

Kelsey Winkeler

PHD CANDIDATE IN CLINICAL SCIENCE, APPIC #19100

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Education

Virginia Polytechnic Institute and State University

PH.D. IN PSYCHOLOGY, CLINICAL SCIENCE (APA & PCSAS-ACCREDITED)

Blacksburg, VA

July 2027 (Expected)

- Title: **Neural habituation to negative stimuli as a predictor of treatment outcomes in posttraumatic stress disorder (PTSD)**
- Committee: Brooks Casas, Ph.D. (co-chair), Pearl Chiu, Ph.D. (co-chair), Stephen LaConte, Ph.D., Chloe Hudson, Ph.D., Katie McCurry, Ph.D.

PRELIMINARY EXAM

August 2025

- Title: **Neural substrates of symptom improvement after treatment for posttraumatic stress disorder: a systematic review**
- Committee: Brooks Casas, Ph.D., (co-chair) Pearl Chiu, Ph.D. (co-chair), Chloe Hudson, Ph.D., Katie McCurry, Ph.D.

M.S. IN PSYCHOLOGY

May 2023

- Title: **Social dysfunction and treatment-related change in Veterans with posttraumatic stress disorder (PTSD)**
- Committee: Brooks Casas, Ph.D. (co-chair), Pearl Chiu, Ph.D. (co-chair), B. Chris Frueh, Ph.D.

The College of Wooster

Wooster, OH

B.A. IN BIOLOGY

September 2013 - May 2017

- Title: **Circadian rhythm-gating of salinity stress-induced transcription factor expression in *Solanum lycopersicum* and implications in sustainable agriculture**
- Committee: Tsuyoshi Mizoguchi, Ph.D., Ryosuke Hayama, Ph.D., Melissa Mullen-Davis, Ph.D. (chair), Laura Sirot, Ph.D.
- Including coursework in bioinformatics, genetics, molecular neuroscience, animal behavior, and evolution
- Additional liberal arts coursework in mathematics, chemistry, French, English, sociology, and music

International Christian University

Tokyo, Japan

US DEPARTMENT OF STATE BENJAMIN A. GILMAN INTERNATIONAL SCHOLAR

July - December 2016

- Independent study research under Tsuyoshi Mizoguchi, Ph.D. and Ryosuke Hayama, Ph.D.
- Coursework in plant genetics, plant microbiology, microscopy, and Japanese language

Clinical Experience

CLINICAL ROTATIONS

Boston Child Study Center, Portland

Portland, ME

July 2023-September 2023

CLINICAL EXTERN

- **Team focus: Comprehensive dialectical behavior therapy for adolescents and young adults**
- Supervisor: Michael Hollander, Ph.D., L.C.P.
- Co-Lead DBT Parent Skills and Adolescent Skills Groups with Dr. Evan Michel, Ph.D., L.C.P.
- Completed 1-week DBT Foundational training
- Attended multi-disciplinary consultation weekly team
- Intake interviews with Dr. Ryan Madigan, Psy.D., L.C.P., and Dr. Michael Hollander, Ph.D., L.C.P.
- Observed PCIT-SM and PCIT-Calm sessions
- Up to 10 hours/week

Psychological Services Center at Virginia Tech

GRAD STUDENT CLINICIAN

Blacksburg, VA

August 2022 - May 2023

Team focus: Integrative Cognitive Behavioral and Family systems approach

- Supervisor: Adrienne Means-Christensen, L.C.P., Ph.D.
- Adolescents with PTSD, externalizing behavior (2): CBT with DBT skills
- Young adults (2): non-manualized CBT for adjustment disorder and CBT for chronic pain.
- Co-lead teen mental health skills group.
- 6 hours of supervision weekly
- Up to 20 hours/week

Chiu & Casas Lab

RESEARCH ASSESSMENT

Roanoke, VA

August 2022-September 2022

- Supervisors: Nanda Sankarasubramanian, M.A.; Matt Caton, M.P.S.
- Completed Kiddie Schedule for Affective Disorders and Schizophrenia- Lifetime and Present Edition (K-SADS-PL DSM-5), adolescent and parent versions, for research study
- 3 hours each

Child Assessment Center at Virginia Tech

Blacksburg, VA

CHILD ASSESSMENT

January 2022 - December 2024

- Supervisor: Rosanna Breaux-Boljonis, Ph.D., L.C.P.; Sam Margherio, Ph.D., L.C.P.
- Completed five comprehensive psychological assessments for children and adolescents under 16
- Minimum 12 hours each

Psychological Services Center at Virginia Tech

Blacksburg, VA

ADULT ASSESSMENT

August 2021 - May 2023

- Supervisor: Lee Cooper, Ph.D., L.C.P.
- Performed five comprehensive psychological assessments for adolescents over 16 and adults
- Minimum 12 hours each

CLINICAL MEASURES ADMINISTERED

- ADIS-5: Anxiety and Related Disorders Interview Schedule for DSM-5, Adult Version
- ADIS-5, C/P: Anxiety and Related Disorders Interview Schedule for DSM-5, Child and Parent Version
- ADIS-IV, C/P: Anxiety and Related Disorders Interview Schedule for DSM-IV, Child and Parent Version
- ADI-R: Autism Diagnostic Interview-Revised
- ADOS-2: Autism Diagnostic Observation Schedule, Second Edition
- CAPS-5: Clinician Administered PTSD Scale for DSM-5
- CAADDID: Conners Adult ADHD Diagnostic Interview for DSM-IV
- CAARS: Conners' Adult ADHD Rating Scales
- CARS-2: Childhood Autism Rating Scale
- CATA: Conners Auditory Test of Attention
- CPT-3: Continuous Performance Test, 3rd Edition
- DPICS: Dyadic Parent-Child Interaction Coding System
- K-SADS-PL DSM-5: Kiddie Schedule for Affective Disorders and Schizophrenia
- LEC: Life Events Checklist
- MINI: Mini-International Neuropsychiatric Interview
- MMPI: Minnesota Multiphasic Personality Inventory, Third Edition
- WAIS-IV: Wechsler Adult Intelligence Scale, Fourth Edition
- WISC-V: Wechsler Intelligence Scale for Children, Fifth Edition
- WMS-IV: Wechsler Memory Scale, Fourth Edition
- WJ IV ACH: Woodcock-Johnson Tests of Achievement
- Y-BOCS: Yale-Brown Obsessive Compulsive Scale

Research Experience

Neural habituation in PTSD treatment

LEAD, CHIU & CASAS LABS

Fralin Biomed. Res. Inst.

Sept. 2025 - Present

- **Focus:** Impact of posttraumatic stress symptoms on affect manipulated using the International Affective Picture System (IAPS) before and after residential treatment for PTSD.
- Previous literature has suggested neural habituation differs by symptom cluster severity in PTSD.
- Using IAPS, we are quantifying neural habituation to negative stimuli before and after PTSD treatment.
- We hope to determine whether neural habituation predicts symptom improvement or changes with symptom improvement.
- Next steps will be to determine whether it is possible to modulate patterns of habituation using real-time neurofeedback.
- CRediT: Conceptualization, Software, Data Curation, Investigation, Formal Analysis, Writing: Original, Writing: Review and Editing

Collaborative social interactions in PTSD

LEAD, CHIU & CASAS LABS

Fralin Biomed. Res. Inst.

Sept. 2021 - Present

- **Focus:** Symptom and treatment-related changes in trust among Veterans with posttraumatic stress symptoms.

- Using an iterated version of the Trust Game and a belief-learning model, we are disentangling aspects of trust that may be disrupted in posttraumatic stress disorder: initial belief of the partner's trustworthiness, and the weight of this belief on updating expectations.
- I additionally investigated neural substrates of trust and these parameters.
- I investigated the impact of residential PTSD treatment on these belief learning parameters.
- CRediT: Conceptualization, Software, Validation, Formal Analysis, Investigation, Data Curation, Writing: Original, Writing: Review and Editing

Competitive social interactions in PTSD

COLLABORATOR, CHIU & CASAS LABS

Fralin Biomed. Res. Inst.

April 2023 - Present

- **Focus:** Using a novel two-step resource competition and belief learning model to understand social status preference, conflict aversion, and social learning in combat-exposed Veterans.
- We found that Veterans with PTSD show diminished conflict aversion and social learning rate, but do not seek higher social status differently from combat-exposed controls.
- Those with lifetime but not current PTSD showed similar conflict aversion to those with current PTSD, suggesting diminished conflict aversion may be traitlike.
- Future studies may investigate whether it is possible to alter conflict aversion in PTSD with treatment, and whether diminished conflict aversion predicts the development of PTSD in military populations.
- CRediT: Writing: Review and Editing

Habituation-related neurofeedback in posttraumatic stress disorder

COLLABORATOR, CHIU & CASAS LABS

Fralin Biomed. Res. Inst.

Summer 2023 - Present

- **Focus:** Using a data-derived activation pattern related to habituation, we hope to understand whether it is possible to alter neural substrates associated with diminished neural habituation in those with PTSD. (Pilot study)
- We built a classifier for whole-brain patterns of habituation in PTSD.
- Currently, we are investigating whether patterns of altered habituation may be altered using real-time neurofeedback in PTSD.
- CRediT: Conceptualization, Investigation, Data Curation

Uplifting and Prioritizing Black Voices in Trauma Intervention: Cultural Adaptations of Written Exposure Therapy for Trauma-Exposed Black Women

Virginia Tech

COLLABORATOR, BRIANNA GEORGE & JONES LAB

Summer 2025

- **Focus:** Center the needs of Black women in an existing treatment for PTSD (i.e., group WET) using existing literature recommendations and direct community stakeholder feedback of their treatment experiences and suggestions through focus groups.
- Black women experience higher trauma exposure and risk of post-traumatic stress disorder as well as unique internal and external barriers to treatment.
- This study sought to understand factors impacting the acceptability and feasibility of a written exposure therapy group for Black women.
- CRediT: Validation

Using Volatile Organic Compounds (VOCs) in Biomedical Research

HILL LAB

Dartmouth College
August 2018 - August 2019

- **Focus: Time-differential emission of volatile organic compounds in the corpse plant.**

- The VOCs of the corpse plant had previously been characterized, but did not take into consideration necessary changes in flower-pollinator interactions over time.
- I collected temperature and VOC data every four hours over three days to understand how VOCs and their distribution may change over time, in collaboration with analytical chemists and data scientists.
- In this position, I was also lab manager for a multi-national, interdisciplinary lab.
- I assisted with projects characterizing pathway-based and pathway-naive genetic biomarkers in sepsis, measuring tuberculosis vaccine efficacy, and VOC-based social transmission of fear (Study protocol).
- I also reverse-engineered unique VOC collection equipment, maintained a GC-GC-MS and large datasets, and managed collaboration with other labs collecting VOCs nationally and internationally for our analysis.
- I also mentored a team of undergraduates in study conceptualization and literature review.
- CRediT: Conceptualization, Methodology, Data Curation, Project Administration, Supervision, Investigation

Circadian rhythm-gated stress response in tomato plants.

MIZOGUCHI LAB

Intl. Christian University
August 2016 - May 2017

- **Focus: Differential transcription response to salinity stress.**

- Salinity stress is a barrier to crop production in large-scale agricultural environments.
- In this project, I sought to understand the relationship between response to salinity stress and circadian rhythms, for improved bioengineering of salt-resistant tomatoes.
- We found that tomato plants show decreased transcription of stress-response RNA during subjective "night", even in absence of light cues.
- CRediT: Conceptualization, Data Curation, Investigation, Formal Analysis, Writing: Original

Characterizing social- and reproduction-linked behavioral changes

SIROT LAB

College of Wooster
August 2015 - May 2017

- **Focus: Differential protein expression and behavior in female mosquitoes post-coitus.**

- Female mosquitoes only bite to fertilize their eggs post-coitus; we sought to understand whether protein transfer from males triggered changes in behavior that lead to biting and subsequent disease transfer.
- This research provided into controlling disease spread by altering protein production in male mosquitoes.
- I also investigated social learning in the South American cave cockroach, and adapted methods for undergraduate science education to Animal Behavior.
- CRediT: Investigation, Data Curation, Writing: Original

Publications

*equal contribution

IN PREPARATION

Winkeler, K.E., Wang, S., Aimone, J. A., Wang, J., Cunningham, K., Hurd, L., Jameson, M., Marston, E., Usala, J., Sankara-subramanian, N., Frueh, B.C., Williams, W., Graham, D.P., Chiu, P.H., and Casas, B. (In preparation). Neural substrates of trust and treatment-related change in Veterans with posttraumatic stress disorder (PTSD). *Biological Psychiatry*.

UNDER REVIEW

Winkeler, K.E., Goyal, S., Bansal., V., Chiu, P.H., Casas, B. (Submitted). Changes in blood oxygenation-level dependent (BOLD) response associated with symptom improvement after treatment in adults with posttraumatic stress disorder (PTSD): a systematic review. *Journal of Affective Disorders*.

Cui, Z., Zhu, L., **Winkeler, K.E.**, Bansal, V., Wang, J., Chiu, P. H., Casas, B. (Submitted). Evaluating correlates of increased social conflict in posttraumatic stress disorder. *Nature Communications*.

PUBLISHED

Kang, L., Kaur, J., **Winkeler, K.**, Kubiak, D. and Hill, J.E. (2023). How the volatile organic compounds emitted by corpse plant change through flowering. *Nature Scientific Reports*, 13:372. DOI: 10.1038/s41598-022-27108-8

Winkeler, K., and Bobak, C. (2022). Replicability of Differentially Expressed genes versus biological pathways biomarkers in diagnosing sepsis. In proceedings of the 15th International Joint Conference on Biomedical Engineering Systems and Technologies - BIOINFORMATICS, ISBN 978-989-758-552-4, 160-167. DOI: 10.5220/0010976300003123

Coyne, K., Mullen Davis, M., Mizoguchi, T., Hayama, R. (2019). Temporal restriction of salt inducibility in expression of salinity-stress related gene by the circadian clock in *Solanum lycopersicum*. Plant Biotechnology, 36: 195–200. DOI: 10.5511/plantbiotechnology.19.0703a

Presentations

* presenting author; + mentored undergraduate

INVITED TALKS

Spring 2025. *Comprehensive DBT-A on a micro-team: A case discussion*. Invited talk: Carilion Childrens Hospital

Spring 2022. *Neural substrates of trust in posttraumatic stress disorder*. Invited talk: Fralin Biomedical Research Institute Faculty Retreat.

Spring 2017. *Circadian rhythm-gating of salinity stress-induced transcription factor expression in Solanum lycopersicum, and implications in sustainable agriculture*. Invited talk: Wooster Senior Research Symposium, Wooster, OH.

CONTRIBUTED PRESENTATIONS

Winkeler, K.E.*, Aimone, J., Wang, J., Sankarasubramanian, N., Cunningham, K., Marston, E., Hurd, L., Usala, J., Jameson, M., Williams, W., Graham, D., Frueh, B.C., Casas, B., Chiu, P.H. (2025). A belief-learning model of trust in Veterans with posttraumatic stress symptoms and effects of treatment. Poster competition: Society for the Science of Clinical Psychology, New Orleans, LA.

Winkeler, K.E.*, Aimone, J., Wang, J., Sankarasubramanian, N., Cunningham, K., Marston, E., Hurd, L., Usala, J., Jameson, M., Williams, W., Graham, D., Frueh, B.C., Casas, B., Chiu, P.H. (2025). Neural substrates of trust and social responsiveness in Veterans with posttraumatic stress symptoms. Poster presentation: Society for Biological Psychiatry, Toronto, Ontario, Canada.

Bansal, V.* , Kim, D-Y., McCurry, K.L., **Winkeler, K. E.**, Chiu, P.H., Casas, B. (2024). Leveraging machine learning to extract a whole-brain pattern to target habituation in posttraumatic stress disorder. Poster presentation: Organization for Human Brain Mapping, Seoul, South Korea.

Winkeler, K.E.*, Sankarasubramanian, N., Cunningham, K., Marston, E. Hurd, L., Usala, J., Jameson, M., Frueh, C., Chiu, P., King-Casas, B. (2022). Neural substrates of trust and social responsiveness in Veterans with posttraumatic stress symptoms. Poster presentation: Society for Biological Psychiatry, San Diego, CA.

Winkeler, K.E.*, Sankarasubramanian, N., Cunningham, K., Marston, E. Hurd, L., Usala, J., Jameson, M., Frueh, C., Chiu, P., King-Casas, B. (2022). Treatment-related change in trust in posttraumatic stress disorder (PTSD). Poster presentation: Precision Neuroscience 2022, Roanoke, VA.

Coyne, K.*, Kubiak, D. +, Rees, C., Kang, L., Khan, M.S., Hill, J. (2019). Characterizing volatile molecules of the corpse flower. Poster presentation: Big Data in the Life Sciences, Hanover, NH.

Coyne, K.*, Mullen Davis, M., Mizoguchi, T., Hayama, R. (2016). Circadian rhythm-gating of salinity stress-induced transcription factor expression in *Solanum lycopersicum*, and implications in sustainable agriculture. Poster presentation: Wooster Senior Research Symposium, Wooster, OH.

Coyne, K.*, Mullen Davis, M., Hayama, R., Mizoguchi, T. (2016). Circadian rhythm gating of salinity stress response-implicated transcription factors in *Solanum lycopersicum*. Poster presentation: Japan Solanaceae Consortium, Tokyo, Japan.

Goyette, C.* +, Hoffman, J. +, Kim, H.* +, **Coyne, K.**, Hill, J. (2019). The smell of fear. Poster presentation: Karen Wetterhahn Symposium, Hanover, NH.

Professional Development

2025	Cognitive Behavior Therapy for Eating Disorders Training (CBT-E) , University of Oxford	Recorded
2025	Trauma-Focused Cognitive Behavior Therapy Training (TF-CBT) , Med. Univ. of S. Carolina	Recorded
2025	Parent-Child Interaction Therapy Certification , PCIT International	Roanoke, VA
2024	Parent-Child Interaction Therapy 10-Hour Course , UC Davis	Recorded
2024	Integrated Care Certificate , Nat. Reg. of Health Service Psychologists	Remote
2023	DBT 4-Day Foundational Training , Michael Hollander, Ph.D. & Lyndsey Moran, Ph.D.	Portland, ME
2023	Culture of Prevention Workshop , Virginia Tech	Blacksburg, VA
2023	Culturally Responsive Treatment for American Indian & Alaska Native Clients With Suicidality , Nat. Reg. of Health Service Psychologists	Recorded
2023	Computational Psychiatry Symposium , Peter Dayan, Ph.D., Ken Kishida, Ph.D., Dan Bang, Ph.D.	Roanoke, VA
2023	fMRI Analysis Workshop , Tor Wager, Ph.D., Kent Kiehl, Ph.D., Vince Calhoun, Ph.D.	Remote
2022	Clinical Suicidology Certificate , Nat. Reg. of Health Service Psychologists	Remote
2022	Understanding Psychosis Certificate , Nat. Reg. of Health Service Psychologists	Remote
2022	Evidence-Based Psychotherapy in Latino Populations , Nat. Reg. of Health Service Psychologists	Recorded
2022	Working With Suicidal and Homeless LGBTQ+ Youth in the Context of Family Rejection , Nat. Reg. of Health Service Psychologists	Recorded
2022	Evidence-Based Psychotherapy with LGBTQ+ Populations , Nat. Reg. of Health Service Psychologists	Recorded
2022	Talking Racial Stress: Assessing & Treatment Planning for Experiences of Racial Discrimination , Nat. Reg. of Health Service Psychologists	Recorded
2022	Cultural Competency Certificate , Department of Health and Human Services	Recorded
2022	Culturally Responsive Cognitive Behavioral Therapy , Amber Calloway	Remote

Awards, Fellowships, & Grants

- 2021 **Dean's Diversity Assistantship**, Virginia Polytechnic Institute and State University
- 2017 **Eli Segal AmeriCorps Education Award**, Corporation for National and Community Service
- 2016 **Benjamin A. Gilman Scholarship Award**, United States Department of State
Henry J. Copeland Scholarship Award, Copeland Fund for Independent Study
Office of the Provost Scholarship, The College of Wooster
- 2015 **Eli Segal AmeriCorps Education Award**, Corporation for National and Community Service

Additional Professional Experience

TEACHING

Biology Teacher	Canaan, NH
MASCOMA VALLEY REGIONAL HIGH SCHOOL (TITLE 1)	2020-2021
<ul style="list-style-type: none"> • 10th, 11th and 12th grade • Social-emotional learning curriculum developer and coordinator • Taught Biology, Honors Biology, and Environmental Science 	
Science Teacher	Hartford, VT
HARTFORD MEMORIAL MIDDLE SCHOOL (TITLE 1)	2019-2020
<ul style="list-style-type: none"> • Taught 6th, 7th, and 8th grade science • Large population of students requiring individualized education (IEP) and 504 plans • IEP and 504 plan evaluation team member, bi-weekly • Rock climbing coach • Electives: Intro to Japanese, Video games as literature 	

Group Leader	Sapporo, Japan
EXPERIMENT IN INTERNATIONAL LIVING	July 2018
• Co-lead twelve 14 to 19-year-old group members	
Founding Science Teacher/Teach for America Corps Member	Boston, MA
NEIGHBORHOOD HOUSE CHARTER SCHOOL (TITLE 1)	2017-2018
• Taught 8th-grade science in a new high school	
• Diverse English ability in multi-language learner population	
• Advisory, social-emotional learning, functional behavior assessment and restorative justice duties.	
• Electives: Intro to Japanese, Intro to French	
Summer School Teaching Assistant	Boston, MA
McCORMACK MIDDLE SCHOOL (TITLE 1)	2015-2015
• 7th grade English and Math summer school assistant for children with behavioral difficulties.	
City Year Boston AmeriCorps Member	Boston, MA
ROGERS MIDDLE SCHOOL (TITLE 1)	2014-2015
• Full-time in-school tutor, mentor and executive function coach for 8th grade students	
Non-degree Coursework in Education	
TRAUMA AND RESILIENCE IN EDUCATION, GRADUATE COURSEWORK	Fall 2019
Concordia University Portland; Online	
5-12 SCIENCE GRADUATE-LEVEL COURSEWORK AND TEACHING CERTIFICATION	2017- 2018
Boston University/Teach for America; Boston, MA	

Mentoring and Outreach

DEPARTMENT SERVICE

2024-2025 Peer Clinical Supervisor , Clinical Science, Psychology Department	Blacksburg, VA
2024-2025 4th/5th Year Grad Student Representative , Clinical Science, Psychology Department	Blacksburg, VA
2024-2025 Clinical Science Grad Student Committee Representative , Psychology Department	Blacksburg, VA

COMMUNITY CONSULTING

July 2025 DBT Skills and Support for Parents of LGBTQ+ Teens , Virginia Tech EAP	Blacksburg, VA
Nov 2024 Treating OCD with exposure/response prevention (ERP) , Carilion Childrens Tanglewood	Roanoke, VA
May 2023 Helping students with ADHD , Virginia Tech Cook Counseling Center	Blacksburg, VA

MENTORING

2023-2025 Sachin Lokuge , Psychology Department, Class of 2029, 2030	Roanoke, VA
2023-2025 Hailey Van Vorce , Psychology Department, Class of 2029, 2030	Roanoke, VA
2022-2023 High School Research Assistant , Fralin Biomedical Research Center, Class of 2027	Roanoke, VA
2017-2022 Starling Martinez , Embry-Riddle Aeronautic University, Class of 2026	Boston, MA
2015-2023 Carra Blain , University of Miami, Class of 2023	Boston, MA
2018-2019 Daniella Kubiak , Dartmouth College, Class of 2020	Hanover, NH
2018-2019 Folasade Akinfe , Dartmouth College, Class of 2020	Hanover, NH

OTHER SERVICE AND OUTREACH

2022-2024 Human Neuroscience Graduate Student Congress , President & Founding Member	Roanoke, VA
2017-2019 Minds Matter Boston , Mentor	Boston, MA