

RABLAB NEWSLETTER

UNIVERSITY OF WASHINGTON

SUMMER 2016

RABLAB is named after our principal investigator, Dr. Raphael A. Bernier. The Bernier Lab is committed to understanding the biological underpinnings of autism spectrum disorders (ASD) and other related developmental disabilities.

We use a “genetics-first approach” by identifying rare genetic variants that are likely contributing to ASD and following up with an in-depth and multi-faceted evaluation to understand the individual and the family on many levels. Following this methodology, we seek to identify meaningful subtypes of ASD in order to lead to more individualized treatments and knowledge about outcomes for people and families with ASD.



The RabLab Team, April 2016

Current Research & Awards

CURRENT STUDIES

➔ ZEBRA

We have seen over 80 families so far! We are still looking for children ages 8-17 in the greater Puget Sound area for an EEG study of brain mechanisms and behavior in ASD.

➔ TIGER

We have seen over 60 families so far! We are still looking for children ages 4 and up for a comprehensive study of particular genetic events associated with ASD.

➔ TWINS-2

We are looking for identical twin pairs ages 4 and up in which at least one twin has ASD to participate in a genetic study. In person visits to our lab are not required for participation!

➔ GABA

We are currently looking for adults ages 18-30 both with and without ASD to participate in a study of how the brain processes sensory information. Several MRI scans are required. Additionally, we will be expanding to recruit children ages 10-14 soon!

➔ ABC-CT

This is a multi-site study focused on identifying methods to better track social development and understand social communication behaviors in ASD for use in future clinical trials. We will be launching the study soon and will be looking for children ages 4-11 with and without ASD diagnoses!

➔ SFARI SPARK

The goal of the SPARK project is to collect genetic information on 50,000 individuals across the country with ASD and their families. Anyone with a diagnosis of autism can participate, and in-person visits are not required!



Dr. Bernier wins the inaugural Wayne J. Katon Outstanding Mentor Award

Dr. Bernier was the sole recipient of the Wayne J. Katon award at the annual departmental meeting in June, 2016.

According to the UW Department of Psychiatry and Behavioral Sciences, "This prestigious award acknowledges the time, dedication, and attention that faculty members devote to foster the career development and academic success of colleagues and trainees in the areas of research, clinical practice and education. The award allows the department to honor and celebrate the valuable efforts of faculty members who embody Dr. Katon's spirit of mentoring."

Anna Diss wins the 2016 Guthrie Award



Anna is a RabLab research coordinator this summer and a current UW undergraduate majoring in Psychology. The prize was established to encourage excellent writing about psychology that is both broad in scope and accessible to the non-specialist. Anna's paper, "Exploration of the Broader Autism Phenotype in Families with Autism-Related Genetic Events," was sponsored by RabLab's Dr. Jennifer Gerdts.

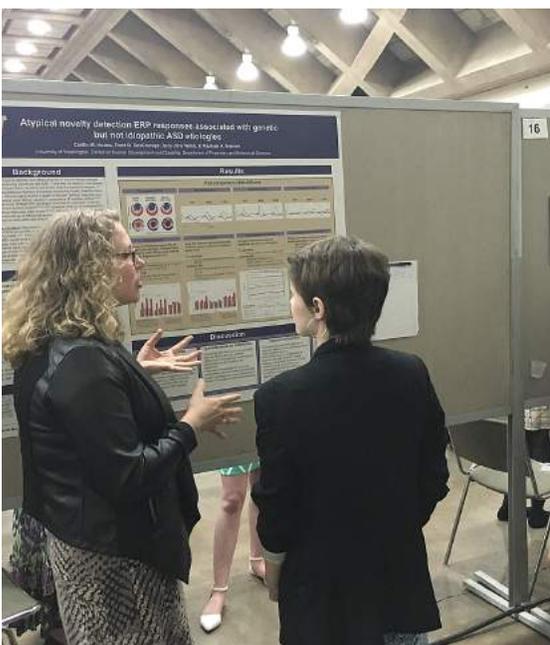
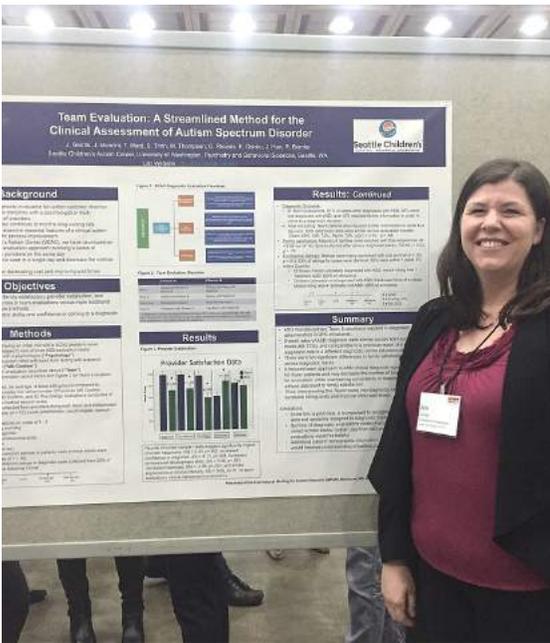
If you are interested in participating in any of our studies, please contact us at (206) 616-2889 or rablab@uw.edu!



RabLab research at IMFAR

This May, members of the Bernier Lab team went to the International Meeting for Autism Research (IMFAR) in Baltimore, MD, to present some of the research we have been working on and network with others in the field of autism research!

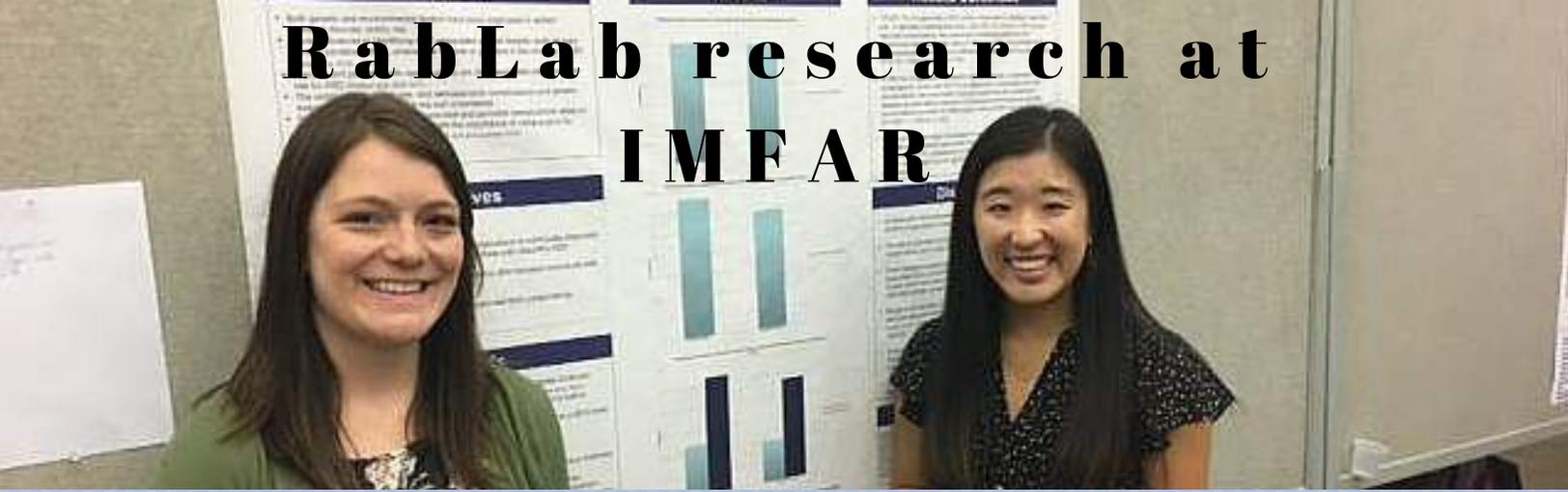
IMFAR meets every spring to discuss new research in the field of autism. Dr. Bernier is currently the Treasurer of the International Society for Autism Research, which organizes IMFAR every year. A selection of the research presented at the conference is summarized on the next page. More information and posters can be found on the RabLab website!



Photos from IMFAR:

Top: Emily Fox, Meaghan Thompson, and Anne Wolken at IMFAR
Middle: Dr. Jen Gerdts with one of her posters
Bottom: Caitlin Hudac discussing her research with attendees

R a b L a b r e s e a r c h a t I M F A R



Han, J., Wolken, A., Barber, S., & Bernier, R. (May 2016). Prevalence of prenatal and perinatal birth complications in individuals with and without ASD-associated copy number variants.

We were interested in examining how genetic events associated with ASD, like copy number variation (CNVs), are related to birth complications in individuals with ASD. This research is important because better understanding the relationship between genetic events and pre- and perinatal environments may reveal a more complete picture of ASD risk during key developmental stages. We found no significant differences in rates of birth complications between individuals with and without ASD-associated CNVs, however our sample excluded individuals with serious birth complications. Therefore, additional research is needed to uncover the interaction of prenatal factors and ASD associated CNVs.

Hudac, C.M., DesChamps, T.D., Webb, S.J., & Bernier, R.A. (May 2016). Atypical novelty detection ERP responses associated with genetic but not idiopathic ASD etiologies.

We were interested in whether there were brain differences in attention for children with and without a genetic mutation. Children watched a zoo movie while listening to tones and other short sounds, and we tested how their brain attended to the often-repeated tone (frequent condition) compared to the new sounds (novel condition). All children with autism had larger brain responses to the novel condition compared to typically developing children; however, children with a genetic mutation also had slower responses. Our results suggest that there are brain differences in attention related to genetic events, which may help us understand behaviors and brain responses for unique genetic subgroups.

Trinh, S., Goin-Kochel, R.P., & Bernier, R.A. (May 2016). Temporal Gene Expression Profiles and Behavioral Regression in Children with ASD with Post-synaptic Density Gene Disruptions.

We looked at the relationship between gene expression timing and presence of behavioral regression in individuals with ASD who have postsynaptic density gene disruptions. We found that there was a higher rate of regression in participants whose disrupted genes are typically expressed in higher levels later in development (postnatally) than those whose disrupted genes are typically expressed in higher levels earlier in development (prenatally). This research is preliminary but important in increasing our understanding of the mechanisms of regression and why some children might experience regression in development in their first three years of life while others do not.

Bio

Sandy Trinh is a third-year doctoral student in Educational Psychology specializing in the School Psychology program. When families come for their visit in the Bernier Lab, Sandy is part of the team that they work with. She works as one of the clinicians who administers interviews and behavioral assessments with children and parents. Sandy loves UW because of the strong commitment to Autism research and the world-class services and research opportunities!

Sandy came to the Bernier Lab with an interest in understanding research that quickly morphed into a passion for conducting research. After seeing how crucial research is in developing and recommending interventions that will best serve families, she is dedicated to working with the ASD community because of the potential that research in this field has to affect such a large and positive impact. Going forward Sandy hopes to explore avenues to increase access to services for individuals with ASD and their families. She hopes to conduct research that examines the efficacy of the tools used to help families receive diagnosis, education, and intervention therapies. One of the things Sandy values most about working at the University of Washington and the Bernier Lab is the vast access to intervention and education they provide families. She hopes to expand this in the local community and eventually on a larger scale to the greater ASD community.



Q&A

Q: What do you like most about working in the Bernier lab?

ST: I really enjoy working in the lab because everyone involved is so passionate and caring. We care a lot about the families and we care a lot about the science.

Q: What makes the “genetics-first approach” to ASD research so important for you?

ST: There is enormous phenotypic diversity within the ASD population. A genetics-first approach gives a different way of subtyping the population that gets us closer to linking biological mechanisms with phenotypic outcomes, ultimately resulting in more individualized treatment and care for individuals with ASD and their families.

Q: What are you looking forward to this summer?

ST: I am looking forward to lots of hiking, grilling and finally taking salsa classes at a place down the street from where I live!



Other News

The launch of the SFARI SPARK study garnered national attention, and lab members were interviewed (in both English and Spanish!) for news outlets including the Seattle Times, TIME magazine, Seattle talk radio, and Univision.

In addition to his academic publications, Dr. Bernier also wrote an opinion article for Spectrum News about the importance of play and play therapy for children with ASD.

Links to these and others articles and interviews are included on the lab website!

We launched our new website and Facebook page last month!

Please "like" and follow our official Bernier Lab Facebook page for ongoing lab activities and links to interesting, relevant news and events.

Visit our website for up-to-date study information, family resources, lab members' publications, and articles of interest!

