyer, M. A., & Butner, J. E. (2016). Working memory performance inversely predicts spontaneous delta and theta-band scaling relations. *Brain Research*, *1637*, 22-33. <http://dx.doi.org/10.1016/j.brainres.2016.02.008>

- Euler, M. J.**, Niermeyer, M. A., & Suchy, Y. (2016). Neurocognitive and neurophysiological correlates of motor planning during familiar and novel contexts. *Neuropsychology*, *30*(1), 109-119. <http://dx.doi.org/10.1037/neu0000219>
- Euler, M. J.**, Weisend, M. P., Jung, R. E., Thoma, R. J., & Yeo, R. A. (2015). Reliable activation to novel stimuli predicts higher fluid intelligence. *NeuroImage*, *114*, 311 – 319. <https://doi.org/10.1016/j.neuroimage.2015.03.078>
- Suchy, Y., **Euler, M. J.**, & Eastvold, A. (2014). Exaggerated reaction to novelty as a subclinical consequence of mild traumatic brain injury. *Brain Injury*, *28* (7). 972-979.
- Hanlon, F. M., Houck, J. M., Pyeatt, C. J., Lundy, S. L., **Euler, M. J.**, Weisend, M. P., Thoma, R. J., Bustillo, J. R., Miller, G. A., & Tesche, C. D. (2011). Bilateral hippocampal dysfunction in schizophrenia. *NeuroImage*, *58*, 1158-68.
- Euler, M.J.**, Thoma, R. J., Gangestad, S. W., Cañive, J. M., & Yeo, R. A. (2009). The impact of developmental instability on voxel-based morphometric analyses of neuroanatomical abnormalities in schizophrenia. *Schizophrenia Research*, *115*, 1-7.
- Parks, L. K., Hill, D. E., Thoma, R. J., **Euler, M.J.**, Lewine, J. D., & Yeo, R. A. (2009). Neural correlates of communication skill and symptom severity in autism: A voxel-based morphometry study. *Research in Autism Spectrum Disorders*, *3*, 444-454.
- Thoma, R. J., Monnig, M., Hanlon, F. M., Miller, G. A., Petropoulos, H., Mayer, A. R., Yeo, R. A., **Euler, M.J.**, Lysne, P., Moses, S. N., & Cañive, J. M. (2009). Hippocampus volume and episodic memory in schizophrenia. *Journal of the International Neuropsychological Society*, *15*, 182-195.
- Euler, M.J.**, Thoma, R. J., Parks, L., Gangestad, S. W., & Yeo, R. A. (2008). Fluctuating asymmetry and individual variation in regional gray and white matter volumes: A voxel based morphometry study. *Evolutionary Psychology*, *6*, 613-627.
- Thoma, R. J., Gangestad, S. W., **Euler, M.J.**, Lysne, P., Monnig, M., & Yeo, R. A. (2008). Developmental instability and markers of schizotypy in university students. *Evolutionary Psychology*, *6*, 586-594.

Book Chapters

- Euler, M.J.**, & McKinney, T.L. (*in press*). Theories of Intelligence: Historical and Contemporary Models and Implications for Intellectual Disability. *Handbook of Intellectual Disabilities – Integrating Theory, Research, and Practice*. Springer.
- Euler, M.J.**, Baillet, S., & Swanson, S. J. (2015). MEG in the Presurgical Epilepsy Evaluation. In *Handbook on the Neuropsychology of Epilepsy* (pp. 195-212). New York: Springer.
- Swanson, S. J., Binder, J. R., Raghavan, M., & **Euler, M.J.** (2015). Functional MRI in the Presurgical Epilepsy Evaluation. In *Handbook on the Neuropsychology of Epilepsy* (pp. 169-194). New York: Springer.

Conference Presentations (*indicates student co-author)

- Euler, M.J.** Uncertainty and intelligence: Relevance of predictive processing theories to the neuroscience of intelligence. (July 2018). Paper presented at the 19th Annual Meeting of the International Society for Intelligence Research.
- McKinney, T.L.*, Okabe, H., & **Euler, M.J.** The moderating role of uncertainty in fluid intelligence and neural activity. (February 2018). Paper presented at the 46th Annual Meeting of the International Neuropsychological Society. Washington D.C.
- Okabe, H.*, McKinney, T.L., Vaccariello, E., & **Euler, M.J.** EEG correlates of mental exertion during sustained reaction time performance. (February 2018). Paper presented at the 46th Annual Meeting of the International Neuropsychological Society. Washington D.C.
- Vaccariello, E.*, McKinney, T.L., Okabe, H., & **Euler, M.J.** Behavioral and EEG correlates of mental effort and mind-wandering. (February 2018). Poster presented at the 46th Annual Meeting of the International Neuropsychological Society. Washington D.C.
- Euler, M.J.**, Haier, R.J., Jung, R.E., Genc, E., & Colom, R., Ten years of the P-FIT model: Replications, refinements, and future directions. (July 2017). Symposium presented at the 17th annual meeting of the International Society for Intelligence Research. Montreal, Canada.
- Euler, M.J.** Clarifying the role of P-FIT in intelligence: key questions and emerging hypotheses. (July 2017). Paper presented at the 17th annual meeting of the International Society for Intelligence Research. Montreal, Canada.
- Halverson, M*., **Euler, M.**, Niermeyer, M.A., & Suchy, Y. The effect of novelty on motor control in healthy participants (February 2017). Poster presented at the 45th Annual Meeting of the International Neuropsychological Society. New Orleans, Louisiana.
- McKinney, T.L.*, Vaccariello, E., **Euler, M.J.**, & Suchy, Y.S., Medial frontal theta dynamics predict temperamental self-regulation but not executive response inhibition (February 2017). Poster presented at the 45th Annual Meeting of the International Neuropsychological Society. New Orleans, Louisiana.
- Wiltshire, T., **Euler, M.J.**, Butner, J.E., McKinney, T.L.*, & Munion, A.L*. Changes in dimensionality and fractal scaling as evidence for softly-assembled dynamics in human EEG (July 2016). Talk presented at the 26th Annual Meeting of the Society for Chaos Theory in Psychology & Life Sciences. Salt Lake City, UT.
- Munion, A.K.*, Butner, J., **Euler, M.J.**, & McKinney, T.H. ERP Analysis: Using a third order coupled oscillator model. (July 2016). Talk presented at the 26th Annual Meeting of the Society for Chaos Theory in Psychology & Life Sciences. Salt Lake City, UT.
- Euler, M.J.**, Halverson, M.*, McKinney, T*. Niermeyer, M.A.*, & Suchy, Y. Distinct Effects of Neural Activation and Consistency in Novelty Processing and Relations with IQ (February 2016). Poster presented at the 44th Annual Meeting of the International Neuropsychological Society. Boston, Massachusetts.

Ramanujam, K.*, **Euler, M.**, Himle, M.B. Spectral Analysis of Premonitory Urge Ratings During Habit Reversal Therapy in Children and Adolescents with Chronic Tic Disorders (2015, November). Poster presented at the 49th Annual Convention of the Association for Behavioral and Cognitive Therapies, Chicago, Illinois.

Euler, M.J., Schryver, H.M.*, Chon, D.*, & Vaccariello, E.* Effects of response alternatives on CNV amplitudes in the Hick paradigm: Relations to reaction time and fluid Intelligence (August 2015). Lightning talk presented at the International Society for Intelligence Research. Albuquerque, New Mexico.

Niermeyer, M.A.* , **Euler, M.J.**, Schryver, H.* , Chon, D.* , Reddy, V.R.* , Vaccariello. E.* , & Suchy, Y. Effects of task novelty on cognitive contributions to planning times and EEG activity during complex motor sequencing (February 2015). Poster presented at the 43rd Annual Meeting of the International Neuropsychological Society. Denver, Colorado.

Niermeyer, M.A.* , **Euler, M.J.**, Suchy, Y., Matyi, J.* , Schryver, H.* , Chon, D.* , Reddy, V.V.* , Gibbs. P.* , & Vaccariello. E., EEG correlates of individual differences in motor sequence planning and accuracy. (November 2014). Poster presented at Neuroscience 2014. Washington, D.C.

Matyi, J. M.* , **Euler, M. J.**, Weisend, M. P., Jung, R. E., & Yeo, R. A. Intellectual ability predicts faster peak theta responses following repeat stimulus exposure. (February 2014). Poster presented at the 2014 Utah Conference on Undergraduate research. Provo, Utah.

Sabsevitz, D. S., **Euler M.**, Stewart, C. C., Binder, J. R., & Swanson, S. J. Co-lateralization of Wada language and memory performance is associated with better verbal memory encoding in left temporal lobe epilepsy patients (February 2011). Paper presented at the 39th Annual Meeting of the International Neuropsychological Society. Boston, Massachusetts.

Pommy, J., Hampton, D., **Euler, M.**, Ruhl, D., Monnig, M., & Thoma, R. J. Voxel-based morphometry reveals specific regional gray matter reduction in alcohol-use disorders (November 2008). Poster presented at the Annual Biomedical Research Conference for Minority Students. Orlando, Florida.

Schendel, M., **Euler, M.**, Lysne, P., & Weisend, M. P. An ensemble averaging method for artifact rejection in noisy MEG Data (November 2008). Poster presented at Neuroscience 2008. Washington, D.C.

Weisend, M. P., Lysne, P., **Euler, M.**, Schendel, M., Edgar, J. C., Clark, V. P., Mosher, J. C., Ahlfors, S. P., & Hamalainen, M. S. Interpreting trial-to-trial variability in time-frequency analyses of MEG/EEG data (August 2008). Poster presented at the International Conference on Biomagnetism. Sapporo, Japan.

Euler, M., Yeo, R. A., Hamilton, D. A., Parks, L. K., Monnig, M., & Thoma, R. J. Neural correlates of developmental instability in healthy adults and patients with schizophrenia (February 2008). Poster presented at the 36th Meeting of the International Neuropsychological Society. Waikoloa, Hawaii.

Hanlon, F., **Euler, M.**, Lundy, S., Thoma, R. J., Weisend, M. P., Mayer, A. R., Bustillo, J. R., Miller, G. A., & Tesche, C. D. Assessment of lateralized hippocampal function in schizophrenia (March 2007). Poster presented at the International Congress on Schizophrenia Research. Colorado Springs, Colorado.

Parks, L., Hill, D., Thoma, R. J., **Euler, M.**, & Yeo, R. A. Neural correlates of communication and symptom severity in autism: A voxel-based morphometry study (February 2007). Poster presented at the 35th Meeting of the International Neuropsychological Society. Portland, Oregon.

Lundy, S., Hanlon, F. M., Shih, J., Hart, B., **Euler, M.**, Lysne, P., Jones, A., Bantz, R., & Thoma, R. J. Impaired memory function in schizophrenia and temporal lobe epilepsy (February 2007). Poster presented at the 35th Meeting of the International Neuropsychological Society. Portland, Oregon.

Lysne, P., Montano, R., Hanlon, F., Bantz, R., Lundy, S. L., **Euler, M.**, Weisend, M. P., Clark, V., Hart, B., & Thoma, R. J. Intra-run stability of the M50 auditory gating response in a paired-click paradigm (August 2006). Poster presented at the International Conference on Biomagnetism. Vancouver, British Columbia.

Grant Experience

Pending

National Institute of Aging Small Grant (R03): "Task-related EEG activation as a biomarker for early Alzheimer's disease."

(June 2018) PI: **Euler** Total Costs: \$305,000

Funded

University of Utah Funding Incentive Seed Grant: "A causal test of neural predictive coding in language comprehension: Insights from simultaneous electrophysiology and navigated transcranial magnetic stimulation."

(June 2018) PI: Payne; **Euler**: Co-Investigator Total Costs: \$20,000

University of Utah Research Instrumentation Fund: "Request to support the purchase of a High-Density, High-Impedance EEG System."

(January 2018) Co-PIs: **Euler**, Drew, Payne Total Costs: \$107,720

University of Utah Neuroscience Initiative Pilot Collaborative Project: "Examination of Neurobehavioral and Neurophysiological Mechanisms Underlying Habitual Short Sleep Duration."

(June 2015) PIs: Williams, Jones, Anderson; **Euler**: Co-Investigator Total Costs: \$49,966

Unfunded

University of Utah Neuroscience Initiative Pilot Seed Grant "EEG Biomarkers of Mental Exertion: Validation and Implications for Personalized Medicine."

(May 2018) PIs: **Euler**, Lohse, Davis Total Costs: \$49,900

National Institute of Aging Research Project Grant (R01): "Reaction to novelty as a marker for intermittent functional lapses among older adults"
 (June 2016, March 2017) PI, Suchy; Co-PI: **Euler** Total Costs: \$1,441,977

David Wechsler Early Career Grant for Innovative Work in Cognition: "Role of response uncertainty and neural synchrony in fluid intelligence: Implications for theory and clinical applications"
 (June 2016) PI: **Euler** Total Costs: \$25,000

University of Utah Funding Incentive Seed Grant: "Role of response uncertainty and neural synchrony in fluid intelligence: Implications for theory and clinical applications."
 (August 2015) PI: **Euler** Total Costs: \$32,160

University of Utah Funding Incentive Seed Grant: "Contribution of cortical oscillatory networks to anatomic and functional correlates of fluid intelligence."
 (February 2015) PI: **Euler** Total Costs: \$30,080

Epilepsy Foundation of America. Postdoctoral Research Training Fellowship: "Development of Magnetoencephalography for Language Mapping."
 (August 2011) PI: **Euler** Total Costs: \$35,000

Professional Affiliations

International Neuropsychological Society, Society for Clinical Neuropsychology (APA Div. 40)
 International Society for Intelligence Research, Utah Psychological Association

Invited Presentations, Guest Lectures, and Community Events

2018 Uncertainty, Prediction, and the Neuroscience of Intelligence: Behavioral and EEG Evidence. Invited Colloquium, Utah Valley University (to-be presented 10/10/18).

2017 *Introduction to Spectral and Time-Frequency Analysis*, Guest Lecture in CNS Methods Graduate Seminar, University of Utah

2016 *The Integration Challenge, Hierarchical Predictive Processing, and Cognitive Individual Differences*, Guest Lecture in Philosophy 3440, University of Utah

2016 *The Role of Uncertainty in Task-Ability Relationships: An Organizing Framework for EEG-Intelligence Research*, Guest Lecture in NEUSC 6010, University of Utah

2015 Discussion Panelist, Preview Screening of The PBS Series *The Brain with David Eagleman*, Hosted by the University of Utah Neuroscience Initiative

2012 *Magnetoencephalography Language Mapping*. Invited Presentation to Neurology Department Grand Rounds, Medical College of Wisconsin, Milwaukee, WI.

- 2012 *The Role of Neuropsychological Assessment in Diagnosis and Care Management of Dementia.* Invited Presentation to the Froedtert Memorial Lutheran Hospital Dementia Caregiver Support Group, Milwaukee, WI.
- 2011 *The Role of Neuropsychology in the Management of Mild Traumatic Brain Injury.* Invited Presentation to the Medical College of Wisconsin Physical Medicine and Rehabilitation Residents, Milwaukee, WI.

Teaching Experience

Undergraduate

Instructor, Brain and Behavior, University of Utah, Spring 2014, 2015, 2017
 Instructor, Brain and Behavior, University of New Mexico, Spring 2009

Graduate

Instructor, Clinical Assessment I, University of Utah, Fall 2015, 2016, 2017, 2018
 Co-Instructor, Psychological Assessment Practicum, University of Utah, Fall 2015, Spring 2016
 Instructor, Neuropsychological Assessment Pre-practicum, University of Utah, Fall 2012-2018
 Instructor, Neuropsychological Assessment Practicum, University of Utah, Spring 2013-2017
 Instructor, Neuropsychological Assessment Observation/Supervision, University of Utah, Fall 2012-Present

Student Research Supervised

Undergraduate Honors Theses/Senior Projects

- Matyi, J. (May 2014). Intelligence and neural activation: A model of the neural efficiency hypothesis and repetition suppression. University of Utah. **UROP-funded project.**
- Schryver, H. (May 2015). An investigation of the relation between intelligence, the Hick paradigm, and EEG Contingent Negative Variation. University of Utah. **UROP-funded project, Awarded 1st Place, Undergraduate Division: CSBS Student Research Day.**
- Reddy, V. (May 2015). Relations between individual alpha frequency, power, and long-range temporal correlations in resting EEG data. (Senior Project, Dept. of Biomedical Engineering) University of Utah. **UROP-funded project.**
- Lavelle, M. (May 2017). EEG correlates of the urge to blink: Implications for understanding premonitory urges in Tourette Syndrome. **UROP-funded project. Awarded Best Honors Thesis- 2017, University of Utah, Department of Psychology**

Graduate Student Committees (*indicates committee chair)

Master's Theses: Priya Ramanujam, Madison Niermeyer, Brian Curtis, Rosemary Ziemnik, Ty McKinney*

Preliminary Examinations: Emilie Franchow, David Lessard, Chloe Skidmore, Loran Hayes, Priya Ramanujam, Brendan Ostlund, Danielle Giangrosso (Inter-departmental Program in Neuroscience), Ty McKinney*

Dissertations: Sommer Thorgusen, Emilie Franchow, Loran Hayes, James Coleman, Andrea Wolfe-Clark, Priya Ramanujam, Madison Niermeyer, Rachel Hopman, Ruben Tinajero

Professional Service

Conferences

2015 Abstract reviewer for International Society for Intelligence Research
2018 Program Committee: International Neuropsychological Society Mid-year Meeting

Ad hoc reviewing: *Biological Psychiatry, Evolution and Human Behavior, Evolutionary Psychology, Intelligence, Mindfulness, Neurobiology of Aging, NeuroImage, Neuropsychologia, Neuropsychology, Scientific Reports, The Clinical Neuropsychologist*

Departmental Committees

2013-Present Dept. of Psychology Clinical Neuropsychology Program Coordinator
2015-Present Research Participation Committee
2012-2014 Graduate Committee
2012-Present Clinical Training Committee (CTC)
2012-2014 Developmental Neuroscience Faculty Search Committees
2016 Cognitive Neuroscience Faculty Search Committee

Clinical Experience

8/12-Present **Clinical Neuropsychology Vertical Team Supervisor**
Dept. of Psychology, University of Utah, Salt Lake City, UT.

7/10- 7/12 **Postdoctoral Fellowship in Adult Clinical Neuropsychology**
Medical College of Wisconsin, Dept. of Neurology, Milwaukee, WI.

7/09-7/10 **Southwest Consortium Predoctoral Psychology Internship**
New Mexico VA Health Care System and UNM Hospital, Albuquerque, NM.

7/08-4/09 **Practicum in Adult Neuropsychology**
New Mexico VA Health Care System, Albuquerque, NM.

8/06-6/08 **Practicum in Adult Neuropsychology**
Center for Neuropsychological Services, Dept. of Psychiatry, University of New Mexico, Albuquerque, NM.

8/05-5/09 **Practicum in Adult Psychotherapy**
Dept. of Psychology, University of New Mexico, Albuquerque, NM.