

EDUCATION

- Georgetown University. Washington, DC.** July, 2015 – Dec, 2021
Ph.D. Candidate, Interdisciplinary Program in Neuroscience
Laboratory on Social and Affective Neuroscience
Thesis Title: "Affective Processes in Human Empathy and Social Behavior"
Advisor: Abigail A. Marsh, Ph.D.
- The Pennsylvania State University. University Park, PA.** May, 2013
B.S., with distinction. Biology (Neuroscience Option)

RESEARCH EXPERIENCE

- National Institute of Mental Health. Bethesda, MD.** May, 2013 – May, 2015
Post-baccalaureate Research Fellow
Section on Neurobiology of Fear and Anxiety
PIs: Christian Grillon, Ph.D. & Monique Ernst, M.D., Ph.D.
- The Pennsylvania State University. University Park, PA.** September, 2012 – April, 2013
Research Assistant
The Addiction, Smoking and Health Laboratory
PI: Stephen Wilson, Ph.D.
- Columbia University Medical Center. New York, NY.** May, 2012 – July, 2012
Research Intern
Division of Movement Disorders
PIs: Roy Alcalay, M.D. & Elise Caccappolo, Ph.D.

PREPRINTS

- O'Connell, K.,** Walsh, M., Padgett, B., Connell, S. & Marsh, A. A. (2021). Modeling variation in empathic sensitivity using go/no-go social reinforcement learning. <https://psyarxiv.com/drcq6/>

PUBLICATIONS

- O'Connell, K.,** Marsh, A. A., Edwards, D. F., Dromerick, A. & Seydell-Greenwald, A. (2021). Emotion recognition impairments and social well-being following right-hemisphere stroke. *Neuropsychological Rehabilitation*. ePub ahead of print.
- Cardinale E. M., Reber J., **O'Connell, K.**, Turkeltaub, P. E., Tranel, D., Buchanan, T. W. & Marsh, A. A. (2021). Bilateral amygdala damage linked to impaired ability to predict others' fear but preserved moral judgements about causing others fear. *Proceedings of the Royal Society B: Biological Sciences*. 288(1943), 20202651.
- O'Connell, K.,** Berluti, K., Rhoads, S. A. & Marsh, A. A. (2021). Reduced social distancing early in the COVID-19 pandemic is associated with antisocial behaviors in an online United States sample. *PLoS One*. 16(1), e0244974.
- Berluti, K., **O'Connell, K.**, Rhoads, S. A., Brethel-Haurwitz, K. M., Cardinale, E. M., Robertson, E. L., Walitt, B., VanMeter, J.W. & Marsh, A. A. (2020). Reduced multi-voxel pattern similarity of vicarious neural pain responses in psychopathy. *Journal of Personality Disorders*. 34(5), 628-649.

Vekaria, K. M., **O'Connell, K.**, Rhoads, S. A., Brethel-Haurwitz, K. M., Cardinale, E. M., Robertson, E. L., Walitt, B., VanMeter, J.W. & Marsh, A. A. (2020). Activation in bed nucleus of the stria terminalis (BNST) corresponds to everyday helping. *Cortex*. 127, 67-77.

Rhoads, S. A., Cardinale, E. M., **O'Connell, K.**, Palmer, A. L., VanMeter, J. W., & Marsh, A. A. (2020). Mapping neural activity patterns to contextualized fearful facial expressions onto callous-unemotional (CU) traits: Intersubject representational similarity analysis reveals less variation among high-CU adolescents. *Personality Neuroscience*. 3(e12), 1–18.

O'Connell, K., Brethel-Haurwitz, K. M., Rhoads, S. A., Cardinale, E. M., Vekaria, K. M., Robertson, E. L., Walitt, B., VanMeter, J. W. & Marsh, A. A. (2019). Increased similarity of neural responses to experienced and empathic distress in costly altruism. *Scientific Reports*. 9(1), 10774.

Cardinale, E.M., **O'Connell, K.**, Robertson, E.L., Meena, L.B., Breeden, A.L., Lozier, L.M., VanMeter, J.W. & Marsh, A.A. (2019). Callous and uncaring traits are associated with reductions in amygdala volume among youths with varying levels of conduct problems. *Psychological Medicine*. 49(9), 1449-1458.

Torrise, S., Gorka, A., Gonzalez-Castillo, J., **O'Connell, K.**, Balderston, N., Grillon, C. & Ernst, M. (2018). Extended amygdala connectivity changes during sustained shock anticipation. *Translational Psychiatry*. 8(1), 33.

Brethel-Haurwitz, K.M., **O'Connell, K.**, Cardinale, E.M., Stoianova, M., Stoycos, S., Lozier, L., VanMeter, J.W. & Marsh, A.A. (2017). Amygdala-midbrain connectivity indicates a role for the mammalian parental care system in extraordinary altruism. *Proceedings of the Royal Society B: Biological Sciences*. 284(1865), 20171731.

Grillon C., Robinson, O.J., Krinsky, M., **O'Connell, K.**, Alvarez, G. & Ernst, M. (2017). Anxiety-Mediated Facilitation of Behavioral Inhibition: Threat Processing and Defensive Reactivity during a Go/No-Go Task. *Emotion*. 17(2), 259.

Grillon, C., Robinson, O.J., **O'Connell, K.**, Davis, A., Alvarez, G., Pine, D.S. & Ernst, M. (2017). Clinical anxiety promotes excessive response inhibition. *Psychological Medicine*. 47(3), 484-494.

Grillon, C., **O'Connell, K.**, Lieberman, L., Alvarez, G., Geraci, M., Pine, D. & Ernst, M. (2017). Distinct responses to predictable and unpredictable threat in anxiety pathologies: effect of panic attack. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. 2(7), 575-581.

Balderston, N.L., Quispe-Escudero, D., Hale, E., Davis, A., **O'Connell, K.**, Ersnt, M. & Grillon, C. (2016). Working memory maintenance is sufficient to reduce state anxiety. *Psychophysiology*. 53(11), 1660-1668.

Torrise, S., Robinson, O.J., **O'Connell, K.**, Davis, A., Balderston, N., Ernst, M. & Grillon, C. (2016). The neural basis of improved cognitive performance during anxiety by threat of shock. *Social Cognitive and Affective Neuroscience*. 11(11), 1677-1686.

Balderston, N.L., Vytal, K., **O'Connell, K.**, Torrise, S., Ernst, M. & Grillon, C. (2016). Anxiety patients show reduced working memory related DLPFC activation during safety and threat. *Depression and Anxiety*. 34(1), 25-36.

Torrise, S., **O'Connell, K.**, Davis, A., Reynolds, R., Balderston, N., Fudge, J., Grillon, C. & Ernst, M. (2015). Resting state connectivity of the bed nucleus of the stria terminalis at ultra-high field. *Human Brain Mapping*. 36(10), 4076-4088.

Ernst, M., Hale, E. & **O'Connell, K.** (2014). Response to commentaries regarding the Triadic Systems Model perspective. *Brain and Cognition*. 89, 122-126.

Link to full publication list: <https://www.ncbi.nlm.nih.gov/myncbi/katherine.o'connell.2/bibliography/public/>

CHAPTERS

O'Connell, K., Rhoads, S. A., Marsh, A.A. (in press). Fear: An Evolutionary Perspective on its Biological, Behavioral, and Communicative Features. In L. Al-Shawaf & T. Shackelford (Eds.). *The Oxford Handbook of Evolution and the Emotions*. Oxford University Press.

INVITED TALKS

O'Connell, K. (2021). Can acute pain tolerance be measured remotely? Experiences from an online trial conducted during COVID-19 social distancing. #WeAreAllInThisTogether Human Pain Seminar Series COVID-19 Journal Club

O'Connell, K. (2019). Neural Response Patterns to Experienced and Empathic Pain and Links to Altruism. Oral presentation at The Organization for Human Brain Mapping Annual Meeting. Rome, Italy.

O'Connell, K. (2015). Connectivity of the Human BNST: Implications for normal and maladaptive anxiety. Oral presentation at the Association for Clinical and Translational Science. Washington, DC.

O'Connell, K. (2014). Functional connectivity of the human BNST using ultra high field fMRI: A key node for anxiety and addiction. Oral presentation at the Maryland Neuroimaging Retreat. Baltimore, MD.

SCHOLARLY TALKS

O'Connell, K. (2020) Social and emotional deficits in healthy adults and after stroke. Virtual oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Student Seminar.

O'Connell, K. (2019) Social and emotional deficits in healthy adults and after stroke. Oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Student Seminar.

O'Connell, K. (2018) A brain's perspective on perceiving emotion. Three-Minute Thesis oral presentation for Georgetown-Howard Universities Center for Clinical and Translational Science.

O'Connell, K. (2018) Determinants of social behavior and well-being in neurologically healthy adults and stroke patients. Oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Neurolunch.

O'Connell, K. (2017) Affects' effects: Influences on human prosocial and antisocial behavior. Oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Neurolunch.

O'Connell, K. (2016). Amygdala Midbrain Connectivity in Altruism. Oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Neurolunch.

O'Connell, K. (2015). Tractography-based segmentation of the striatum in adolescents. Oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Neurolunch.

O'Connell, K. (2015). Brain connectivity in children with and without dyslexia. Oral presentation at the Georgetown Interdisciplinary Program in Neuroscience Retreat.

O'Connell, K. (2015). Neural Mechanisms Underlying Enhanced Sustained Attention during Anxiety. Oral presentation at the NIH Postbaccalaureate Seminar Series.

SCHOLARLY POSTER PRESENTATIONS

O'Connell, K., Marsh, A.A., Greenwald, A. (2021) Emotion recognition impairments and social well-being after right-hemisphere stroke. Virtual poster presentation at Social and Affective Neuroscience Society (SANS).

O'Connell, K., Marsh, A.A. (2021) Modeling Variation in Empathic Sensitivity Using Social Reinforcement Learning. Virtual poster presented at Society for Personality and Social Psychology (SPSP).

O'Connell, K., Greenwald, A., Marsh, A.A. (2020, cancelled) Emotion recognition accuracy and social outcomes after right-hemisphere stroke. Poster accepted for Social and Affective Neuroscience Society (SANS).

O'Connell, K., Greenwald, A., Marsh, A.A. (2019) Impaired emotion recognition accuracy after right-hemisphere stroke. Poster presentation at Association for Clinical and Translational Science (ACTS).

O'Connell, K., Padgett, B., Walsh, M., Marsh, A.A. (2018) Avoiding a stranger's loss: Modeling the influence of affect on socially-relevant behavior. Poster presentation at Social and Affective Neuroscience Society (SANS).

O'Connell, K., Padgett, B., Marsh, A.A. (2018) The influence of affect on behavior: Using computational modeling to improve the identification of clinically-relevant social deficits. Poster presented at the Association for Clinical and Translational Science (ACTS).

O'Connell, K., Brethel-Haurwitz, K., Cardinale, E., Vekaria, K., VanMeter, J., Marsh, A.A. (2017) Enhanced neural similarity of fear perception and fear experience in extraordinary altruists. Poster presented at Social and Affective Neuroscience Society (SANS).

O'Connell, K., Brethel-Haurwitz, K., Cardinale, E., Vekaria, K., VanMeter, J., Marsh, A.A. (2017). Enhanced representational similarity between experienced and observed distress in real-world altruists. Poster presented at Georgetown Medical Center Student Research Day.

O'Connell, K., Robinson, O.J., Ernst, M., Grillon, C. (2014). The impact of experimentally induced anxiety on a sustained attention task in anxious patients. Poster presented at the NIH Postbaccalaureate Poster Day.

O'Connell, K., Robinson, O.J., Hale, E., Ernst, M., Grillon, C. (2014). Negative attentional bias in anxious patients during a Stroop task under threat of shock. Poster presented at the Society for Affective Science Conference (SAS).

O'Connell, K., Robinson, O.J., Hale, E., Ernst, M., Grillon, C. (2014). A Stroop task in anxious individuals: Evidence for negative emotional bias interference. Poster presented at the NIMH Intramural Research Scientific Training Day.

O'Connell, K., Nichols, T., Wilson, S.J. (2013). Sex differences in the white matter of cigarette smokers: A diffusion tensor imaging study. Poster presented at the Pennsylvania State University Undergraduate Research Exhibition.

PRE-REGISTRATIONS

O'Connell, K., Marsh, A.A. (2021) Evaluating the impact of a social meditation training on acute pain experience. *Embargoed*.

O'Connell, K., Marsh, A.A. (2020) COVID-19 Response and Sub-types of Antisocial Behaviors. osf.io/4phx7

O'Connell, K.*, Rhoads, S.A.*, Marsh, A.A. (2019) Neural representations of social distance perception and social discounting in extraordinary, real-world altruists. *Embargoed*. *equal contribution

GRANTS

2019 - 2021 **F31 Ruth L. Kirschstein National Research Service Award (F31AT010423),**
NIH/NCCIH
“Evaluating the impact of a social meditation training on acute pain experience.”

2017 - 2019 **TL1 Translational Biomedical Science Scholar Award (TL1TR001431)**
Georgetown-Howard Universities Center for Clinical and Translational Science,
NIH/NCATS

2018, 2019 **Student Research Grant Program Award**, *Georgetown University Medical Center Graduate Student Organization (\$5,000/yr)*

TEACHING

2018-current **Guest Lecturer (NSCI-503) "Psychophysics"**, *Georgetown University*
 2017-current **Guest Lecturer (ICOS-325) "Psychopathy"**, *Georgetown University*
 Fall, 2018 **Neuroanatomy Teaching Assistant (ICOS-201)**, *Georgetown University*
 Fall, 2017 **Junior Course Director (ICOS-325)**, *Georgetown University*
 Fall, 2016 **Teaching Practicum Student (ICOS-325)**, *Georgetown University*
 Summer 2016 **Neuroanatomy Teaching Assistant**, *Georgetown University*

ADDITIONAL EXPERIENCE

May, 2020 **Student Grant Reviewer**, Student Research Grant Program Award, *Georgetown University Medical Center Graduate Student Organization*

AWARDS

2019 **Course Travel Award**, *Georgetown University Medical Center Graduate Student Organization*
 2018 **MRI Pilot Award**, *Georgetown University Center for Functional and Molecular Imaging*
 2015 **Training Fellowship Award (T32 NS041231)**, *Georgetown University Office of Biomedical Graduate Education*
 2013 - 2015 **Intramural Research Training Award**, *NIH/NIMH*
 2013 **Top 10% of Graduating Class**, *Pennsylvania State University (Eberly Col. Science)*
 2011, 2012 **Robert E. Galbrith Award**, *Pennsylvania State University*
 2010, 2011 **Big Ten Distinguished Scholar Award**, *Pennsylvania State University*

SKILLS

- Programming languages – Python, MATLAB, tcsh
- Neuroimaging analysis software – AFNI, FreeSurfer, FSL, The Decoding Toolbox
- Statistical analysis software – R, Stata
- Stimulus presentation software – Psychtoolbox, PsychoPy, EPrime, TOBII, Qualtrics
- Human psychophysiology – EMG startle, HRV, EDA, eye-tracking

LINKS

- Google Scholar: <https://scholar.google.com/citations?hl=en&user=Lnv6DCsAAAAJ>
- NCBI Bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/katherine.o'connell.2/bibliography/public/>
- Open Science Framework: <https://osf.io/erb3t/>
- GitHub: <https://github.com/kmo5128/>