

**BIOGRAPHICAL SKETCH**

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NAME: Antonia Kaczurkin

eRA COMMONS USER NAME (credential, e.g., agency login): ANTONIAK

POSITION TITLE: Assistant Professor

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Arizona	B.S.	05/2008	Psychology
University of Minnesota	M.A. & Ph.D.	08/2014	Clinical psychology
University of Pennsylvania	Postdoctoral	08/2019	Clinical neuroscience

**A. Personal Statement**

My program of research focuses on investigating the neurobiological mechanisms underlying internalizing disorders including anxiety and depression. My specific research interests include: 1) investigating abnormal brain anatomy and functioning in anxiety and depressive disorders, 2) understanding the neurobiological heterogeneity that exists within internalizing symptoms, and 3) applying knowledge about these neurobiological differences to improve treatment outcomes. As a graduate student at the University of Minnesota, my work focused on biomarkers of anxiety disorders. I was successful in obtaining competitive funding including a Diversity of Views and Experiences Fellowship, an Eva O. Miller Fellowship, and a three-year National Science Foundation (NSF) Graduate Research Fellowship. During graduate school, I published several manuscripts on psychophysiological markers of anxiety symptoms using methods such as electroencephalography (EEG), fear-potentiated startle, and skin conductance. Additionally, my dissertation examined brain functioning in veterans with posttraumatic stress disorder using functional MRI, which was subsequently published in the *American Journal of Psychiatry*. As a postdoctoral researcher at the University of Pennsylvania, I was funded by the Postdoctoral Fellowship for Academic Diversity Program awarded by the Provost for Research to conduct treatment-related research at the Center for the Treatment and Study of Anxiety (CTSA). While at the CTSA, my research focused on treatment outcomes in patients with anxiety disorders, which resulted in a number of publications. I was subsequently funded by an NIMH Research Supplement to Promote Diversity in Health-Related Research to work with Dr. Theodore Satterthwaite in the Brain Behavior Laboratory at the University of Pennsylvania. My research investigated the neurobiological mechanisms associated with psychopathology symptoms in youth, which has resulted in several manuscripts published in journals such as *Biological Psychiatry*, *Molecular Psychiatry*, and the *American Journal of Psychiatry* (a-d). As a postdoctoral researcher, I was also awarded a 2017 NARSAD Young Investigator Award from the Brain & Behavior Research Foundation and a Penn PROMOTES Research on Sex and Gender in Health grant from the University of Pennsylvania. To date, my work has resulted in 38 accepted peer-reviewed publications. Furthermore, my neuroimaging work was subsequently granted distinguished abstract awards from the Organization for Human Brain Mapping, the American College of Neuropsychopharmacology, the Penn PROMOTES Research on Sex and Gender in Health program, and the Society of Biological Psychiatry. I have also been funded by a NIMH K99/R00 Pathway to Independence Award to uncover the biomarkers associated with internalizing symptoms in youth. The manuscript for this work has been recently accepted for publication at *Biological Psychiatry*. I am currently a tenure-track, full-time Assistant Professor at Vanderbilt University where I continue to use novel neuroimaging and psychophysiological methods to study the neurobiological mechanisms underlying internalizing disorders. The broader goal of my work is to contribute to knowledge that can be used to increase the accuracy of diagnosis and treatment for brain-based disorders.

- a. Kaczurkin, A. N., Moore, T. M., Ruparel, K., Ciric, R., Calkins, M. E., Shinohara, R. T., Elliott, M. A., Hopson, R., Roalf, D. R., Vandekar, S. N., Gennatas, E. D., Wolf, D. H., Scott, J. C., Pine, D. S., Leibenluft, E., Detre, J. A., Foa, E. B., Gur, R. E., Gur, R. C., & Satterthwaite, T. D. (2016). Elevated amygdala perfusion mediates developmental sex differences in trait anxiety. *Biological Psychiatry, 80*, 775-785. PMID: PMC5074881.
- b. Kaczurkin, A. N., Moore, T. M., Calkins, M. E., Ciric, R., Detre, J. A., Elliott, M. A., Foa, E. B., Garcia de La Garza, A., Roalf, D. R., Rosen, A., Ruparel, K., Shinohara, R. T., Xia, C. H., Wolf, D. H., Gur, R. E., Gur, R. C., & Satterthwaite, T. D. (2018). Common and dissociable regional cerebral blood flow differences associate with dimensions of psychopathology across categorical diagnoses. *Molecular Psychiatry, 23*, 1981-1989. PMID: PMC5858960.
- c. Kaczurkin, A. N., Park, S. S., Sotiras, A., Moore, T. M., Calkins, M. E., Cieslak, M., Rosen, A. F. G., Ciric, R., Xia, C. H., Cui, Z., Sharma, A., Wolf, D. H., Ruparel, K., Pine, D. S., Shinohara, R. T., Roalf, D. R., Gur, R. C., Davatzikos, C., Gur, R. E., & Satterthwaite, T. D. (2019) Evidence for dissociable linkage of dimensions of psychopathology to brain structure in youths. *American Journal of Psychiatry, 176*, 1000-1009. PMID: PMC6888993.
- d. Kaczurkin, A. N., Sotiras, A., Baller, E. B., Barzilay, R., Calkins, M. E., Chand, G. B., Cui, Z., Erus, G., Fan, Y., Gur, R. E., Gur, R. C., Moore, T. M., Roalf, D. R., Rosen, A. F. G., Ruparel, K., Shinohara, R. T., Varol, E., Wolf, D. H., Davatzikos, C., & Satterthwaite, T. D. (2020). Neurostructural heterogeneity in youth with internalizing symptoms. *Biological Psychiatry, 87*, 473-482. PMID: PMC7007843.

## B. Positions and Honors

### Positions and Employment

- 2014-2017 Fellow, Center for the Treatment and Study of Anxiety, University of Pennsylvania, Philadelphia, PA
- 2017-2019 Fellow, Brain and Behavior Laboratory, University of Pennsylvania, Philadelphia, PA
- 2019-present Assistant Professor, Vanderbilt University, Nashville, TN

### Other Experiences and Professional Memberships

- Organization for Human Brain Mapping
- Society of Biological Psychiatry
- Organization for the Study of Sex Differences
- American Psychological Association
- Association for Psychological Science
- Society for Psychophysiological Research
- The International OCD Foundation
- Anxiety and Depression Association of America
- Association for Behavioral and Cognitive Therapies
- The Society for the Teaching of Psychology

### Academic and Professional Honors:

- 2008–2009 **Diversity of Views and Experiences Fellowship**, University of Minnesota
- 2008-2014 **Pascua Yaqui Higher Education Tribal Scholarship**, Pascua Yaqui Tribe, Tucson, AZ
- 2009 **DOVE Research Summer Fellowship**, University of Minnesota
- 2009 **David Campbell Graduate Research Fellowship**, University of Minnesota
- 2010 **Graduate Summer Research Fellowship**, University of Minnesota
- 2010 **Tuition Fellowship**, University of Minnesota
- 2010 **Gough Travel Fellowship**, University of Minnesota
- 2010–2011 **Eva O. Miller Fellowship**, University of Minnesota
- 2011 **Tuition Fellowship**, University of Minnesota
- 2011 **Lykken Travel Award**, University of Minnesota
- 2011-2014 **National Science Foundation Graduate Research Fellowship**, National Science Foundation
- 2012 **Tuition Fellowship**, University of Minnesota
- 2012 **Gough Travel Fellowship**, University of Minnesota

2012	<b>Lykken Travel Award</b> , University of Minnesota
2012	<b>Student Poster Award</b> , Society for Psychophysiological Research
2014-2017	<b>Postdoctoral Fellowship for Academic Diversity</b> , University of Pennsylvania
2017	<b>Merit Abstract Award for Top-Ranking Submissions</b> , Organization for Human Brain Mapping
2017	<b>Outstanding Poster Award</b> , Penn Promotes Retreat, University of Pennsylvania
2017-2019	<b>Distinguished Young Scientists in the Field of Neuropsychopharmacology Travel Award Program</b> , American College of Neuropsychopharmacology
2017	<b>Penn PROMOTES Research on Sex and Gender in Health grant</b> , University of Pennsylvania
2017	<b>2017 NARSAD Young Investigator Award</b> , Brain & Behavior Foundation
2017-2018	<b>NIMH Research Supplement to Promote Diversity in Health-Related Research</b> , Brain Behavior Laboratory, University of Pennsylvania
2018-2019	<b>Career Development Institute Awardee</b> , Career Development Institute for Psychiatry, University of Pittsburgh
2018-2022	<b>NIMH K99/R00 Pathway to Independence Award</b> (PI; grant number K99MH117274)
2019	<b>Society of Biological Psychiatry Domestic Travel Fellowship Award</b> , SoBP
2020	<b>Alies Muskin Career Development Leadership Program (CDLP) Awardee</b> , Anxiety and Depression Association of America (ADAA)
2020	<b>APS Rising Star</b> , Association for Psychological Science (APS)
2020	<b>Sloan Research Fellowship</b> , Alfred P. Sloan Foundation

### C. Contributions to Science

1. Generalization of conditioned fear. My early work centered on abnormalities in behavior, psychophysiological responses, and brain functioning associated with the generalization of conditioned fear in individuals with anxiety. For example, using a novel generalization paradigm in veterans with posttraumatic stress disorder (PTSD), I demonstrated that PTSD patients showed stronger conditioned generalization than controls, as shown by greater brain activation to the generalization stimuli in the anterior insula, ventral hippocampus, dorsolateral and dorsomedial prefrontal cortex, and caudate nucleus (a). This work represents one of the first studies to demonstrate neurobiological deficits associated with the generalization of conditioned fear in PTSD. My work also extended these findings to individuals with obsessive-compulsive disorder (b) and generalized anxiety disorder (c). Together, this work suggests that overgeneralization is not specific to PTSD and represents an important construct that is apparent across anxiety disorders.
  - a. Kaczurkin, A. N., Burton, P. C., Chazin, S. M., Manbeck, A. B., Espensen-Sturges, T., Cooper, S. E., Sponheim, S. R., & Lissek, S. (2016). Neural substrates of over-generalized conditioned fear in posttraumatic stress disorder. *American Journal of Psychiatry*, 174, 125-134. PMID: PMC4127021.
  - b. Kaczurkin, A. N., & Lissek, S. M. (2014). Generalization of conditioned fear and obsessive-compulsive traits. *Journal of Psychology and Psychotherapy: Cognitive and Experimental Psychology*, S7, 1-7. PMID: PMC3932061.
  - c. Lissek, S., Kaczurkin, A. N., Rabin, S., Geraci, M., Pine, D. S., & Grillon, C. (2014). Generalized anxiety disorder is associated with overgeneralization of classically conditioned-fear. *Biological Psychiatry*, 75, 909-915. PMID: PMC3938992.
2. Treatment outcomes in anxiety disorders. Another branch of my research has focused on treatment outcomes in patients with anxiety disorders. For instance, my work has suggested that reducing PTSD symptoms may be beneficial for reducing alcohol craving in those with co-occurring PTSD and substance use disorder (a). My research has also found that therapy for PTSD can be effective for female adolescent survivors of sexual abuse even when high levels of anger are present (b). In addition, I have provided evidence of racial/ethnic differences in PTSD symptoms in military populations (c). Furthermore, my work has shown that anxiety sensitivity (fear of arousal-related sensations) is more relevant to panic, social anxiety, generalized anxiety, and depressive symptoms and less related to obsessive-compulsive symptoms (d). Additionally, I have also published studies on the relationship between emotion regulation and PTSD, on treatment outcomes and quality of life in obsessive-compulsive disorder, on secondary emotional and behavioral symptoms in adolescents with PTSD, and on moderators of treatment change in

social anxiety disorder. This body of work has advanced our understanding regarding the impact of a number of important constructs on treatment outcomes in anxiety patients.

- a. Kaczurkin, A. N., Asnaani, A., Alpert, E., & Foa, E. B. (2016). The impact of treatment condition and the lagged effects of PTSD symptom severity and alcohol use on changes in alcohol craving. *Behaviour Research and Therapy*, 79, 7-14. PMID: PMC4801783.
  - b. Kaczurkin, A. N., Asnaani, A., Zhong, J., & Foa, E. B. (2016). The moderating effect of state anger on treatment outcome in female adolescents with PTSD. *Journal of Traumatic Stress*, 29, 325-331. PMID: 27459380.
  - c. Kaczurkin, A. N., Asnaani, A., Hall-Clark, B., Peterson, A. L., Yarvis, J. S., Foa, E. B., & the STRONG STAR Consortium. (2016). Ethnic and racial differences in clinically relevant symptoms in active duty military personnel with posttraumatic stress disorder. *Journal of Anxiety Disorders*, 43, 90-98. PMID: 27639110.
  - d. Kaczurkin, A. N., Fitzgerald, H., Tyler, J., & Asnaani, A. (2018). The contribution of anxiety sensitivity to obsessive-compulsive and anxiety symptoms in a naturalistic treatment setting. *Cognitive Therapy and Research*, 42, 661-673.
3. Neurobiological substrates of psychopathology in youth. My most recent research investigates the neurobiological mechanisms associated with psychopathology symptoms in youth. For example, my work has shown that trait anxiety is associated with elevated perfusion, or blood flow to the brain, in a number of regions including the amygdala, anterior insula, and fusiform cortex in a large sample of youth. Additionally, higher trait anxiety in post-pubertal females was mediated by elevated perfusion of the left amygdala, suggesting that abnormalities in cerebral perfusion may underlie the sex differences found in internalizing symptoms during adolescence (a). Building upon this work, I published a manuscript showing that psychopathology symptoms across multiple disorders are associated with elevated perfusion in the dorsal and rostral anterior cingulate cortex. These results suggest the existence of common cerebral blood flow abnormalities across neuropsychiatric disorders in youth (b). Additionally, using factor analysis to quantify dimensions of psychopathology in a large sample of youth, I found a dissociable relationship whereby fear was most strongly linked to reduced cortical thickness and overall psychopathology was most strongly linked to global reductions in gray matter volume (c). Most recently, I have delineated distinctive patterns of neurobiological deficits within youth with internalizing symptoms using structural imaging data, which may assist in developing early, biologically-informed interventions for these symptoms. Taken together, these studies enhance our knowledge about the neurobiological substrates of psychopathology in youth.
- a. Kaczurkin, A. N., Moore, T. M., Ruparel, K., Ciric, R., Calkins, M. E., Shinohara, R. T., Elliott, M. A., Hopson, R., Roalf, D. R., Vandekar, S. N., Gennatas, E. D., Wolf, D. H., Scott, J. C., Pine, D. S., Leibenluft, E., Detre, J. A., Foa, E. B., Gur, R. E., Gur, R. C., & Satterthwaite, T. D. (2016). Elevated amygdala perfusion mediates developmental sex differences in trait anxiety. *Biological Psychiatry*, 80, 775-785. PMID: PMC5074881.
  - b. Kaczurkin, A. N., Moore, T. M., Calkins, M. E., Ciric, R., Detre, J. A., Elliott, M. A., Foa, E. B., Garcia de La Garza, A., Roalf, D. R., Rosen, A., Ruparel, K., Shinohara, R. T., Xia, C. H., Wolf, D. H., Gur, R. E., Gur, R. C., & Satterthwaite, T. D. (2018). Common and dissociable regional cerebral blood flow differences associate with dimensions of psychopathology across categorical diagnoses. *Molecular Psychiatry*, 23, 1981-1989. PMID: PMC5858960.
  - c. Kaczurkin, A. N., Park, S. S., Sotiras, A., Moore, T. M., Calkins, M. E., Cieslak, M., Rosen, A. F. G., Ciric, R., Xia, C. H., Cui, Z., Sharma, A., Wolf, D. H., Ruparel, K., Pine, D. S., Shinohara, R. T., Roalf, D. R., Gur, R. C., Davatzikos, C., Gur, R. E., & Satterthwaite, T. D. (2019) Evidence for dissociable linkage of dimensions of psychopathology to brain structure in youths. *American Journal of Psychiatry*, 176, 1000-1009. PMID: PMC6888993.
  - d. Kaczurkin, A. N., Sotiras, A., Baller, E. B., Barzilay, R., Calkins, M. E., Chand, G. B., Cui, Z., Erus, G., Fan, Y., Gur, R. E., Gur, R. C., Moore, T. M., Roalf, D. R., Rosen, A. F. G., Ruparel, K., Shinohara, R. T., Varol, E., Wolf, D. H., Davatzikos, C., & Satterthwaite, T. D. (2020). Neurostructural heterogeneity in youth with internalizing symptoms. *Biological Psychiatry*, 87, 473-482. PMID: PMC7007843.

## Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/antonia.kaczurkin.1/bibliography/57078365/public/?sort=date&direction=ascending>

### D. Additional Information: Research Support

#### Ongoing Research Support

**NIMH R00MH117274** Kaczurkin (PI) 07/01/2018 – 06/30/2022

**K99/R00 Pathway to Independence Award**

National Institute of Mental Health

Delineating neurobiological heterogeneity in internalizing symptoms using machine learning and deep phenotyping.

The goal of this study is to uncover the neurobiological markers associated with internalizing symptoms including anxiety and depression in youth.

Role: PI

**Sloan Research Fellowship** Kaczurkin (PI) 09/15/2020-9/14/2022

Alfred P. Sloan Foundation

Understanding neurobiological markers of internalizing symptoms in youth.

The goal of this study is to determine psychophysiological indices of attention to threat in those with anxiety.

Role: PI

**2017 NARSAD Young Investigator Award** Kaczurkin(PI) 01/15/2018-07/14/2021

Brain & Behavior Research Foundation

Longitudinal brain development in anxious youth.

The goal of this study is to longitudinally assess anxious youth originally imaged as part of the Philadelphia Neurodevelopmental Cohort (PNC).

Role: PI

**1UG3DA045251** Lahey (PI) 08/16/2019-07/31/2021

NIDA (subcontract to Univ. of Chicago)

Early exposures and neurodevelopmental, behavioral, and health outcomes.

In collaboration with Dr. Lahey, the goal of this study is to investigate individual differences in brain structure and function as they relate to a hierarchical model of psychopathology.

Role: Collaborator

#### Completed Research Support

**Penn PROMOTES Research on Sex and Gender in Health** Kaczurkin(PI) 07/01/2017-06/30/2018

University of Pennsylvania

Part of the K12 HD085848 training grant "Building Interdisciplinary Research Careers in Women's Health"

Developmental sex differences in anxiety measured using multimodal neuroimaging.

The goal of this study is to link longitudinal patterns of brain development to sex differences in anxiety measured with ecological momentary assessment and multimodal neuroimaging.

Role: PI

**NIMH R01MH107703** Satterthwaite(PI) 09/01/2017-06/30/2018

**Research Supplement to Promote Diversity in Health-Related Research**

National Institute of Mental Health

Multi-modal longitudinal neuroimaging of irritability in adolescence.

The goal of this project is to study abnormal brain development in youth with dimensionally defined symptoms of irritability across traditional boundaries of psychiatric diagnosis. Funded through the Biobehavioral Research Awards for Innovative New Scientists (BRAINS) mechanism.

Role: Postdoctoral fellow