

Q18.

MSU-PDA Travel Award - Application Portal

FALL 2020 TRAVEL AWARD

Awards are granted to offset the costs associated with travel to meetings/conferences/workshops where the applicant will present work stemming from their current postdoctoral position at MSU. This award cannot be used for invited talks at universities or non-conference events (trainings, ...).

The Fall 2020 Travel Award is for attendance at conferences taking place between June 1, 2020 and November 30, 2020.

APPLICANT ELIGIBILITY

All current postdoctoral researchers at Michigan State University are eligible to apply except for:

- Current members of the MSU-PDA Steering Committee
- Individuals that have already received an MSU-PDA travel award during their time at MSU
- Individuals attending meetings/scientific conferences held at Michigan State University
- Individuals who are presenting work from their graduate program or previous position

Recipients of a Travel Award must agree to serve as reviewers for the next round of Travel Award applications.

Deadline to apply: Friday, March 27, 2020 at 5pm EST.

APPLICATION REVIEW

Applications will be scored by members of the MSU Postdoctoral Association Steering Committee and the three recipients of a Spring 2020 Travel Award, according to the evaluation rubric posted on the [MSU-PDA website](#).

Note: The review committee is composed of postdocs from various fields of study. Make sure the information provided in your application can be understood by a lay audience. We recommend limiting the use of terminology specific to your field and avoid using the abstract you submitted for the meeting/conference/workshop you plan on attending.

QUESTIONS?

Email: awards.pda@grd.msu.edu.

Please click the button below to proceed to the application.

Q21. **Personal Information**

Q1. Full Name

Sarah George

Q2. Email Address

hulber15@msu.edu

Q3. Official MSU Title (e.g., (Senior) Research Associate, Postdoctoral Fellow, Research Scholar, ...)

Research Associate

Q6. PI's Full Name

Barbara Thompson

Q20. PI's Email Address

thom1756@msu.edu

Q7. College

Human Medicine

Q8. Department

Pediatrics

Q22. **Conference Details**

Q23. Conference Title (full name, no abbreviations)

Society for Neuroscience Annual Meeting

Q24. Conference Location

Washington DC

Q25. Start Date (mm/dd/yyyy)

10/24/2020

Q26. End Date (mm/dd/yyyy)

10/28/2020

Q19. Estimated total expenses (USD)

2075

Q22. Are other funds available to support your travel to this conference (e.g., funds from a fellowship, PI, department, organizing conference)? Please describe.

This question was not displayed to the respondent.

Q10. Presentation type (please select all the apply)

Poster

Talk

Other (please describe)

Q27. Presentation Title

Use of machine learning models to predict social motivation in children with and without autism

Q12. **Abstract**

The abstract should clearly and concisely identify the aim(s)/goal(s), and main results/conclusions of the work presented. In addition, the abstract should emphasize on the importance of the research to the field and society.

Not to exceed 3000 characters (including spaces).

Do not use special characters > or < (formatting issues).

Significance: Social interactions play an important role in a child's development by providing a foundation for learning, relationships, and even employment. For individuals with neurodevelopmental disorders, such as Autism Spectrum Disorder (ASD), social deficits can negatively impact their daily interactions. Moreover, motivation to participate in these interactions is heterogeneous, making it impossible to understand with one-size-fits-all neurobiological theories and inefficient to address with one-size-fits-all interventions. Aims: Therefore, to gain a more comprehensive understanding of an individual's social motivation, our lab uses a combinatorial approach to look for characterizing features of social motivation from both a behavioral and biophysical perspectives in young children. Specifically, we investigate responses to both in-person and visual social stimuli in typically developing (TD) children and children with a diagnosis of ASD, aged 2 ½- 5 ½ years old. Methods and Results: To investigate behavioral responses to social stimuli, we utilize a novel social conditioned place preference paradigm (sCPP) developed in our lab. Using sCPP, we have previously demonstrated that social motivation in children with ASD is not only heterogeneous but can span the entire spectrum of responses ranging from aversion to reward. Moreover, we have demonstrated that these sCPP responses significantly overlap with those of typically developing children. To investigate biophysical responses to social stimuli, our lab has also created an eye-tracking task in which participants view a 6-minute video comprised of a both social and non-social scenes that vary in content. Social scenes are specifically defined as those that contain at least two humans who are interacting. From these scenes, we extract eye-gaze features including both fixation and saccade metrics. Preliminary analysis of these features has revealed that eye-gaze behavior of both TD and ASD children is significantly different between the social and non-social visual stimuli. Utilizing a combinatorial approach, we have created prediction models using machine learning classifiers to examine whether eye-gaze features can predict individual behavioral response in the sCPP paradigm. Preliminary results indicate that a subset of eye-tracking features can predict sCPP response (aversion or reward) with an accuracy of at least 80%. This exploratory project combines these measures to more comprehensively define the social motivation phenotype for each child and, in so doing, take a step toward more personalized interventions.

Q13.

Greater Context of the Current Work

Please describe the overall research with which you are involved, how it is integrated into a main focus area of your lab, what has been previously achieved, and how your current work is moving the project forward.

If applicable, also describe the applications of your work outside of your field, as well as any new or unusual technology/innovation behind the work you are presenting.

Not to exceed 2000 characters (including spaces).

Do not use special characters > or < (formatting issues).

The research focus of my lab is investigating the social and emotional neurodevelopment of young children. A main branch of that research in our lab is understanding social motivation heterogeneity in typically developing children and children with a diagnosis of Autism Spectrum Disorder (ASD). To do so, our lab implements both behavior and biophysical probes of social motivation. Much work has previously been accomplished surrounding the behavioral paradigm. For example, our lab has developed a novel social conditioned place preference (sCPP) paradigm to probe social motivation in young children both with and without ASD. Results from this paradigm reveal that underlying social motivation in children with ASD can span the range from aversion to reward and that these responses overlap with the responses of typically developing (TD) children. My work is integrated into this research focus in two ways; The first is my focus on the biophysical probe of social motivation. Specifically, our lab has also developed an eye-tracking task to probe social motivation through visual stimuli. Results from this work reveal that ASD children view social scenes differently than they do non-social scenes and, that like the results from the sCPP paradigm, these responses overlap with response from TD children. My second contribution is to combine the information from the two measures, behavioral and biophysical, using machine learning models to determine if eye-gaze behaviors are predictive of a person's sCPP response. The novel indication of these results is that there are underlying characteristics of visual scenes, tied to their social relevance, that drive gaze-behavior and seem to be linked to social preference. By bringing in state-of-the-art tools like machine learning, I advance this project by illuminating which characteristics of a visual social stimulus is driving gaze behavior, and how those gaze behaviors may be related to social motivation within our sCPP paradigm.

Q28. Importance of Attending the Conference

How will your participation in this meeting/conference/workshop support your career development and/or professional network and enable you to be more competitive in your research field?

Not to exceed 2000 characters (including spaces).

Do not use special characters > or < (formatting issues).

Support from MSU PDA in the form of this travel grant will facilitate the dissemination of my research at one of the largest conferences in my field. Last year, I presented my work at the same conference I plan to attend with this award, The Society for Neuroscience Annual Meeting, which hosted nearly 30,000 attendees. As a result, I established several new professional connections and research ideas. One of those connections was with a group from the NIH who have found a novel way to automatically parse areas of a visual scene using computer vision technologies. These strategies are directly applicable to my own work analyzing eye-tracking data on visual scenes. Because of this connection, I now have the opportunity to implement these and other similar state-of-the-art methods and improve the quality of my work. These improvements and cutting-edge strategies make it more likely that my work will be published in top journals and, therefore, be more visible in the field. Looking forward to the 2020 conference, I will continue to utilize the unique networking opportunities to forge these important interdisciplinary collaborations. As a biophysicist, I have experience working with teams that include computer scientists, engineers, psychologists, and physicians, so I am well poised to continue to foster these connections. More than just contributing to the visibility and quality of my own work, these collaborations have the potential to create highly innovative, diverse research and a deeper understanding of ASD among the scientific and medical communities. For me, this translates to potent career development opportunities. For individuals with ASD and their families, these research findings may ultimately translate into the clinic where they can have far-reaching ramifications for future interventions, treatments, and supports.

Q19.

Please click the button below to submit your application.

Location Data

Location: ([42.893402099609](#), [-85.76139831543](#)).

Source: GeolIP Estimation

