SOCIAL AND AFFECTIVE NEUROSCIENCE OF AUTISM LAB

Official Laboratory Newsletter

YALE CHILD STUDY CENTER

WELCOMING OUR FAMILIES BACK TO THE LAB

Welcome to our returning and new families at the Infant & Toddler Developmental Disabilities and Yale Social and Affective Neuroscience of Autism (SANA) Programs. The last several months have been a challenge for us all, and we are delighted to now offer appointments for in-person visits. We've missed seeing you and look forward to the opportunity to work with our families again.

As we reactivate our programs, we want to assure you that the health, safety and wellbeing of our families and staff is our utmost concern. Our safety precautions comply with CDC recommendations including screening, cleaning/disinfecting, social distancing, mask-wearing, and use of personal protective equipment (PPE). Please see pg. 3 for more information.

We continue to update and revise our policies as guidance is provided by the CDC and Yale's Office of Environmental Health and Safety, assuring the most current health and safety practices are in place. Before any visits are scheduled, your research visit host will review all safety precautions and procedures and answer any questions. If you have further questions or concerns, please feel free to reach out to me: *amy.margolis@yale.edu* or *sanalab@yale.edu*.

For those who have continued to work with us remotely, we are so grateful for your commitment to our work. Thank you for being a part of our research community and we look forward to seeing you soon!

From the Director

Dr. Katarzyna Chawarska, PhD

Dr. Katarzyna Chawarska is the Director of the Social and Affective Neuroscience of Autism Program and Yale Toddler Developmental Disabilities Clinic at the Child Study Center, as well as the Emily Fraser Beede Professor of Child Psychiatry at Yale School of Medicine. She is a leading expert in research on identifying early diagnostic markers and novel treatment targets in autism spectrum disorders.

Dear Colleagues, Families, and Friends,

Greetings to you as we enter Fall 2020, a time of transition as our children begin a new school year, and we enjoy cooler weather and beautiful fall foliage. In this third issue of our SANA Newsletter, we are happy to announce our re-opening for both direct clinical evaluations and in-person research participation. While the COVID-19 pandemic has prevented our team from seeing research participants in person over the past several months, our clinical staff has been conducting virtual research and clinical visits. To date, we have seen 29 research families and many clinic families remotely. It has been an absolute joy to work with our families virtually, but we are excited to have resumed our research and clinical evaluations in person!

Over the past several months, we have been working diligently to adjust our space and procedures so that we can return to providing clinical care to our families. In strict adherence to Yale University and Connecticut guidelines, we have taken innumerable precautions to ensure the safety of all (see p. 3).

We appreciate that these remain very difficult times for families, especially those with children who have developmental disorders. We are very pleased to include in this edition another wonderfully insightful piece from our esteemed Licensed Clinical Social Worker Amy Giguere-Carney, Tips for Transitioning into an Unusual School Year (p. 4-5)

Over the summer we welcomed several new staff to our group (see p. 6-7). We wish all the best to outgoing Research Fellows as they begin their graduate studies this fall: Carolyn Gershman (Georgetown University), Kohrissa Joseph (Boston University), Chaela Nutor (Emory University), Nicole Powell (Boston University), and Eukyung Yhang (Boston University).

Best wishes from all in our lab to all of you and we look forward to welcoming you back soon.

Recent Publications

Atypical Emotional Electrodermal Activity in Toddlers with Autism Spectrum Disorder

Physiological arousal was measured in toddlers with autism exposed to frustrating, pleasant, and threatening tasks. Compared to typically developing peers, toddlers with autism showed comparable arousal responses to frustrating and pleasant events, but lower responses to threatening events. Importantly, physiological arousal and behavioral expressions were aligned during frustrating and threatening events, inviting exploration of physiological arousal to measure responses to emotional challenges. Furthermore, this study advances the understanding of precursors to emotional and behavioral problems common in older children with autism.

Vernetti, A., Shic, F., Boccanfuso, L., Macari, S., Kane-Grade, F., Milgramm, A., Hilton, E., Heymann, P., Goodwin, M.S. and Chawarska, K. (2020), Atypical Emotional Electrodermal Activity in Toddlers with Autism Spectrum Disorder. Autism Research, 13: 1476-1488. doi:10.1002/aur.2374

COVID-19 SAFETY PRECAUTIONS

Below are some of the many precautions we are taking to keep our staff and families safe:

- Asking all families to answer several COVID-19 screening questions 1-2 days before scheduled appointments and again on the day of the visit. We use a touchless thermometer to take the parent's and child's temperature on the day of the visit. Anyone who has a temperature of 99.9 degrees Fahrenheit or higher or any other symptoms of COVID-19 is asked to reschedule their appointment for a later date.
- Asking all parents and children age 2 and older to wear masks for the duration of their time with us. We also provide adult and child size masks to families who do not bring their own, or whose masks don't fit properly.
- Reducing the amount of time our families need to spend on site by conducting all clinical interviews and some feedback/discussion sessions virtually and suspending the administration of certain experimental protocols.

- Requiring that all staff:
  - Complete daily symptom and temperature checks
  - Wear masks when in shared spaces
  - Maintain physical distancing (>6 feet) whenever possible
  - Wash their hands frequently with soap and water or alcohol-based hand sanitizer
  - Reduce staff on site at any time to 50% capacity.

- Thoroughly disinfecting testing materials and wiping down surfaces (countertops, tabletops, chairs, light switches, and mirrors) in the testing room following each assessment . Testing rooms are used for only one family each day and are cleaned nightly by custodial staff, who vacuum the rooms and sanitize all surfaces.
- Replacing testing materials that are difficult to clean, such as soft toys, with substitutes that are disposable (one-time use) or easier to sanitize.
- Finally, we have installed plexiglass dividers in our testing rooms that are used during all direct assessments.

Tips for Transitioning into an Unusual School Year

This fall, whether children are being educated in-person, remotely, or a hybrid of both, many families are facing similar challenges as they attempt to settle into what has become our "new normal."

After what felt like a very long summer for many of us, the beginning of school might feel like a welcome change and a path toward structure. However, depending on your child's age and specific learning needs, as well as your own work schedule and location, this time might also feel acutely overwhelming.

Over the past six months, we have all been forced to live with persistent uncertainty, and most of us have found that there is quite a learning curve embedded into this experience. In talking with friends, family members, parents involved in our clinical evaluations and research studies at Yale, and private practice clients, one common message has come through again and again: This. Is. HARD.

I concur. So much, in fact, that when I initially sat down to write this article, I was consumed with feelings of self-doubt. After all, how does one provide wisdom and guidance to others when she is really just trying to keep her own head above water?

Thankfully, as I let that feeling in, and I allowed myself to be honest about and present with it, I remembered a few things. First, I can tread water for a pretty long time. Second, there are all kinds of things that aid in my ability to float – inner tubes, noodles, rafts, my own back - and third, the swimming that occurs between treading and floating is what moves me along. This simple analogy brought both comfort and clarity, and I realized that we don't need to have all of the answers to make this time a positive one for ourselves and our families. While each family has specific needs unique to them, there are also several general things we can all do to help make life a bit easier for ourselves during this time, and to help make this transition as smooth as possible.

1. **Schedules and Routines:** This is key to getting everyone back on track. This includes regular wake times, mealtimes, and bedtimes, as well as breaking down the blocks of time each day wherein kids will be learning, taking breaks, and having both free time and down time. Having this information laid out visually can make it much easier to follow. Many children respond well to simple visual schedules with pictures and/or basic words. For older kids and parents, printing calendars and color coding them with highlighters can help to visually organize the days, making them feel more manageable. Depending on the size and make-up of your family, it may be helpful for each member (parents and children alike) to have their own personal schedule/calendar, as well as a more general family calendar that includes the most salient information for everyone.

2. **Clear Expectations:** Once you have established schedules and understand what the daily routines will look like, it will be important to be sure that everyone is clear about the expectations for each block of time. For instance, during learning time where will each person be located? How do they let a parent know if they need assistance with something, especially if that parent is working or in a virtual meeting? How long are breaks and how are they spent? What is permitted during free time? What does down time look like? When is lunchtime and who prepares it? How are squabbles with siblings handled? What are the rules for snacking? Anticipating the specific things that are likely to come up in your family and making these expectations clear ahead of time allows you to take a proactive, rather than a reactive stance when they inevitably arise.

3. **Communication:** This is perhaps the most important aspect of all, as it's the key to staying connected and adjusting along the way. As such, we will need to communicate with many people, and do so frequently. Communicate with your children - invite them to talk about their emotions and thoughts about this new reality. What's different? What's exciting? What's difficult? What's working well? What changes might you suggest? Listen openly and provide empathy. Reassure them that all of their feelings are normal and ok. Troubleshoot problems with them, helping them learn to advocate for themselves while also gaining an understanding about how the adults in their lives might support them.
Communicate with your partner if you are part of a two-parent household. Identify what is working well and what each of you is struggling with so that you can tweak what isn't working and provide support to one another.
Communicate with your child's educational team. It can help to have a point person, whether that's her main teacher, service coordinator, or someone in the guidance department, to talk through how things are going and what supports are being offered for kids who are struggling to adjust to these new ways of learning.

4. **Adequate Sleep and Nutrition:** This may seem obvious and simplistic, but the importance of getting enough sleep and eating healthy food cannot be overstated. Because our brains function better when adequately rested and when our bodies are properly nourished, we will be more equipped to handle the challenges when both are consistent. As such, having consistent bedtimes, wake times, and mealtimes, as well as planning well balanced meals and snacks is essential. Many school districts are providing free breakfasts and lunches during this time, available at school and for pickup on weekdays when kids are home. Many families are using this benefit and are finding it to be a helpful way to alleviate some of the parental burden. Contact your school district to determine whether this an option for you.

5. **Flexibility:** It's critical that we learn to be flexible as we navigate this uncertainty. Making sure we leave space for adjustment is vital to our ability to take things as they come and give ourselves room to grow with the changes. Every child is different and ever-changing as they learn; as such, we need to be ready to develop a Plan B, a Plan C, and a Plan X if need be. Beginning with some solid structure, having frequent conversations about how things are going, and adjusting as needed will help everyone to feel more comfortable with these new realities.

6. **Identify your own Needs:** As parents, we are often so focused on our children that our own needs get swept to the side. During this challenging time, it is especially important to identify what kinds of supports you need in order to help keep your own cup full enough to guide your family, and to find ways to make at least some of them happen. Here is a link to our first newsletter, which featured an article on self-care, in case you missed it:
https://medicine.yale.edu/lab/chawarska/SANA%20Newsletter_May%202020_386863_284_5_v1.pdf

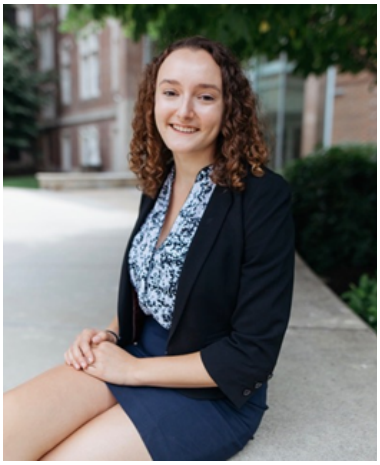
7. **Offer Grace:** As we fumble our way through this time, offering grace - or courteous goodwill - to ourselves and to each other can help ease the stress. Maintaining an understanding that we are all doing the best we can with what we have right now and offering compassion to ourselves, our children, our partners, our colleagues, and our children's educators can only serve to keep us more connected and positive. Extending that grace to our communities and to all the people who contribute to them, including complete strangers, will deepen and broaden that effect. We truly are all in this together, and it can bring much needed comfort to hold onto that.

Here at the Yale Child Study Center SANA Lab, we wish you well as you embark on the next chapter of this pandemic. May your version of treading water be balanced with various ways of floating and swimming, and may you be gentle with yourselves, and each other, in the process.

For more information and specific recommendations, here are a few additional resources:
https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/parent-checklist.html
https://www.autism-society.org/wp-content/uploads/2020/05/Transition-Workbook-1.pdf
https://medicine.yale.edu/news-article/26811/
https://www.nytimes.com/2020/09/12/at-home/prepare-return-school.html

Our New Staff Members

We recently welcomed new fellows and staff members to our team. Keep reading to learn a little more about them!



Emily Diamond
Developmental Psychopathology and Social Neuroscience Fellow

Emily recently graduated with highest honors from Scripps College and received a B.A. in psychology. During her time at Scripps she worked as a lab manager at the Reed Cognitive Neuroscience Lab researching the relationship between 15 clinically-relevant individual difference measures and seven event-related potential (ERP) indices of cognitive function. Emily also interned in Dr. Mendes' Emotion, Health, and Psychophysiology Lab at UCSF where she researched physiological covariation, cognitive load, and minority stress. Her senior honors thesis used ERPs to investigate whether the emotional expression of a face influences the own-age bias (OAB) early in visual processing. Emily currently works at the Yale Child Study Center in the Chawarska Lab as a Developmental Psychopathology and Social Neuroscience fellow. Upon completion of the fellowship she plans to pursue a degree in social psychology.

Favorite children's book: Curious George

Favorite snack as a child: Pretzels

Favorite childhood toy: Bop-It

Chitra Banarjee
Developmental Neuroscience of Autism Fellow

Chitra graduated from the University of Miami in 2020 with a B.S. in Mathematics (Applied Analysis) and Biochemistry & Molecular Biology. During her time at the U, Chitra was mentored by Dr. Daniel Messinger, exploring computational modeling of movement of children with and without ASD in preschool classrooms. She also worked in an early intervention clinic, examining imitation mastery in toddlers with ASD under Dr. Anibal Gutierrez, and in a Barrientos-Fontanesi lab, characterizing mitochondrial ribosome assembly in S. cerevisiae. Chitra is particularly interested in studying differential movement behaviors in children with ASD and hopes to pursue an MD-PhD dual degree. She is currently a Developmental Neuroscience of Autism Fellow at the Yale Social and Affective Neuroscience of Autism Program.

Favorite children's book: The Little Prince

Favorite snack as a child: Danimals Smoothies

Favorite childhood toy: Etch-a-Sketch

Rachel Foster
Developmental Psychopathology and Social Neuroscience Fellow

Rachel graduated Magna Cum Laude from Brown University in 2020 with a B.S. in Cognitive Neuroscience. While at Brown, Rachel gained exposure to research in Dr. Amso's Developmental Cognitive Neuroscience Lab as a research assistant on infant executive function studies. She then followed interests in executive function, atypical development, and neural imaging to labs at Boston Children's Hospital and MIT, spearheading one project in structural MRI analysis in new readers and another on understanding how executive function domains develop in children with learning disabilities. During her senior year, Rachel also conducted education research, designing a course assessment for a Brown introductory brain sciences course. After her fellowship, Rachel looks forward to pursuing a PhD in the space of Developmental Cognitive Neuroscience.

Favorite children's book: Blueberries for Sal

Favorite snack as a child: Ritz and Cream Cheese

Favorite childhood toy: My dolly

Alexandra Boxberger
Clinical Psychopathology Research Assistant

Alex recently graduated Cum Laude from the Robert D. Clark Honors College at the University of Oregon, with departmental honors and a B.S. in Psychology, and a minor in Spanish. Throughout her time at the UO, she worked in Dr. Zalewski's Science and Treatment of Affect Regulation Team lab, researching emotional and behavioral regulation in children of mothers with borderline personality disorder (BPD). Additionally, she studied for 5 months at the University of Otago in Dunedin, New Zealand, and was involved with Dr. Liz Franz's Action, Brain, and Cognition lab while there. Alex has also worked as a personal support worker for many years and has experience with young children with a variety of developmental disabilities, including autism. She is currently a Research Assistant in Clinical Psychopathology in the Yale Social and Affective Neuroscience of Autism Lab at the Yale Child Study Center.

Favorite children's book: Winnie the Pooh

Favorite snack as a child: Goldfish

Favorite childhood toy: Legos

Emma Brennan-Wydra
SANA Lab Data Manager

Emma Brennan-Wydra joined the SANA Lab as Data Manager in August 2020. She holds a master's degree from the University of Michigan School of Information and a bachelor's degree from Yale University. Her research and professional interests include research data management, digital preservation, scale development and validation, survey methodology, and scientific communication.

Favorite children's book: Stellaluna

Favorite snack as a child: Cheerios

Favorite childhood toy: a white teddy bear named Gussie (I still have him!)

Featured Resarch

Low-motion fMRI data can be obtained in pediatric participants undergoing a 60-minute scan protocol

An important tool to help researchers and doctors learn about kids with autism is functional MRI (fMRI) scanning, which allows pictures of brain activity to be obtained while a child lies in the MRI scanner. These pictures can be used to build mathematical models to link brain activity to future behaviors—a child's future social ability, perhaps, or other symptoms of autism. A key issue that complicate this process is poor quality MRI images, and often the quality is poor due to a child moving their head in the MRI scanner. We came up with a system to teach children with and without autism to lay still in the scanner.

Our system has three parts. First, we conduct a practice session using a mock scanner. We teach the child about the MRI machine, the sounds it makes, and what it looks like. We also teach them to lie quietly, and we show them what happens to our pictures if they move their body. Second, we have a prize system during the actual MRI session. If a child keeps their body still, they earn a prize—a toy, for example, or a pencil. Third, we have a weighted blanket for the child during the MRI scan. This helps make the child comfortable and decreases movement.

To test if this approach worked, we compared the quality of the MRI images to a group of kids that we did not have undergo the three-part system. We found those that underwent the system had much higher quality MRI images. We also wanted to determine if our approach could be adopted by other researchers, so we trained other research staff members to conduct the mock scan and administer prizes, and we again found that we could obtain high quality MRI images.

Altogether, this study shows that you can obtain high quality MRI pictures in younger kids during a long MRI scan, which many researchers thought was not possible. We are using this approach to achieve high-quality data in our current study, and we are hoping it can help build mathematical models to aid patients with autism and their families in the future.

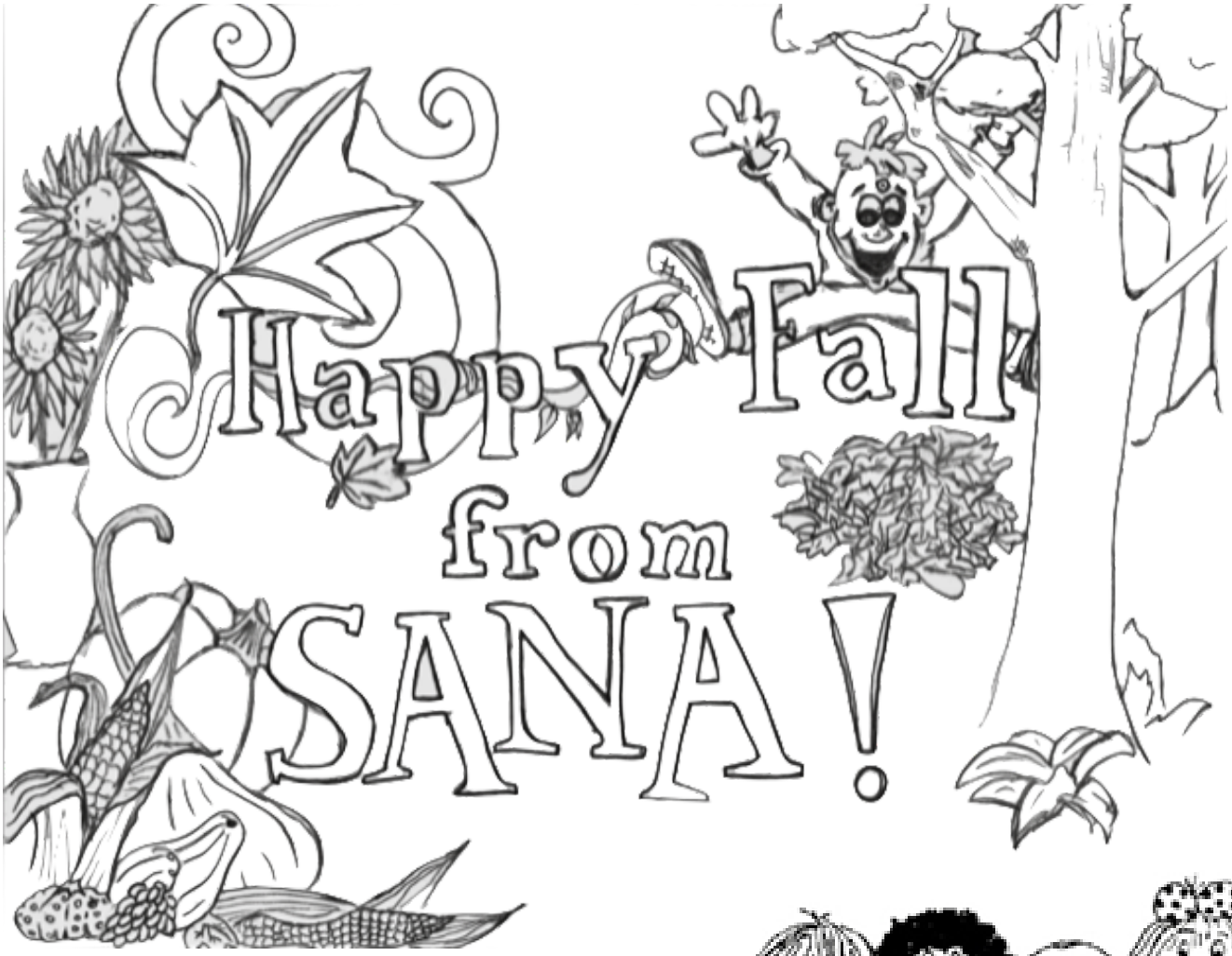
INTERESTED IN PARTICIPATING?

Call our Intake Coordinator , Evelyn Pomichter: (203) 764-5933

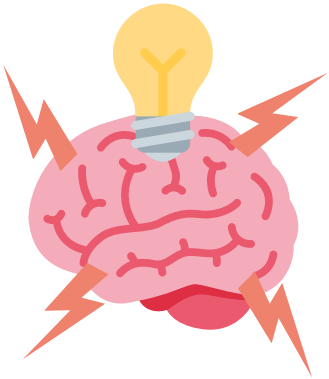
SCAN ME

For the Little Ones:

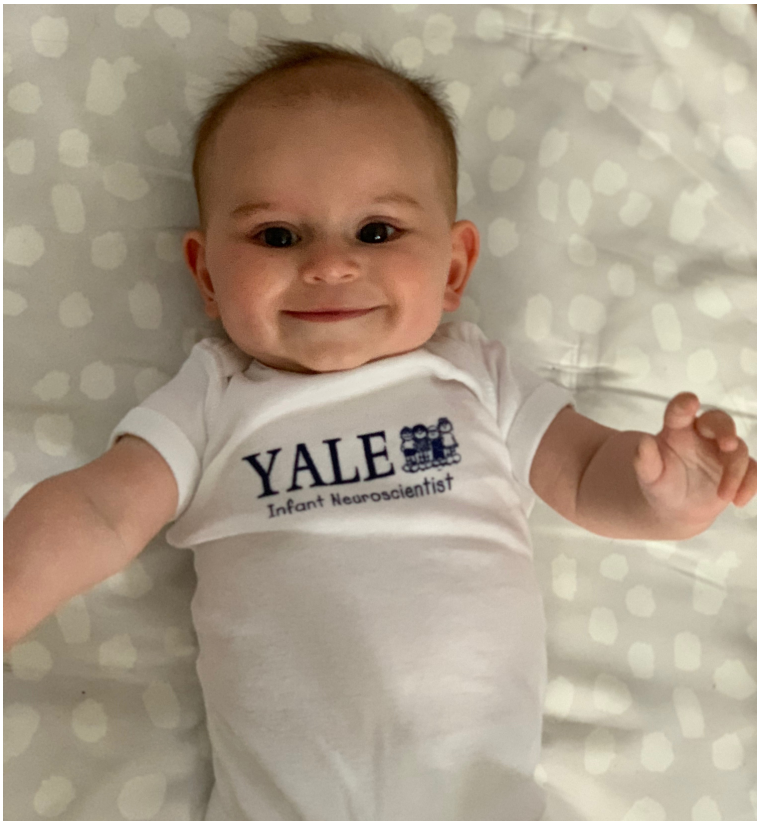
It's Coloring Time!



Did You Know...



... that **your brain actually produces enough electricity to power a light bulb**? Ever see a picture of a person with a light bulb over their heads? Well, this fact sheds a whole **new light** on those pictures!



Upcoming Events:

Kelly Powell, PhD, Co-director, Yale Toddler Developmental Disabilities Clinic and the Social and Affective Neuroscience of Autism Program is presenting at the **19th Annual Autism Services & Resources CT - LIVE Virtual Autism Resource Fair - November 7th!**

Presentation topic: Coping During The Pandemic

With over 75 exhibitors, workshops and speakers, this event brings together parents/caregivers, extended family, educators, school support staff and special service providers, professional intervention/service providers, and members of the general public in a simple virtual setting that is easy to join and participate in and easy to understand.

(Think "Zoom" but easier to have individual interactions).

For registration and more information: https://ct-asrc.org/annual-resource-fair/

Family Corner

We Want to Hear From You!

Let us know how your family is doing! You can send us updates, pictures, and cards to:

Yale Child Study Center
Developmental Disabilities Program
Social Neuroscience Laboratory
300 George St. Suite 900
New Haven, CT 06511

New contact info? Let us know with an email to **sanalab@yale.edu**

Resources from our friends at the Southern ASD Center:

ASD Center's Calendar of Events
Archived Friendly Forums Webinars

"It has been a pleasure being a part of the ACE prenatal and newborn studies. The staff and clinicians are extremely knowledgeable, kind, and helpful. The visits get more and more fun for my son as he gets older, and I find it interesting to learn about his development at each visit."

Deanna Macris, Autism Center of Excellence Parent

Connect with Us

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medicine.yale.edu/lab/chawarska/

INTERESTED IN PARTICIPATING?

Call our Intake Coordinator , Evelyn Pomichter: (203) 764-5933

SCAN ME