

EDUCATION

M.S., Data Science

June 2023 – Present

Bellevue University (BU)
College of Science and Technology
BU Current GPA: 4.0

B.A., *summa cum laude*, Psychology

Aug. 2019 – May 2021

University of Colorado Colorado Springs (UCCS)
College of Letters, Arts, and Sciences
Minor: Cognitive Studies
UCCS Overall GPA: 4.0
Outstanding Undergraduate Psychology Student, Spring 2021

A.S./A.A., Psychology

Aug. 2016 – May 2018

Mid-Plains Community College (MPCC)
MPCC Overall GPA: 4.0

CURRENT POSITION

Clinical Health, Emotion, and Neuroscience (CHEN) Lab

July 2023 – Present

University of Nebraska Medical Center (UNMC), Omaha, NE

Job Title: Clinical Research Associate

Director: Kuan-Hua Chen, Ph.D.

- The CHEN lab assesses dyadic social and emotional processes between individuals experiencing dementia and their caregivers/care partners. Multimodal imaging, using MRI, MEG, and EEG techniques, along with assessing psychophysiology and utilizing wearable devices, are implemented to collect high-quality brain data. Participants are also given questionnaires to assess general health and functioning. Our goal is to ultimately improve the lives of both urban and rural populations of people with dementia and their caregivers.
- Responsibilities include recruiting participants, scheduling and coordinating research appointments, administering behavioral and clinical measures, assisting in the facilitation of neuroimaging techniques (e.g., placing electrodes for EEG), entering and analyzing data, helping code research tasks, and pre-processing neuropsychological data.

PUBLICATIONS

Manuscripts

1. Blair, R.J.R., Bashford-Largo, J., **Dominguez, A.J.**, Hatch, M., Dobbertin, M., Blair, K.S., Bajaj, S. (2024). Using machine learning to determine a functional classifier of retaliation and its association with aggression. *Journal for the American Academy of Child & Adolescent Psychiatry*. <https://doi.org/10.1016/j.jaacop.2024.04.007>
2. Bashford-Largo, J., Blair, R.J.R., Blair, K.S., Dobbertin, M., Elowsky, J., **Dominguez, A.**, Hatch, M., Bajaj, S. (2024). Cortical volume alterations in the limbic network in adolescents with high reactive aggression. *Development and Psychopathology*. <https://doi.org/10.1017/S0954579424000750>
3. Zhang, R., Blair, R.J.R., Blair, K.S., Dobbertin, M., Elowsky, J., Bashford-Largo, J., **Dominguez, A.J.**, Hatch, M., Bajaj, S. (2023). Reduced grey matter volume in adolescents with conduct disorder: A region-of-interest analysis using multivariate generalized linear modeling. *Discover Mental Health*. <https://doi.org/10.1007/s44192-023-00052-3>
4. Bashford-Largo, J.*, Nakua, H.*, Blair, R.J.R., **Dominguez, A.**, Hatch, M., Blair, K.S., Dobbertin, M., Ameis, S., Bajaj, S. (2023). A shared multivariate brain-behavior relationship in a transdiagnostic sample of adolescents. *Biological Psychiatry: CNNI*. <https://doi.org/10.1016/j.bpsc.2023.07.015>
5. Bashford-Largo, J., Blair, R.J.R., Blair, K.S., Dobbertin, M., **Dominguez, A.**, Hatch, M., Bajaj, S. (2023). Identification of structural brain alterations in adolescents with depressive symptomatology. *Brain Research Bulletin*. <https://doi.org/10.1016/j.brainresbull.2023.110723>
6. Bajaj, S., Blair, K.S., Dobbertin, M., Patil, K.R., Tyler, P.M., Ringle, J.L., Bashford-Largo, J., Mathur, A., Elowsky, J., **Dominguez, A.**, Schmaal, L., Blair, R.J.R. (2023). Machine learning based identification of

structural brain alterations underlying suicide risk in adolescents. Discover Mental Health.

<https://doi.org/10.1007/s44192-023-00033-6>

7. Dobbertin, M., Blair, K.S., Carollo, E., Blair, J., **Dominguez, A.**, Bajaj, S. (2023). Neuroimaging alterations of the suicidal brain and its relevance to practice: An updated review of MRI studies. *Frontiers in Psychiatry*. <https://doi.org/10.3389/fpsyt.2023.1083244>

Abstracts

1. Okun, M., Sollenberger, A., Raval, F., **Dominguez, A.**, Dupy, C., Feliciano, L. (2024). Anxiety and poor sleep quality are associated with cortisol in university students during the COVID-19 pandemic. *Psychoneuroendocrinology*. <https://doi.org/10.1016/j.psyneuen.2023.106909>
2. **Dominguez, A.J.**, Hatch, M., Blair, R.J.R., Bashford-Largo, J., Blair, K., Dobbertin, M.D., Bajaj, S. Atypical brain morphometry in youth with elevated PTSD symptoms. *Journal of the American Academy of Child & Adolescent Psychiatry*. <https://doi.org/10.1016/j.jaac.2023.09.238>
3. Hatch, M., **Dominguez, A.J.**, Bashford-Largo, J., Blair, R.J.R., Blair, K., Dobbertin, M.D., Tyler, P., Bajaj, S. Association between region-specific structural brain alterations and real-time aggression in youth. *Journal of the American Academy of Child & Adolescent Psychiatry*. <https://doi.org/10.1016/j.jaac.2023.09.008>

PUBLICATIONS UNDER REVIEW

1. Bashford-Largo, J., Blair, R.J.R., Blair, K.S., Dobbertin, M., Elowsky, J., **Dominguez, A.**, Hatch, M., Bajaj, S. Cortical volume alterations in the limbic network in adolescents with high reactive aggression. (*Developmental Psychopathology*).
2. Blair, R.J.R., Bashford-Largo, J., **Dominguez, A.**, Dobbertin, M., Blair, K.S., Bajaj, S. Machine learning specified functional classifier of reward responsiveness and association with adolescent psychiatry symptomatology. (*Biological Psychiatry*).
3. Bajaj, S., Lukoff, J., Bashford-Largo, J., Elowsky, J., Dobbertin, M., **Dominguez, A.**, Hatch, M., Blair, R.J.R., Blair, K.S. Differential associations of childhood externalizing constructs and head motion during functional MRI acquisition. (*Imaging Neuroscience*).
4. Blair, K.S., Bajaj, S., Zhang, R., Bashford-Largo, J., Mathur, A., Elowsky, J., **Dominguez, A.**, Emmert, A., Tyler, P., Dobbertin, M., Tottenham, N., Blair, R.J. Atypically increased threat responding in adolescents who have experienced abuse is ameliorated following stay in residential care. (*Psychological Medicine*).

PROFESSIONAL PRESENTATIONS

1. **Dominguez, A.**, Martinez, M., Dotov, D., Ferrer, E., Haase, C., Chen, K.-H., Levenson, B. (2024, Mar.). Determining the optimal bin size for computing physiological linkage. Poster presented at Society for Affective Science. (New Orleans, LA).
2. Kiely, M., **Dominguez, A.**, Otero, M.C., Verstaen, A., Brown, C., Chen, K.-H., Levenson, B. (2024, Mar.). Emotion recognition impairments in dementia and lower caregiver-care recipient physiological linkage. Poster presented at Society for Affective Science. (New Orleans, LA).
3. **Dominguez, A.**, Hatch, M., Bashford-Largo, J., Blair, R.J.R., Blair, K.S., Dobbertin, M., Bajaj, S. (2023, Oct.). Atypical brain morphometry in youth with elevated PTSD symptoms. Poster presented at American Academy of Child and Adolescent Psychiatry. (New York, NY).
4. Hatch, M., **Dominguez, A.**, Bashford-Largo, J., Blair, R.J.R., Blair, K.S., Dobbertin, M., Tyler, P., Bajaj, S. (2023, Oct.). Association between region-specific structural brain alterations and real-time aggression in youth. Poster presented at American Academy of Child and Adolescent Psychiatry. (New York, NY).
5. Okun, M., Sollenberger, A., Raval, F., **Dominguez, A.**, Dupy, C., Feliciano, L. (2023, May). Anxiety and poor sleep quality are associated with cortisol in university students during the COVID-19 pandemic. Poster presented at Sleep. (Indianapolis, IN).
6. Bashford-Largo, J., Blair, R.J.R., Blair, K.S., Dobbertin, M., Elowsky, J., **Dominguez, A.**, Hatch, M., Bajaj, S. Cortical volume alterations in the limbic network in adolescents with high reactive aggression. Poster accepted for presentation at 2023 Post-Doctoral Research Symposium at Boys Town.
7. Bashford-Largo, J., Zhang, R., Mathur, A., Elowsky, J., **Dominguez, A.**, Dobbertin, M., Blair, R.J.R., Blair, K.S., Bajaj, S. (2023, Apr.). Cortical brain alterations in the limbic network and reactive aggression in adolescents. Poster presented at Society of Biological Psychiatry. (San Diego, CA).

8. Bashford-Largo, J., Blair, K., Dobbertin, M., Blair, R.J.R., Elowsky, J., Mathur, A., **Dominguez, A.**, Bajaj, S. Cortical thickness alterations in the default mode network predict aggression scores. Poster accepted for presentation at 2022 Society for Neuroscience.
9. Mathur, A., Blair, R.J.R., Dobbertin, M., Blair, K.S., Bashford-Largo, J., Elowsky, J., **Dominguez, A.**, Bajaj, S. Adolescent aggression and changes in brain structure: A machine-learning approach. Poster accepted for presentation at 2022 Society for Neuroscience.
10. Bajaj, S., Blair, R.J.R., Dobbertin, M., Bashford-Largo, J., Mathur, A., Elowsky, J., **Dominguez, A.**, Blair, K.S. Machine learning based identification of cortical and subcortical structural brain alterations underlying childhood neglect in adolescents: A whole-brain analysis approach. Poster accepted for presentation at 2022 International Society for Traumatic Stress Studies.
11. **Dominguez, A.**, Blair, J., Bajaj, S., Bashford-Largo, J., Zhang, R., Mathur, A., Elowsky, J., Tyler, P., Dobbertin, M., Blair, K. (2022, May). Associations between severity of AUD and CUD symptoms and CU traits, irritability, instrumental and reactive aggression, and BOLD responses during retaliation. Poster presented at Society for the Scientific Study of Psychopathy. (Virtual Conference).

RESEARCH EXPERIENCE

Multimodal Clinical Neuroimaging Laboratory (MCNL)

July 2022 – July 2023

Boys Town National Research Hospital (BTNRH), Boys Town, NE

Job Title: Research Assistant

Director: Sahil Bajaj, Ph.D.

Young Brains and the Science of Emotions:

- Assisted in building and creating the new protocol, including preparing the IRB application forms, preparing IRB change requests, gathering needed questionnaires and other materials for the IRB, maintaining communication with the IRB, creating new projects on REDCap, and building the instruments on REDCap.
- Recruited participants aged 10-18 from the Family Home Program and surrounding Omaha community.
- Scheduled screen, scan, and medical clearance appointments with the participants, families, and staff physician.
- Maintained contact with the research physician and clinician, MRI techs, and Family Homes to ensure participants were safe and able to attend research appointments.
- Maintained rapport with Boys Town youth, of whom may have histories of drug use, abuse, and/or violence, to ensure continued voluntary participation.
- Abided by and applied safety measures when around all participants but especially the high-risk youth at Boys Town.
- Administered youth and parental behavioral and clinical assessments (e.g., WASI-II, CTQ, CDI, SDQ, CBCL, RPQ, ICU, PSCD, SPS, C-SSRS, etc.) and cognitive, executive functioning, and computer tasks.
- Input and analyzed data via REDCap, SPSS, and Excel.
- Assisted MRI techs in running MRI scan appointments, including communicating with the participant while in the scanner, setting up the computers, collecting data, and administering post-scan questions with the youth.
- Pre-processed MRI data.
- Performed administration tasks, such as paying participants for participation, keeping track of office/research supplies to order, organizing travel for lab members, and paying publication and conference abstract fees.
- Prepared and presented lab meeting agendas to keep everyone up to date with goings on, as well as presented various topics during lab meetings.
- Prepared and assisted with editing and writing manuscripts.
- Attended various training events, including MEG and MRI bootcamp.

Center for Neurobehavioral Research (CNR)

July 2021 – July 2022

BTNRH, Boys Town, NE

Job Title: Research Assistant

Directors: James Blair, Ph.D. / Karina Blair, Ph.D.

Affiliated Labs at the Center for Neurobehavioral Research:

Multimodal Clinical Neuroimaging Laboratory (MCNL)

Program for Trauma and Anxiety (PTAC)

Boys Town Success:

- Recruited participants aged 10-18 from the Family Home Program and surrounding Omaha community.
- Scheduled screen, scan, and medical clearance appointments with the participants, families, and staff physician.
- Maintained contact with the research physician and clinician, MRI techs, and Family Homes to ensure participants are safe and able to attend research appointments.
- Maintained rapport with Boys Town youth, of whom may have histories of drug use, abuse, and/or violence, to ensure continued participation.
- Abided by and apply safety measures when around all participants but especially the high-risk youth at Boys Town.
- Administered youth and parental behavioral and clinical assessments (e.g., WASI-II, CTQ, UCLA, CDI-2, SDQ, CBCL, RPQ, ICU, PSCD, C-SSRS, etc.) and cognitive, executive functioning, and computer tasks.
- Input and analyze data via REDCap, SPSS, and Excel.
- Assisted MRI techs in running MRI scan appointments, including communicating with the participant while in the scanner, setting up the computers, executing scan tasks, collecting data, and administer post-scan questions with the youth.
- Pre-processed MRI data.
- Performed administration tasks, such as paying participants for participation, keeping track of office/research supplies to order, organizing travel for lab members, and paying publication and conference abstract fees.
- Prepared and presented lab meeting agendas to keep everyone up to date with goings on, as well as presented various topics during lab meetings.
- Prepared and assisted with editing and drafting manuscripts.

HEAL/hBCD (Healthy Brain Cognitive Development)

- Recruited pregnant, adult females and families with newborns and infants (1-4 per week).
- Screened participants for eligibility and schedule medical clearances with the staff physician and MRI appointments.
- Maintained daily contact with the staff physician and families to ensure MRI safety.
- Maintained rapport with families, of whom some experienced mental illness, drug use, and/or family violence.
- Assisted in the fMRI resting state scan.
- Organized and input data into REDCap and Excel.

Language and Memory Processes (LAMP) Laboratory

Aug. 2020 – Present

UCCS, Colorado Springs, CO 80918

Title: Undergraduate Research Assistant / Current Virtual Volunteer

Research Supervisor: Lori James, Ph.D.

- Assist graduate students in collecting research data via Zoom (COVID-19) with participants, administer consent forms and tasks via Qualtrics.
- Assist in analyzing raw audio data via Excel and Audacity.
- Prepare manuals on analyzing data for future RAs.
- Attend and prepare material for monthly lab meetings.

Sleep and Biobehavioral Health Research Laboratory
UCCS, Colorado Springs, CO 80918

Aug. 2020 – May 2021

Title: Undergraduate Research Assistant Volunteer

Research Supervisor: Michele Okun, Ph.D.

- Contacted interested participants and enrolled them in the study.
- Scheduled appointments for collection material pick-up and drop-off and went over instructions for the study.
- Met with participants for collection material pick-up and drop-off.
- Assisted in the preparation and editing of conference abstracts with lab data.
- Helped draft and edit a manuscript.

Biobehavioral Substance Mechanisms and Related Treatments (B-SMART) Laboratory
University of Nebraska-Lincoln (UNL), Lincoln, NE 68501

Nov. 2022

Title: Research Volunteer

Research Supervisor: Dennis McChargue, Ph.D.

- Assisted in the setup onsite of the somatic avatar project, helping people struggling with drug abuse at the House of Hope Residential Treatment Facility to process and recognize emotions through avatar-guided yoga.
- Prepared payments for participants.
- Assisted in the building and logic writing of the Qualtrics project.

CLINICAL EXPERIENCE

Boys Town National Research Hospital
Boys Town, NE 68010

July 2021 – July 2023

- Interacted with the youth from the Family Home Program during clinical screens and MRI scans.
- Responsible for youth safety during all research appointments.
- Administered clinical scales, such as suicide questionnaires (C-SSRS, SPS, SBQ-R).
- Shadowed staff psychiatrist, Dr. Matthew Dobbertin, while doing outpatient and inpatient psychiatry appointments for one week (~40 hours) in September 2022.

Trumpet Behavioral Health
Colorado Springs, CO 80918

Oct. 2018 – Apr. 2019

Registered Behavioral Technician (RBT)

- Attended 40+ hours of RBT training prior to working with clients.
- Implemented clinician-made personalized intervention plans (PIPs) with each client with autism, most of whom were around the age of 8.
- Recorded and organized data of various incidents which were personalized to the client, such as completing a task, manding, making eye contact, tantrums, yelling, and different forms of aggression.
- Shadowed and had other RBTs and clinicians observe sessions with novel and existing clients.
- Worked alongside other RBTs to ensure the treatment plans of clients were being maintained and progress was occurring.
- Reinforced desired behaviors by providing things such as praise, snacks, play time, etc.
- Discussed the clients' progress daily with parents and clinicians to maintain contact and rapport.
- Attended school days with one client, while helping them to complete homework, have proper interactions with other youth, and stay on task.
- Worked to de-escalate intense aggressive or dangerous situations with other RBTs, clinicians, and teachers.

PROFESSIONAL AFFILIATIONS

Current Affiliations:

Society for Affective Science Member

Past Affiliations:

National Honors Society of Leadership and Success

National Society of Collegiate Scholars

Phi Theta Kappa

Psi Chi Psychology Honors Society

President's List (During All Semesters at UCCS)

PROFESSIONAL SKILLS

Software/Interfaces: Microsoft Office, SPSS, AFNI, CONN, E-Prime, Jupyter, RStudio, PyCharm, AWS

Research Tools: REDCap, Tableau, COINS, Qualtrics

Programming Languages: Python, R, MATLAB, SQL