Analicia Howard

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EDUCATION:

University of Colorado- Boulder 2026 (expected)
Behavioral, Psychiatric, and Statistical Genetics

University of Puget Sound 2016
B.S. in Biochemistry

RESEARCH EXPERIENCE:

Predoctoral Student, University of Colorado Boulder 2022-present
Institute for Behavioral Genetics

Senior Clinical Research Assistant, Oregon Health and Sciences University (OHSU) 2019-2022
Adolescent Brain and Cognitive Development (ABCD) Study
Developmental Brain Imaging Lab
- Genetics Workgroup Trainee Member
- Responsible for the training of new staff members and of continuing training of current staff members
- MRI scan operator working to run T1 and T2-weighted, DTI, and BOLD sequence fMRI scans
- Phlebotomy-trained to obtain blood samples from participants for epigenetic DNA analysis as well as comprehensive blood cell counts
- Administration of neuropsychological assessments and neurocognitive batteries for adolescents
- Collection and processing of biological samples for analysis: including saliva for DNA and hormonal analysis, as well as urine, hair, and teeth for analysis of substance use exposure
- Image analysis and abstraction through AFNI

Research Assistant II, OHSU 2017-2019
Developmental Brain Imaging Lab
- Administration of neuropsychological assessments and neurocognitive batteries for adolescents
- Collection and processing of biological samples for analysis: including saliva for DNA and hormonal analysis, as well as urine, hair, and teeth for analysis of substance use exposure

Research and Academics Volunteer, OHSU 2017
Developmental Brain Imaging Lab
- MRI scan assistant working to run E-Prime based cognitive and behavioral assessments for adolescents during fMRI scans for ABCD and At-Risk studies in the Developmental Brain Imaging Lab

Research and Academics Volunteer, OHSU   2016-2017
Spina Bifida Clinic as part of the National Spina Bifida Registry
- Assisted with IRB continuing review and new document approval process through OHSUs eIRB system
- Assisted with data collection, survey administration, and data entry for the purpose of tracking longitudinal outcomes on the CDC funded Spina Bifida Research Study
- Assisted with implementation of a sub-study tracking urology-related outcomes in Spina Bifida population

Student Researcher, Neuroscience Methods Course, University of Puget Sound   2016
- How does embryonic stress in *Drosophila melanogaster* affect the concentration of dopaminergic neurons in 2nd instar larvae?
  - Dissected dozens of larval brains and stained for dopaminergic receptors using tyrosine-hydroxylase primary antibodies and other immunohistochemical techniques
  - Quantified the number of receptors in the larval brains under a fluorescent microscope

Summer Research Grant Recipient, University of Puget Sound   2014
- Mapping the pathway through which Bisphenol-A disrupts the Gonadotropin releasing Hormone neurons in the teleost fish *Oryzias latipes.*
  - Proposed identification of a possible thyroid- hormone receptor pathway through which BPA disrupts the GnRH neurons
  - Proposed analysis of results of 50+ fish via larval brain fixation, cryostat sectioning, and through observation under a fluorescent microscope

POSTERS, PUBLICATIONS, and PRESENTATIONS:

Howard, A.K., Jones, S.A., Mooney, M.A., Nagel, B.J., Nigg, J.T. "Polygenic Risk Score for Major Depressive Disorder Predicts Depression Symptomology During Adolescence" submitted for poster presentation at the *Society of Biological Psychiatry* annual meeting, 2022

Kliamovich, D.R., Del Giacco, A.C., Jones, S.A, Gaillard, M., Lopes Flores, A., Espinoza, A., **Howard, A.K.**, Flaherty, R., Herting, M., Nagel, B.J. (in preparation). Age- and sex-related differences in susceptibility to peer influence among 11- and 12-year old children: Findings from the Adolescent Brain and Cognitive Development (ABCD) study.

PROFESSIONAL INVOLVEMNT AND MEMBERSHIPS:

ABCD Study Genetics Workgroup Member   2021

COVID-19 Scale Up Task Force for ABCD Study   2020

American Chemical Society   2015

TRAINING:

ABCD Reproducible Neuroimaging Course   2021
Hosted by Florida International University

Epigenetics Symposium 2020
Oregon Health and Sciences University

Short Course on the Genetics of Addiction 2019
Jackson Laboratories

HONORS AND AWARDS:

Travel award for Short Course in Genetics of Addiction 2019

PS Faculty Scholarship for academic achievement 2011- 2016

UEC grant for undergraduate research 2014

RELEVANT SKILLS AND LABORATORY TECHNIQUES:

- Neuroscience-related techniques:
  - Experience in: Histochemical staining, backfilling neurons, fluorescence microscopy, immunohistochemical staining, brain dissection and cryostat sectioning, T1 and T2-weighted, DTI, and BOLD sequence fMRI image acquisition
- Biology-related techniques
  - Experience in: PCR, western blot, SDS-PAGE, bright, dark, and phase contrast microscopy, gel electrophoresis, centrifugation, sterile cell culture, mutagenesis of yeast cultures, and plasmid purification
- Computational and database-related techniques:
  - Experience in: Python, R, SPSS, Git, Docker, Linux Operating System, EPIC medical records system, AFNI, and E-prime
- Statistical analysis
  - Experience in: Linear mixed effects models, general additive mixed effects models, factor analysis, principal component analysis