

# Philip A. Spechler, Ph.D

*Postdoctoral Associate*

*Curriculum Vitae*

## **Contact Information**

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Laureate Institute for Brain Research  
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Tulsa, Oklahoma 74136-3326  
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## **Education**

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### **University of Vermont**

Ph.D. General/Experimental Psychology

August 2019

M.A. General/Experimental Psychology

January 2017

### **University of Pittsburgh**

B.A. History and Philosophy of Science

May 2010

## **Peer Reviewed Publications**

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1. **Spechler, P.A.**, Stewart, J. L., Kuplicki, R., the Tulsa 1000 Investigators & Paulus, M.P. (2020). Parsing Impulsivity in Individuals with Mood and Anxiety Disorders Who Use Cannabis. *Drug and Alcohol Dependence*. 217, 108289.
2. **Spechler, P.A.**, Stewart, J. L., Kuplicki, R., the Tulsa 1000 Investigators & Paulus, M.P. (2020). Attenuated reward activations associated with cannabis use in anxious/depressed individuals. *Translational Psychiatry*, 10(1), 1-13.
3. **Spechler, P.A.**, Chaarani, B., Orr, C., Albaugh, M.D., Fontaine, N.R, Higgins, S.T., ... Garavan, H. & the IMAGEN consortium (2020). Longitudinal Associations Between Amygdala Reactivity and Cannabis Use in a Large Sample of Adolescents. *Psychopharmacology*. 1-12.
4. Chaarani, B., Kan, KJ., Mackey, S., **Spechler, P.A.**, Potter, A., Banaschewski, T., Hohmann, S., ...& the IMAGEN Consortium (2020). Neural correlates of adolescent irritability and its comorbidity with psychiatric disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*.
5. Ivanov, I., Parvaz, M., Velthorst, E., Shiak, R., Sandin, S., Gan, G., **Spechler, P.A.**, Garavan, H. & the IMAGEN Consortium (2020). Substance use initiation, particularly alcohol, in drug naïve adolescents – possible predictors and consequences from a large cohort naturalistic study. *Journal of the American Academy of Child & Adolescent Psychiatry*.
6. Papanastasiou, E., Mouchlianitis, E., Joyce, D., McGuire, P., ... **Spechler, P.A.**, ..., & the IMAGEN consortium (2020). Examination of the neural basis of psychotic-like experiences in adolescence during processing of emotional faces. *Scientific Reports*. 10(1), 1-11.

7. Robert, G.H., Luo, Q., Yu, T., Chu, C., Ing, A., ... **Spechler, P.**, ..., Schumann, G., for the IMAGEN Consortium (2020). Association of Gray Matter and Personality Development With Increased Drunkenness Frequency During Adolescence. *JAMA Psychiatry*. 77 (4), 409-419.
8. Ing, A., Sämann, P.G., Chu, C., Tay, N., Biondo, F., ..., **Spechler, P.A.**, ... Schumann, G. & IMAGEN Consortium (2019). Identification of neurobehavioural symptom groups based on shared brain mechanisms. *Nature Human Behavior*, 1-13.
9. **Spechler, P.A.**, Chaarani, B., Orr, C., Mackey, S., Higgins, S.T., ... Garavan, H., Althoff, R.R. & the IMAGEN consortium (2019). Neuroimaging evidence for right orbitofrontal cortex differences in adolescents with emotional and behavioral dysregulation. *Journal of the American Academy of Child & Adolescent Psychiatry*. 58 (11), 1092-1103.
10. Albaugh, M., Hudziak, J.J., Orr, C., **Spechler, P.A.**, Chaarani, B., Mackey, S., Lepage, C. Fonov, V., Rioux, P., Evans, A., ... Garavan, H. & the IMAGEN Consortium (2019). Amygdalar reactivity is associated with prefrontal cortical thickness in a large population-based sample of adolescents. *PloS one*, 14(5), e0216152.
11. Albaugh, M., Hudziak, J.J., Ing, A., Chaarani, B., ... **Spechler, P.A.**, ... Garavan, H., & Potter, A. (2019). White matter microstructure is associated with hyperactive/inattentive symptomatology and polygenic risk for attention-deficit/hyperactivity disorder in a population-based sample of adolescents. *Neuropsychopharmacology*, 44, 1597–1603.
12. Chaarani, B., Kan, KJ, Mackey, S., **Spechler, P.A.**, Potter, A., Orr, C., D’Alberto, N., Hudson, K.E., ... Garavan, H., Althoff, R.R. & the IMAGEN consortium (2019). Low Smoking-exposure, the adolescent brain, and the modulating role of CHRNA5 polymorphisms. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. 4 (7), 672-679.
13. Orr, C., **Spechler, P.A.**, Cao, Z., Albaugh, M., Chaarani, B., Mackey, S., D’Souza, D., Allgaier, N., ... Garavan, H. & the IMAGEN consortium (2019). Grey Matter Volume Differences Associated with Extremely Low Levels of Cannabis Use in Adolescence. *Journal of Neuroscience*, 39(10), 1817-1827.
14. Mackey, S., Allgaier, N., Chaarani, B., **Spechler, P.A.**, Orr, C., ... Garavan, H. & the ENIGMA Addiction Working Group (2018). Mega-Analysis of Grey Matter Volume in Substance Dependence: General and Substance-Specific Regional Effects. *American Journal of Psychiatry*, 176 (2), 119-128.
15. Papanastasiou, E., Mouchlianitis, E., Joyce, D.W., ... **Spechler, P.**, ... for the IMAGEN Consortium (2018). Examination of the Neural Basis of Psychoticlike Experiences in Adolescence During Reward Processing. *JAMA psychiatry*. 75(10), 1043-1051.
16. **Spechler, P.A.**, Allgaier, N., Chaarani, B., Whelan, R., Orr, C., Albaugh, M., D’Alberto, N., Higgins, S.T., Hudson, K.E., Mackey, S., ... Garavan, H. & the IMAGEN consortium (2018). The Initiation of Cannabis Use in Adolescence is Predicted by Sex-Specific Psychosocial and Neurobiological Features. *European Journal of Neuroscience*. 50(3), 2346-2356.
17. Chaarani, B., **Spechler, P.A.\***, Ivanciu, A., Snowe, M., Nickerson, J.P., Higgins, S.T., & Garavan, H. (2018). Multimodal Neuroimaging Differences in Nicotine Abstinent Smokers Versus Satiated Smokers. *Nicotine & Tobacco Research*, 1, 9. \*Shared first author.

18. D'Alberto, N., Chaarani, B., Orr, C.A., **Spechler, P.A.**, Albaugh, M.D., Allgaier, N., ... Garavan, H. & the IMAGEN Consortium. (2018). Individual differences in stop-related activity are inflated by the adaptive algorithm in the stop signal task. *Human Brain Mapping*, 39(8), 3263-3276.
19. Dougherty, L., Schwartz, K. T., Kryza-Lacombe, M., Weisberg, J., **Spechler, P.A.**, & Wiggins, J. L. (2018). Preschool and School-Age Irritability Predict Reward-Related Brain Function. *Journal of the American Academy of Child & Adolescent Psychiatry*. 57(6), 407-417.
20. Albaugh, M.D., Ivanova, M., Chaarani, B., Orr, C., Allgaier, N., Althoff, R.R., D'Alberto, N., Hudson, K., Mackey, S., **Spechler, P.A.**, ...Alexandra S. Potter & the IMAGEN Consortium. (2018). Ventromedial prefrontal volume in adolescence predicts hyperactive/inattentive symptoms in adulthood. *Cerebral Cortex*. 29 (5), 1866-1874.
21. Bourque, J., **Spechler, P.A.**, Potvin, S., Whelan, R., Banaschewski, T., ... Conrod, P. & the IMAGEN Consortium. (2017). Functional neuroimaging predictors of self-reported psychotic symptoms in adolescents. *American Journal of Psychiatry*. 174(6), 566-575.
22. Albaugh, M.D., Orr, C., Chaarani, B., Althoff, R.R., Allgaier, N., D'Alberto, N., Hudson, K.E., **Spechler, P.A.**, ... Garavan, H. & the IMAGEN Consortium. (2017). Inattention and reaction time variability are linked to ventromedial prefrontal volume in adolescents. *Biological Psychiatry*. 82 (9), 660-668.
23. Wiggins, J. L., Schwartz, K. T., Kryza-Lacombe, M., **Spechler, P.A.**, Blankenship, S. L., & Dougherty, L. (2017). Neural reactivity to reward in school-age offspring of depressed mothers. *Journal of Affective Disorders*, 214, 81-88.
24. Mackey, S., Chaarani, B., Kan, K. J., **Spechler, P.A.**, Orr, C., Banaschewski, T., ... Garavan, H. & the IMAGEN Consortium (2016). Brain regions related to impulsivity mediate the effects of early adversity on antisocial behavior. *Biological Psychiatry*. 82 (4), 275-282
25. **Spechler, P.A.**, Orr, C. A., Chaarani, B., Kan, K.-J., Mackey, S., Morton, A., ... Garavan, H & IMAGEN Consortium. (2015). Cannabis use in early adolescence: Evidence of amygdala hypersensitivity to signals of threat. *Developmental Cognitive Neuroscience*, 16, 63–70.
26. Dougherty, L. R., Blankenship, S. L., **Spechler, P.A.**, Padmala, S., & Pessoa, L. (2015). An fMRI Pilot Study of Cognitive Reappraisal in Children: Divergent Effects on Brain and Behavior. *Journal of Psychopathology and Behavioral Assessment*, 37(4), 634-644.
27. Tracy, J.I., Osipowicz, K., **Spechler, P.**, Sharan, A., Skidmore, C., Doucet, G., & Sperling, M. (2014). Functional Connectivity Evidence of Cortico-Cortico Inhibition in Temporal Lobe Epilepsy. *Human Brain Mapping*. 35(1), 353-366.
28. Choi, J.M., Padmala, S., **Spechler, P.**, & Pessoa, L. (2013) Pervasive competition between threat and reward in the brain. *Social, Cognitive, and Affective Neuroscience*. 9 (6), 737-750.

## ***Manuscripts Under Review***

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1. **Spechler, P.A.**, Chaarani, B., Allgaier, N., ... Althoff, R.R., Garavan, H. & the IMAGEN consortium. Predicting Adolescent Cannabis Use Versus Binge Drinking Using Random Forests.
2. Hudson, K.E., **Spechler, P.A.**, Althoff, R.R., Albaugh, M.D., Chaarani, B., Orr, C., Allgaier, N., ... Garavan, H. & the IMAGEN consortium. Multi-modal predictors of internalizing disorders in adolescents: Assessing dimensional and categorical impairment.
3. Rueda-Delgado, L.M., Kruschwitz, J.D., Ruddy, K.L., Orr, C., Enz, N., Chaarani, B., **Spechler, P.A.**, ... Whelan, R. & the IMAGEN Consortium. Changes in the trajectory of functional brain networks associated with adolescent substance use.

## ***Manuscripts In Preparation***

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1. **Spechler, P.A.**, Kuplicki, R., Thompson, W.K., Paulus, M.P.P. Associations between prenatal cannabis exposure and striatal reward processing in childhood.

## ***Published Book Chapters***

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1. **Spechler, P.A.**, Ivanciu, A., & Garavan, H. (*in press*). Risk and Protective Factors for Substance Use and Addiction. *Textbook of Addiction Treatment: International Perspectives*. Springer.
2. Chaarani, B., **Spechler, P. A.**, Hudson, K. E., Foxe, J. J., Potter, A. S. and Garavan, H. (2017) The Neural Basis of Response Inhibition and Substance Abuse. *The Wiley Handbook of Cognitive Control* (ed T. Egner), John Wiley & Sons, Ltd, Chichester, UK.
3. **Spechler, P. A.**, Chaarani, B., Hudson, K. E., Potter, A., Foxe, J. J., & Garavan, H. (2016). Response inhibition and addiction medicine: from use to abstinence. *Progress in Brain Research*, 223, 143-164.

## ***Funding Support***

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### *Under Review:*

1K99 DA054210 (Spechler)  
NIH / NIDA

To be scored in May 2021

*Estimating the psychosocial and biobehavioral causes and effects of cannabis use on children in the ABCD study via causal inference methods*

This career development award will facilitate training in causal inference techniques to catalyze my independent line of research that seeks to identify the causal risk factors and consequences of cannabis use on brain and behavioral health.

Role: Principal Investigator

## ***Awards***

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1. CPDD Early Career Investigator Travel Award. (\$1000 to attend CPDD 2020). Monetary funds waived due to Covid-19 pandemic travel restrictions.

2. Larner College of Medicine, University of Vermont, Excellence in Research Award (Nominated 2018).
3. Larner College of Medicine, University of Vermont, Excellence in Research Award (Nominated 2016).
4. University of Vermont, Graduate Student Senate Mini Grant. (\$300 to attend OHBM 2016).
5. University of Vermont, Graduate Student Senate Mini Grant. (\$600 to attend OHBM 2015).

### ***Editorial Activity (Ad-Hoc Reviewer)***

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Addiction  
 Biological Psychiatry  
 Biological Psychiatry: Cognitive Neuroscience and NeuroImaging (BP:CNMI)  
 Drug and Alcohol Dependence  
 European Journal of Neuroscience  
 Journal of the American Academy of Child and Adolescent Psychiatry (JAACAP)  
 NeuroImage  
 Scientific Reports (Nature Research)

### ***Professional Training***

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Human Connectome Project (HCP) Course	August 2016
“Exploring the Human Connectome”	Harvard Medical School, Boston, MA

### ***Oral Presentations***

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1. **Spechler, P.A.** Predicting Cannabis Use in Adolescent Males and Females from Biobehavioral Data. Oral Presentation at the Neuroscience, Behavior and Health Research Forum for the Vermont Society for Neuroscience. 2017 January 21. Burlington, VT.
2. **Spechler, P.A.** Neural Correlates of Cue Reactivity in Smokers vs. Controls. Oral Presentation at the 26th Annual VCBH Retreat. 2016 August 18. Vergennes, VT

### ***Poster Presentations (Selection)***

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1. **Spechler, P.A.**, Stewart, J.L., Kuplicki, R., Paulus, M.P. Neurocognitive Differences in Anxious and Depressed Cannabis Users. Poster session presented at: CPDD 2020. Annual conference for the College on Problems of Drug Dependence; 2020 June 24; Hollywood, FL. Reassigned to a Virtual Conference due to Covid-19 Pandemic.
2. **Spechler, P.A.**, Chaarani, B., Allgaier, N., Mackey, S., Althoff, R., Garavan, H., and the IMAGEN consortium. Predicting Adolescent Cannabis Use from Binge Drinking Using Random Forests. Poster session presented at: OHBM 2019. Annual conference for the Organization for Human Brain Mapping; 2019 June 11; Rome, Italy.
3. **Spechler, P.A.**, Garavan, H., Ivanciu, A., Chaarani, B., Adise, S., Higgins, S. Characterizing the neurobiology of nicotine dependence using multimodal human neuroimaging. Poster Presented at: Society for Neuroscience; 2018 November 5; San Diego, CA. USA.

4. **Spechler, P.A.**, Hudson, K., Chaarani, B., Albaugh, M., Allgaier, N., D'Alberto, N., Mackey, S., Orr, C., Althoff, R., Garavan, H., and the IMAGEN consortium. Neurobiological antecedents of self-harm and suicidal behavior in adolescence. Poster session presented at: OHBM 2017. Annual conference for the Organization for Human Brain Mapping; 2017 June 28; Vancouver, Canada.
5. **Spechler, P.A.**, Chaarani, B., Ivanciu, A., Higgins, S.T., Garavan, H. Multimodal Neuroimaging Differences in Nicotine Abstinent vs. Satiated Smokers. Poster session presented at: SRNT 2017 Annual conference for the Society for Research on Nicotine and Tobacco; 2017 March 11; Florence, Italy.
6. **Spechler, P.A.**, Allgaier, A., Chaarani, B., Mackey, S., Hudson, K., Orr, K., D'Alberto, N., Whelan, R., Jollans, L., Watts, R., Althoff, R., Potter, A., Garavan, H., IMAGEN consortium. Predicting adolescent drug use from neuroimaging data yields sex- and drug-specific effects. Poster session presented at: OHBM 2016. Annual conference for the Organization for Human Brain Mapping; 2016 June 30; Geneva, Switzerland.
7. **Spechler, P.A.**, Allgaier, N., Jollans, L., Chaarani, B., Hudson, K.E., Mackey, S., Watts, R., Orr, C., Althoff, R., Whelan, R., Garavan, H. Predicting adolescent cannabis use in males and females from multimodal data. Poster presented at the National Institutes of Health (NIH) "Marijuana and Cannabinoids: A Neuroscience Research Summit". 2016 March 22; Bethesda, MD.
8. **Spechler, P.A.**, Jollans, E., Chaarani, B., Higgins, S.T., Garavan, H., Whelan, R. Predicting cigarette use in adolescence using multimodal brain and psychometric data. Poster session presented at: SRNT 2016., Annual conference for the Society for Research on Nicotine and Tobacco; 2016 March 03; Chicago, IL.
9. **Spechler, P.A.**, Orr, C., Higgins, S.T., Althoff, R.A., Chaarani, B., Kan, K.J., Mackey, S., Morton, A., Snowe, M.P., Garavan, H. Cannabis use in early adolescence is characterized by increased amygdala reactivity to threat signals. Poster session presented at: OHBM 2015. Annual conference for the Organization for Human Brain Mapping; 2015 June 13; Honolulu, HI.
10. **Spechler, P.**, Orr, C., Higgins, S.T., Althoff, R.A., Chaarani, B., Kan, K.J., Mackey, S., Morton, A., Snowe, M.P., Garavan, H. Structural brain differences in dysregulated youth. Poster session presented at: OHBM 2015., Annual conference for the Organization for Human Brain Mapping; 2015 June 13; Honolulu, HI.
11. **Spechler, P.**, Orr, C., Higgins, S.T., Althoff, R.A., Chaarani, B., Kan, K.J., Mackey, S., Morton, A., Snowe, M.P., Garavan, H. Predicting cannabis use in adolescence using multimodal brain and phenotype data. Poster session presented at: OHBM 2015., Annual conference for the Organization for Human Brain Mapping; 2015 June 16; Honolulu, HI.
12. **Spechler, P.**, Blankenship, S., Padmala, S., Pessoa, L., & Dougherty, L. The Neural Basis of Emotion Regulation in Young Children. Poster session presented at: Neuroscience 2013, Annual conference for the Society for Neuroscience; 2013 November 11; San Diego, CA.
13. Choi, J.M., Padmala, S., **Spechler, P.**, & Pessoa, L. Interactions between threat and anticipation of monetary gains and losses. Poster session presented at: Neuroscience 2013, Annual conference for the Society for Neuroscience; 2013 November 11; San Diego, CA.
14. Choi, J.M., Padmala, S., **Spechler, P.**, & Pessoa, L. Competition between reward and threat processing.

Poster session presented at: Neuroscience 2012, Annual conference for the Society for Neuroscience; 2012 October 15; New Orleans, LA.

15. **Spechler, P.**, Perkins, K. Cognitive performance as a function of bupropion and modafinil therapies for smoking cessation. Poster session presented at: 2010 Undergraduate psychology directed research symposium; 2010 April 7; Pittsburgh, PA.
16. **Spechler, P.**, Stevens, C., Cohen, K., Schunn, C. First Experiences in Teaching: Introduction to Cognitive Science (PSY0005). Poster session presented at: 2008 Undergraduate teaching assistant symposium. 2008 December. Pittsburgh, PA.

### ***Invited Lectures***

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1. **Spechler, P.** Introduction to Neuroimaging and Applications. Introduction to Biological Psychology. Johnson State University. Johnson, VT, USA. 31 October 2017
2. **Spechler, P.** Introduction to Neuroimaging and Applications. Learning & Memory. University of Vermont. Burlington, VT, USA. 19 July 2017
3. **Spechler, P.** Neuroimaging of Emotion. Introduction to Functional Neuroimaging. University of Vermont. Burlington, VT, USA. 15 February 2017
4. **Spechler, P.** Cannabis Use and Mental Health in Adolescence. Introduction to Psychopharmacology. University of Vermont. Burlington, VT, USA. 4 December 2015

### ***Teaching Activities***

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<b>Graduate Teaching Assistant</b> University of Vermont NSCI395C / PSYS 296E: Introduction to Functional Neuroimaging	January 2017 – May 2017
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<b>Faculty Teaching Assistant</b> University of Maryland Introduction to the Linux computing environment, AFNI, and FreeSurfer (informal)	June 2013 – August 2013
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<b>Undergraduate Teaching Assistant</b> University of Pittsburgh PSY0005- Introduction to Cognitive Science	August 2008 - December 2008
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### ***Mentoring Activities***

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#### **Neuroscience Major Research Mentoring: University of Vermont (NSCI 197/198)**

1. Iskandar Khan, September 2017 – December 2017, “Correlations between Stress, Self-Harm, and Suicide in Adolescents”.
2. Nick Fontaine, January 2017 – May 2017, “Implementing Quality Control Procedures for Large Scale Neuroimaging Study”.
3. Bailey Holt-Gosselin, January 2017 – May 2017, “Intra-Familial Risk Factors for Self-Harming Behaviors in Adolescence”.
4. Alexandra Ivanciu, January 2016 – May 2016, “Using fMRI to characterize smokers compared to controls”

## *Past Professional Positions*

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### **University of Maryland, College Park, MD**

#### **Department of Psychology**

Faculty Research Assistant  
Laboratory of Cognition and Emotion  
Lab Director: Luiz Pessoa, Ph.D

August 2011 – June 2014

### **Thomas Jefferson University, Philadelphia, PA**

#### **Department of Neurology**

Clinical Neuroimaging Assistant  
Cognitive Neuroimaging Lab  
Lab Director: Joseph Tracy, Ph.D

August 2010 – July 2011

## *Professional Organizations*

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Society for Neuroscience

2011 – 2013, 2018

Organization for Human Brain Mapping

2015 – 2017, 2019

## *Undergraduate Research Experience*

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### **Undergraduate Clinical Research Assistant**

January 2010 - May 2010

UPMC Western Psychiatric Institute and Clinic- Nicotine Research Lab

### **Undergraduate Research Assistant**

August 2006 - September 2008

UPMC Department of Emergency Medicine

## *Computing Skills*

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**General:** High performance computing clusters, linux/mac OS.

**Programming Languages:** Python (preferred), bash.

**Data:** Python, R, MATLAB, SPSS, Mplus.

**Version Control:** Git.

**Neuroimaging:** AFNI, SPM, FreeSurfer, FSL, HCP pipelines.

**Experimental Design:** Presentation, E-Prime.

**Other:** HTML, markdown.

### **Personal website:**

<https://philipspechler.github.io/>

## *References*

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1. Hugh Garavan, Ph.D ([hgaravan@uvm.edu](mailto:hgaravan@uvm.edu))  
Professor of Psychiatry  
Professor of Psychological Science  
University of Vermont



2. Martin Paulus, MD ([mpaulus@laureateinstitute.org](mailto:mpaulus@laureateinstitute.org))  
President and Scientific Director  
Laureate Institute for Brain Research  
Tulsa, OK. USA
3. Robert Althoff, M.D. Ph.D ([ralthoff@uvm.edu](mailto:ralthoff@uvm.edu))  
Associate Professor of Psychiatry  
Associate Professor of Pediatrics  
Associate Professor of Psychological Science  
University of Vermont