Diheng Zhang, M.A.

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Research Interests

- Cognitive biases/deficits in mood and anxiety disorders and related neural mechanisms

- Bio/behavioral markers of mood and anxiety disorders

- Computational modeling of brain functions/dysfunctions and predicting symptom/markers

Summary of Professional Experience

Graduate Assistant   *Aug. 2018 – Present*
Psychophysiology Lab, **University of Arizona**   Tucson, AZ
Supervisor: John J.B. Allen, Ph.D.

Visiting Researcher   *Jun. 2019 – Aug. 2019*
Penn Computational Cognitive Neuroscience Lab, **University of Pennsylvania**   Philadelphia, PA
Supervisor: Anna Schapiro, Ph.D.
Research projects dedicated to develop neural network model for memory reconsolidation during sleep to simulate process of emotional memories.

Project Coordinator   *Jun. 2015 – Jul. 2018*
Program for Anxiety, Cognition, and Treatment (PACT) Lab, **University of Virginia**   Charlottesville, VA
Supervisor: Bethany Teachman, Ph.D.
Research projects dedicated to developing, evaluating and disseminating novel interventions for mood and anxiety disorders.

Research Assistant   *Jan. 2013 – Jun. 2014*
Langone Medical Center, **New York University** & **Bellevue Hospital Center**   New York, NY
Supervisors: Isaac Robert Galatzer-Levy, Ph.D. & Uzma Samadani, M.D., Ph.D.
Research project for establishing for a neural model for predicting early stage brain trauma.

Research Assistant: Summer Intern   *Jun. 2013 – Aug. 2013*
CEDAR Clinic, **Beth Israel Deaconess Medical Center**   Boston, MA
Supervisor: Kristen Woodberry, M.S.W., Ph.D.
Research project for understanding the prodromal phrase of early onset schizophrenia.

Research Assistant: Summer Intern   *May 2013 – Aug. 2013*
Department of Psychology, **Harvard University**   Cambridge, MA
Supervisors: Jill Hooley, D.Phil. & Kenneth Allen, Ph.D.
Research project for underpinning relationship between cognitive deficits and Non Suicidal Self Injury.

Education

Ph.D. Student in Clinical Psychology, University of Arizona   **Tucson, AZ**
School of Mind, Brain, and Behavior   *Aug. 2018 - Present*

M.A. Clinical Psychology, Columbia University in the City of New York   **New York, NY**
Teachers College, GPA: 3.84/4.00   *Aug. 2012 - May 2014*

B.Sc. Applied Psychology, Nanjing University   **Nanjing, China**
School of Social and Behavioral Science, GPA: 3.80/4.00   *Sep. 2009 - Jul. 2012*

Manuscripts and Publications

Zhang, D., & Allen, J.J. (Under Review). Computational modeling of Post-traumatic stress disorder: A Review of theoretical developments and clinical application.

Baee, S., Eberle, J. W., Daniel, K., **Zhang, D.**, Funk, D., Barnes, L., & Teachman, B. (In Prep). Early attrition prediction for digital mental health studies.

Zhang, D., & Allen, J.J. (2023). A Comparison of Nomothetic and Individualized Alpha Frequency Approaches to Measuring Frontal EEG Alpha Asymmetry. *Psychophysiology*, e14149.

Eberle, J. W., Boukhechba, M., Sun, J., **Zhang, D.**, Funk, D., Barnes, L., & Teachman, B. (2023). Shifting Episodic Prediction With Online Cognitive Bias Modification: A Randomized Controlled Trial. *Clinical Psychological Science*, 21677026221103128

Ji. L. J., Baee, S., **Zhang, D.**, Meyers, J., Funk, D., Portnow, S., Barnes, L., & Teachman, B. A. (2021). Multi-session online interpretation bias training for anxiety in a community sample. *Behaviour Research and Therapy*, 103864.

Steinman, S. A., Portnow, S., Billingsley, A. L., **Zhang, D.**, & Teachman, B. A. (2019). Threat and benign interpretation bias might not be a unidimensional construct. *Cognition and Emotion*, 1-10.

Chow, P.I., Portnow, S., **Zhang, D.**, Salemink, E., Wiers, R.W., & Teachman, B.A. (2018). Comorbid Interpretation and Expectancy Bias in Social Anxiety and Alcohol Use. *Anxiety, Stress, and Coping*

Zhang, D. (2014). *Identity formation as a mediator between early separation from parents and adolescence mental health issues.* Unpublished manuscript

Geng, L., Zhang, L., & **Zhang, D.** (2011). Improving spatial abilities through mindfulness: Effects on the mental rotation task. *Consciousness and Cognition, 20*(3), 801 - 806. doi: http://dx.doi.org/10.1016/j.concog.2011.02.004

Presentations

Eberle, J.W., Boukhechba, M.O., Sun, J., **Zhang, D.**, Funk, D.H., Barnes, L.E. & Teachman, B.A. (2019, Novermber). *Online Cognitive Bias Modification to Shift Negative Prospection: A Randomized Controlled Trial Using Technology to Extend Reach.* Poster to be presented at Association for Behavioral and Cognitive Therapies' 2019 convention in Atlanta, GA.

Zhang, D., Allen, J.J. (2019, September). *A Comparison of Nomothetic and Individualized Alpha Frequency Approaches to Measuring Frontal EEG Alpha Asymmetry.* Poster presented at Society for Psychophysiological Research's 2019 convention in Washington D.C..

Zhang, D., Shi, Y., Wang, H. & Teachman, B.A. (2017, November). *Predictors of Attrition in a Public Online Interpretation Training Program for Anxiety.* Poster presented at Association for Behavioral and Cognitive Therapies' 2017 convention in San Diego, CA.

Werntz, A.J., **Zhang, D.**, Geyer, E. & Teachman, B. A. (2017, November). *Am I anxious?: Implicit and explicit self-concepts of anxiety predict symptom acknowledgement.* Poster presented at Association for Behavioral and Cognitive Therapies' 2017 convention in San Diego, CA.

Calicho-Mamani, C., **Zhang, D.**, Blaisdell, K.N., Friedmann, C.I., Werntz, A.J.& Teachman, B.A. (2017, November). *Gender and Age Differences in Social Media Advertising Reception: Using Facebook to Promote Free, Web-Based Interventions.* Poster presented at Diversifying Scholarship at UVA Interdisciplinary Conference in Charlottesville, VA.

Calicho-Mamani, C., **Zhang, D.**, & Teachman, B.A. (2017, August). *Responding and Flexibility: Relationship between Variability on Interpretation Bias Measures and Anxiety and Depressive Symptoms.* Poster presented at University of Virginia Summer Research Symposium in Charlottesville, VA.

Bacon, G., Teachman, B.A., **Zhang, D.** (2017, August). *The Impact of Education Level on Drinking Identity.* Poster presented at University of Virginia Summer Research Symposium in Charlottesville, VA.

Matsuba, M., **Zhang, D.**, Graham, A., Hong, J., Dorfman, M. & Chen, X. (2014, August). *Analysis of Universal and Culture-Specific Negative Coping in Chinese Immigrants with Schizophrenia.* Poster presented at American Psychological Association's 2014 convention in Washington, D.C..

Zhang, D., Luguya, C., Chhuon, R., Wang, L. & Matsuba, M. (2013, August). *'Excessive Thinking' as a Cultural Idiom Used by Chinese to Explain Relatives' Psychiatric Etiology.* Poster presented at American Psychological Association's 2013 convention in Honolulu, HI.

Zhang, D. (2012, November). *Chinese Adolescence Depression and Identity Formation.* Poster presented at International Education Week at Teachers College, Columbia University, New York, NY.

Honors and Awards

Galileo Circle Scholars   *Year of 2022*
University of Arizona, College of Science

Departmental Scholarship   *Spring 2021*
University of Arizona, Department of Psychology

GPSC Research and Project Grants   *Fall 2019*
University of Arizona, Graduate & Professional Student Council (GPSC)

GPSC Travel Grants   *Summer 2019*
University of Arizona, GPSC

Departmental Scholarship   *Spring 2019*
University of Arizona, Department of Psychology

Flexibility Fund Awards   *Dec. 2018*
Academy of Psychological Clinical Science

Graduate Student Fellowship   *Aug. 2018 - Present*
University of Arizona, Department of Psychology

Research Experience

Research Assistant   *Aug. 2022 – Present*
TomCat Project, **University of Arizona**   Tucson, AZ
Supervisors: Emily Butler, Ph.D., Kobus Barnard, Ph.D. & Adarsh Pyarelal, Ph.D.

- Employed psychophysiology modalities including EEG, EKG, fNIRS for collaborative teamwork research.

Graduate Assistant   *Aug. 2018 – Present*
Psychophysiology Lab, **University of Arizona**   Tucson, AZ
Supervisors: John J.B. Allen, Ph.D.

- Under training of psychophysiology research methods and data analysis techniques, including EEG signal preprocessing and alpha power asymmetry analysis.

Visiting Researcher   *Jun. 2019 – Sept. 2019*
Penn Computational Cognitive Neuroscience Lab, **University of Pennsylvania**   Philadelphia, PA
Supervisors: Anna Schapiro, Ph.D.

- Developed and extended previous neural network models for mimicking memory reconsolidation during sleep to include emotional valence representation.
- Used the developed model to simulate memory reconsolidation process of emotional materials for both "depressive" and "normal" conditions as hypothesis testing for etiology theories of depression.

Project Coordinator   *Jun. 2015 – Jul. 2018*
Program for Anxiety, Cognition, and Treatment (PACT) Lab, **University of Virginia**   Charlottesville, VA
Supervisor: Bethany Teachman, Ph.D.

- Developed and managed the MindTrails Project, an online platform for testing and delivering novel Cognitive Bias Modification (CBM) interventions for anxiety disorders, with a reach over 2,500 participants.
- Developed programs and packages in Python and R to automatize data management, data cleaning, and analyses for multiple research studies to ensure data integrity and streamlining data preparation. (See **Github**).
- Recruited participants, analyzed research data and facilitated grant writings for multiple grant applications which resulted in a R01 grant.
- Programmed and managed online studies with Project Implicit and Amazon Mechanical Turk to assist graduate students' research projects.
- Recruited, trained and supervised research assistants for daily lab tasks, including participant recruitment, data management, data cleaning, and programming.
- Administrated study IRBs, dataset codebooks, experiment documentations, and lab supplies to enable smooth lab functioning.

Other collaborative projects at UVA:

- Extended the current computational model of the hippocampus, to achieve a higher level of temporal resolution in simulation with Matlab/C++, with Professor William Levy.
- Applied machine learning (ML) algorithms on MindTrails datasets for multiple research topics, including users' dropout prediction and subgroup classification, with Professor Hongning Wang.
- Modeled participants' mood fluctuations with datasets from an ecological momentary assessment (EMA) study to predict optimized-timing for intervention, with Professor Laura Barnes' group.
- Programmed fMRI studies with PsychoPy to facilitate lab transition from Matlab to Python, with Professor James Coan.

Research Assistant
Jan. 2013 – Jun. 2014

Langone Medical Center, **New York University** & **Bellevue Hospital Center** — New York, NY

Supervisors: Isaac Robert Galatzer-Levy, Ph.D. & Uzma Samadani, M.D., Ph.D.

Research project for establishing model to predict PTSD in early stage.

- Assessed concussion or other trauma patients in emergency room (ER) to recruit eligible participants for research.
- Operated Eye-tracker to collect research data.
- Reviewed literature and collected trauma-related scales to facilitate experimental design.
- Administered data and case management including data entry, updating research logs, tracking new patients from patient regulation system and arranging further research appointment to assist project operation.

Research Assistant: Summer Intern
Jun. 2013 – Aug. 2013

CEDAR Clinic, **Beth Israel Deaconess Medical Center** — Boston, MA

Supervisor: Kristen Woodberry, M.S.W., Ph.D.

Research project for understanding prodromal phrase of early onset schizophrenia.

- Setup EEG, biofeedback equipments and experiment environment for study data collection.
- Assessed clients with SIPS to recruit participants for research study.
- Organized interview toolkits and salivation and blood collecting kits to support study recruitment.
- Reviewed research articles and feedbacks from reviewers to assist grant application.
- Established online surveys to collect feedback about research outcome to help design future researches.
- Applied administrative tasks including case management, case follow up and data management to support center daily running.

Research Assistant: Summer Intern
May 2013 – Aug. 2013

Department of Psychology, **Harvard University** — Cambridge, MA

Supervisors: Jill Hooley, D.Phil. & Kenneth Allen, Ph.D.

Research project for underpinning relationship between cognitive deficits and Non Suicidal Self Injury.

- Operated portable EEG, delivered assessment (WAIS, etc.) and cognitive tests (Iowa Gambling Test, etc.) to collect experimental data.
- Scored questionnaires with Excel to establish dataset, calculated first-step research outcome and helped generate preliminary conclusion for research project.
- Coded case subjective responses to PANAS questions, discussed and proposed new ideas based on collected data to extend research project with further hypothesis.
- Conducted literature review on neuroimaging researches with fMRI targeting Default Mode Network to facilitate proposal writing.
- Organized case files, entered and cleaned up data to help with data management, storage and prepare for later analysis.

Clinical Experience

Therapist Trainee   *Jul. 2021 - Oct. 2022*
EPICenter, Banner Health   Tucson, AZ
Supervisor: Cristian Garcia, Ph.D.; Gustavo Perez, Ph.D.
Severe mental health outpatient clinic for early psychosis intervention

- Provided Evidence Based Treatments (including Cognitive Behavioral Therapy and Acceptance and Commitment Therapy) via individual therapy to improve client's psychosis symptoms and life quality.
- Provided group therapy for clients to implement social skill training and CBT for psychosis to facilitate clients' recovery.

Clinical Assessment Trainee   *Jan. 2019 - Present*
Department of Psychology, University of Arizona   Tucson, AZ
Supervisor: John J.B. Allen, Ph.D.
Suicidal risk assessment for Psy 150 mental health screening.

- Assessed suicidal risk for freshmen who were identified as high risk at the Psy 150 mental health screening to promote campus mental health.

Therapist Trainee   *Sept. 2018 - Aug. 2021*
Behavioral Health Clinic, University of Arizona   Tucson, AZ
Supervisor: Samantha Reznik, M.A.; Autumn Wiley-Hill, Ph.D.
Clinical Assessment and Therapy Training Program

- Provided Evidence Based Treatments (including Cognitive Behavioral Therapy and Acceptance and Commitment Therapy) via individual therapy to alleviate clients' panic attacks and adjustment issues.

Group facilitator trainee   *Jan. 2020 - May 2020*
Pima County Juvenile Court Center   Tucson, AZ
Supervisor: Caroline Shanholtz, M.A.; Erika Lawrence, Ph.D.
BREAK: an ACT-based Intervention Program

- Facilitate ACT-based intervention group for youths in probation to provide psycho-education and life coping skills.

Clinical Neuropsychology trainee   *Sept. 2019 - Dec. 2019*
Watermark Retirement Communities   Tucson, AZ
Supervisor: Johnny Vanuk, M.A.; Matthew Grilli, Ph.D.
Clinical Neuropsychology Assessment Training Program

- Administered, scored neuropsychological assessments (Trail Making Test, Rey Auditory Verbal Learning Test, etc.) and provided report and feedback for elders in a retirement community.

Clinical Assessment Trainee   *Jan. 2019 - May 2019*
Casa de Vida, La Frontera Center   Tucson, AZ

Supervisor: Kathleen Prouty, Ph.D.
A substance abuse treatment program

- Administered, scored, and interpreted neuropsychological assessments (WAIS-IV, WMS-V, etc.) and Structured Clinical Interview for inpatient substance abuse clients.

Intern   *Sept. 2013 – May 2014*
Hamilton Madison House   New York, NY
Supervisor: Angela Yeung, Psy. D.
Personalized Recover-Orientated Services (PROS) Program

- Designed and co-led multiple training groups to assist participants who experiencing Schizophrenia or Schizoaffective disorders to ameliorate their cognitive function and prepare them for returning to the community.
- Facilitated annual assessment for participants, and updated cases and documentation to assist daily operations.
- Shadowed core staffs and sat in multiple skills-enhancement groups to gain clinical experience as a trainee.

Teaching/Mentoring Experience

Instructor   *Jan. 2020 - Jul. 2021*
PSY 450: *Drugs and the Brain*   *Winter 2021*
PSY 450: *Drugs and the Brain*   *Summer 2020*
PSY 430: *Advanced Psychological Measurement and Statistics*   *Spring 2020*

Teaching Assistant   *Aug. 2018 - Present*
PSY 290: *Psychological Research Methods*   *Spring 2022*
PSY 230: *Psychological Measurement & Statistics*   *Fall 2021*
PSY 450: *Drugs and the Brain*   *Summer 2021*
PSY 326: *Human Memory*   *Spring 2021*
PSY 480: *Forensic Psychology*   *Fall 2020*
PSY 381: *Abnormal Psychology*   *Fall 2019*
PSY 352 : *Personality*   *Spring 2019*
PSY 150A: *Structure of Mind & Behavior*   *Fall 2018*

Workshops
Data Management and Analysis with R - a Five Sessions Bootcamp   *Summer 2017*

Mentoring
Undergraduate Research Assistant
Chloe Susannah Mei Cobb, *University of Arizona*   *Sept. 2021 - May 2022*
Cecelia Guthrie, *University of Arizona*   *Jan. 2020 - May 2021*
Erin Lessie, *University of Arizona*   *Jan. 2020 - May 2021*
Marissa Luna, *University of Arizona*   *Jan. 2020 - Sept. 202*
Valentina Andrea Correa Castillo , *University of Arizona*   *Jan. 2020 - May 2020*
Qihan Hu, *University of Arizona*   *Aug. 2019 - May 2020*
Yeuk Hei Ng, *University of Arizona*   *Aug. 2019 - Dec. 2020*
Hualiang Qin, *University of Arizona*   *Aug. 2019 - May 2020*
Maryam Farooqui, B.S., *University of Virginia Class of 2017*   *Aug. 2017 - May 2018*
Kaitlin Wray, B.S., *University of Virginia Class of 2017*   *Aug. 2017 - May 2018*
Kellyn Blaisdell, B.S., *Princeton University Class of 2016*   *Aug. 2017 - May 2018*
Casey Michelle Baker, *University of Virginia Class of 2018*   *Jun. 2017 - May 2018*
Claudia Patricia Calicho-Mamani, *University of Virginia Class of 2018*   *Jun. 2017 - May 2018*
Imani Nichols, B.S., *University of Virginia Class of 2017*   *Sep. 2016 - May 2018*

Graduate Research Assistant
Anyi Zhang, M. Eng, *Graduate School of Engineering, University of Virginia*   *Jan. - Jun. 2017*

Committee/Departmental Leadership

Member, **Psychology Departmental Orientation Committee, University of Arizona**   *Aug. 2020 - Present*
Member, **Psychology Departmental Research Committee, University of Arizona**   *Sept. 2021 - Dec. 2022*
Member, **Psychology Colloquium Committee, University of Arizona**   *Sept. 2021 - May 2022*

Conference Attendance

Computational Psychiatry Course Zurich 2021 in Zurich, Switzerland (Online)   *Oct. 2021*

Society for Psychophysiological Research's 2019 convention in Washington, DC   *Nov. 2019*

Association for Behavioral and Cognitive Therapies' 2017 convention in San Diego, CA   *Nov. 2017*

Association for Behavioral and Cognitive Therapies' 2016 convention in New York, NY   *Oct. 2016*

Social & Affective Neuroscience Society Annual Meeting 2016 in New York, NY   *Apr. 2016*

Association for Behavioral and Cognitive Therapies' 2015 convention in Chicago, IL   *Nov. 2015*

Social & Affective Neuroscience Society Annual Meeting 2015 in Boston, MA   *Apr. 2015*

American Psychological Association's 2014 convention in Washington, D.C.   *Aug. 2014*

Depression Among Asian Americans Conference in Edison, NJ   *Apr. 2013*

The 30th Annual Teachers College Winter Roundtable Conference in New York, NY   *Feb. 2013*

Professional Associations

Member, **Society for Psychophysiological Research**   *Sept. 2019 – Sept. 2020*
Member, **Association for Behavioral and Cognitive Therapies**   *Oct. 2015 – Oct. 2018*
Member, **The Social and Affective Neuroscience Society**   *Apr. 2015 – Apr. 2017*
Member, **Psi Chi National Honor Society in Psychology**   *Mar. 2013 – May 2014*
Vice President, **International Students' Psychology Association at Columbia University** *Aug. 2013 – May 2014*

Professional Skills

Experienced Working Environment: Mac OS, MS Windows & Linux
Programming Languages: Python, R, Matlab, Go & LaTeX
Online Service Package: Amazon Mechanical Turk, Qualtrics & Surveymonkey

References Available Upon Request