#### SPRING/SUMMER 2021 - THE DSCN LAB NEWSLETTER



# Play By Play

The DSCN Lab Newsletter

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# Welcome!

We're very excited to share updates and current research being conducted at the Developmental Social Cognitive Neuroscience Lab. Our main area of focus is executive function (EF), which includes skills related to self-control, memory, and attention. We strive to help parents, teachers, business leaders, and policy makers understand the importance of reflection and executive function skills for healthy social and cognitive development. The DSCN lab is located at the University of Minnesota Twin Cities campus and is directed by Dr. Stephanie Carlson and Dr. Philip Zelazo.

# What is Executive Function?

by Kerry Houlihan, Undergraduate Research Assistant

Executive function involves a key set of higher-order cognitive skills that are proving to be implicated in a number of developmental outcomes such as school readiness and academic success, social functioning, and child and adolescent well-being. Such skills include working memory (holding information in short-term memory), inhibitory control (stopping one from acting on impulse), set-shifting (being able to shift one's attention from one activity to another), and mindful reflection (reflecting on one's experiences, thoughts, and emotions). Together these skills underlie children's success at attaining their educational and social-emotional goals.

### Examining Risk and Resilience Factors Associated with High School and College Students' Psychological Health and Academic Functioning during the COVID-19 Pandemic

by Destany Calma-Birling, PhD Student

The COVID-19 pandemic has disrupted the lives of students across the globe. Recent research has shown that the closure of schools and the switch to remote learning has had a considerable impact on the mental health of high school and college students. To get a better understanding of the types of stressors and changes to daily life that predict increased psychological distress, we recruited high school and college students to participate in a 30minute online survey between October 2020 and December 2020. We also examined whether certain personal characteristics, such as mindfulness, self-compassion, and self-control, might be associated with psychological resilience and academic functioning during the COVID-19 pandemic.

A total of 398 high school and college students between the ages of 14-25 years completed the online survey. Our findings showed that 36% of students reported moderate to severe anxiety symptoms, and 67% of students reported moderate to severe depressive symptoms. These results did not differ by age, but they did differ by gender and family subjective social status. On average, females and those who perceive their family as being of lower subjective status reported higher levels of anxiety and depressive symptoms than males and students who perceive their family as being of higher subjective status, respectively.

Students who indicated knowing someone that was hospitalized (24.6%) or passed away (15.2%) due to COVID-19 reported greater levels of depressive but not anxiety symptoms. Students who reported being more concerned about having to stay home, missing opportunities related to one's futures goals/aspirations, conflict with parents, not having enough money, and taking online classes were more likely to report higher levels of anxiety and depressive symptoms.

#### What personal characteristics might promote psychological resilience during the COVID-19 pandemic?

We found that students who scored higher on the mindfulness, selfcompassion, and self-control measures reported significantly fewer anxiety and depressive symptoms than those who scored lower on those scales. These students also reported significantly less negative affect and more positive affect during the pandemic. These findings were expected and are consistent with the pre-pandemic literature on mindfulness, self-compassion, and selfcontrol in the context of psychological health.

Furthermore, our results summarized here suggest that cultivating mindful awareness and attention skills, learning how to be kinder to oneself during difficult times, and practicing selfcontrol might be beneficial for those struggling with their mental health during the pandemic.

#### **Educational Perspective**

The most interesting findings were that students who scored higher on the mindfulness measure actually reported doing better in school and more motivated to do well in school than they were pre-pandemic. Although selfcontrol was significantly associated with students' academic motivation, it was not associated with students' academic performance. This was in contrast to what we hypothesized and is inconsistent with past research that has found self-control to be a significant predictor of academic performance.

#### **Future Research**

We are currently planning a second iteration of this study with a larger and more diverse sample of high school students to look further into these academic-related findings using more direct measures (e.g., school grades and attendance). We hope this next study will help clarify the inconsistent finding and strengthen the validity of our findings related to mindfulness and academic performance. This work is being supported by the Character Lab Research Network.

# **The Heart of Our Lab**

Our students – both graduate and undergraduate – are really the heart of our lab and make it continually exciting to discover and share new findings through collaborative research. They have been publishing great work! In addition, several ICD graduate students have already written blogs aimed at parents and educators for our University-based start-up, <u>Reflection Sciences</u>.



# Highlights

- Congratulations to Rebecca Distefano, Amanda Grenell, and Brandon Almy for graduating with their PhD in 2020! Rebecca's work focused on parenting and EF development in preschool-aged children who were homeless and highly mobile. Amanda recently published work related to her dissertation on individual differences in EF and learning. Brandon examined self-regulation, reflection, and adolescent decision-making.
- Congratulations to Andrei Semenov who has recently published work in *Human Development* and *Frontiers in Psychology*! See page 11 for details.
- Julie Vaisarova has presented her work recently for the Society for Neuroscience of Creativity, Cognitive Development Society, and the Creativity Conference at Southern Oregon University.
- Jasmine Ernst presented two posters at SRCD 2021 on features of counting books and preschoolers counting behaviors, and also continuity of child-initiated instructional practices on later academic performance. She was also a co-author of a poster on relations between EF and science learning in preschoolers.
- Romulus Castelo presented an award-nominated poster at SRCD 2021 on the association between autonomy supportive parenting and child EF.
- Together with Dr. Zelazo, PhD students Brandon Almy and Andrei Semenov have worked with Bezos Family Foundation and the Chan-Zuckerberg Initiative to share knowledge about child development.

# The Heart of Our Lab: Graduate Students

# Welcome to the Lab!

**Romulus Castelo** graduated from the University of Maryland with a B.S. in Psychology. He then worked as a research coordinator at the UMD School of Medicine prior to arriving at ICD. He is interested in the development of executive function in the context of early life adversity and family influences.



**Deborah Walters** has 15 years of clinical experience with families addressing physical and mental illness through mindfulness techniques and natural remedies. She recently returned to complete a Ph.D. in child development and is currently enrolled in the Masters of Biological Sciences program. Deborah's research interests include developing approaches to help children reduce fear.

**Andrei Semenov** graduated from the University of Colorado in 2013 with a B.A. in psychology and philosophy and earned his PhD in Spring 2021!! As a researcher, Andrei's focus has included the development of executive function skills and how practices like mindfulness meditation can help improve these skills in children and their parents.





**Destany Calma-Birling** graduated from the University of Wisconsin-Green Bay with a B.S. in Psychology and Human Development. Her interests include developmental neuroscience, executive function, and mindfulness.

**Jasmine Ernst** graduated from Western Kentucky University with a B.S. and M.S. in Psychological Sciences. Her research broadly examines executive function skills, learning, and early educational experiences.





Julie Vaisarova graduated from Scripps College in 2014 with a B.A. in Psychology and subsequently earned an M.A. in Child Psychology from the University of Minnesota. Her research interests include the development of imagination and creative thinking and their relations to executive functions.

# Lab Honors & Awards

- Andrei Semenov and Destany Calma-Birling both received the Dr. Ruth Winfried Howard Diversity Award for a mobile EEG system.
- Congratulations to Andrei Semenov for being awarded a Doctoral Dissertation Fellowship in 2020 from the University of Minnesota, and a T32 Post-Doc at ICD in 2021!!
- Destany Calma-Birling has received support from the Character Lab to continue her COVID-19 study (see page 2 for more details on her outstanding research!).
- Romulus Castelo and Jasmine Ernst received small grants from the Institute of Child Development. Romulus will use the grant to fund his first-year project on choice overload, whereas Jasmine will use the funds for a new remote study to examine the associations between EF skills and math domains in early childhood.
- Sophie Richardson was awarded a grant from the Undergraduate Research Opportunity Program (UROP). She used these funds to evaluate the relationship between language abilities and creativity.
- Undergraduate Research Assistants (2019-2020) Yue Zhao and Sophie Richardson (2020-2021) received the Anne Pick Award, which recognizes academic potential and scholarship in the area of child development. They will find her names inscribed on a plaque in the new ICD building.

# The Heart of Our Lab: Research Assistants

### Join the Lab!

Great opportunity for future educators and those interested in neuroscience, education, and executive function. RAs assist with recruitment, data collection, coding, transcription, and data entry.

- Flexibility to assist with different studies throughout the semester
- We support students interested in doing a UROP and/or senior project.
- Freshmen and Sophomores are encouraged to apply!

2+ credits preferred (6hrs/week)2-semester commitment preferred

**Inquiries**: Carolyn Hansen, Lab Manager (childlab@umn.edu)

#### Apply: DSCN Undergraduate RA Application

We accept applications on a rolling basis. Preference is given to those who apply in:

- November (Spring semester)
- April (Summer/Fall semesters)
- July (Fall semester)

**Anne Stalboerger** graduated Spring 2021 with a B.S. in Developmental Psychology. Her research interests include executive function, school readiness, and cognitive development, which she hopes to explore further in graduate school. Anne's enthusiasm to learn was indispensable as an RA on a study that examined math and executive function skills.

**Brittany Kubricky** graduated Spring 2021 with a B.S. in Developmental Psychology with a minor in Integrative Neuroscience. Her interests include executive function as a measure of academic interest and plans to pursue a career in school psychology. Brittany has a strong sense of responsibility and was a dedicated lead RA on a project that looks at toddler's choice preferences.

**Kerry Houlihan** graduated in Spring 2021 with a B.S. in Psychology and minor in Integrative Neuroscience. She started as an RA with the DSCN Lab in Spring 2018 and is now working full-time with the UMN Department of Psychiatry and Behavioral Sciences.

**Maci Law** is studying Developmental Psychology with plans to pursue a Ph.D. in educational or clinical psychology. Her interests are in education at both the micro-level and macro-level. Maci's previous research experience, ambition, and flexibility are key to supporting multiple projects in the lab.

**Shelby Hornberg** is pursuing a B.S in Developmental Psychology and a minor in Integrative Neuroscience. Shelby's curiosity and attention to detail have made her a perfect match to work on a project about creativity and executive function skills.

**Sumaya Hanafi** graduated Spring 2021 with a B.S. in Developmental Psychology and minor in Learning Technologies. She is interested in executive function, educational psychology, creativity, and technology. Sumaya is highly valued for her conscientiousness and unique perspective and credited for designing this issue of the DSCN Lab newsletter!

### Sophie Richardson

#### Undergraduate Research Opportunities Program

Sophie is a Developmental Psychology student. She recently completed a UROP project on creativity and language development. Sophie shares her experience working on a UROP project below:

I decided to do a UROP in the DSCN Lab because I was interested in more hands-on work that involves critical thinking. The process allowed me to develop skills in study design and statistical analysis. The results of the study indicated children with larger vocabulary are able to better express creativity in a divergent thinking task. I hope that my future research can investigate this relation further while exploring language development overall.

#### WELCOME Summer 2021 Undergraduate RAs!!!

Julia Mcintosh, Jamie Wahout, Hannah Littler, Austin Smith, Keegan Lorenston, Lin Xie, Leif Anderson, and Ruby DeCoster

# **Executive Function Across Generations**

by Romulus Castelo, PhD Student



#### **Two-generational Approach**

We know that families are the foundation of a strong and thriving community. Unfortunately, however, many factors such as living in poverty, absence of mental health care, and lack of educational opportunities can impede families' wellbeing.

A two-generational approach highlights the importance of the whole family in creating better outcomes for both children and the adults in their lives. At one end of the continuum, the approach focuses on supporting children's early development by targeting key child factors like access to developmentally appropriate toys. The other end centers on critical parentfocused elements which include workforce programs, childcare, and support for student parents. Although these two approaches are individually crucial to success, the magic happens when programs are able to integrate both approaches simultaneously creating the two-generation approach.

# In addition, the two-generation approach encompasses five key

**components:** 1) Postsecondary Education and Employment Pathways, 2) Early Childhood Education and Development, 3) Economic Assets, 4) Health and Well-Being, and 5) Social Capital. All these components work together to improve both child and parent outcomes.

#### Executive Functioning Across Generations: The Family Partnership, an

organization based in Minneapolis that focuses on closing the achievement and opportunity gaps for young children and families living in poverty, recognizes the significance of executive function (EF). Championing the twogeneration approach, Executive Functioning Across Generations is a comprehensive intervention designed to boost EF in children and parents.

The program curriculum is comprised of a child and parent component. The children's curriculum, delivered in preschools, consists of daily lessons targeting knowledge and acquisition of brain science, learning words to describe internal thoughts and feelings, perspective-taking, "serve and return" interactions between caregivers and children, and personal narratives. Employing the two-generation approach, parents receive a curriculum of their own that focuses on supporting children's language abilities and familiarizing them with the types of activities used in the classroom.

Early findings from this intervention are highly promising. Teachers report that children are highly engaged with the activities. They also discovered that children are more expressive of their feelings by way of effective communication. Parents have also noticed that children are bringing home the skills learned in the classroom. Mr. Till noted, "a parent told us that now when she feels stressed, her daughter reminds her to do her belly breathing. It is great to see a whole family effect in which what a child learns in the classroom transfers to the parent."

To assess the impact more objectively, the Minnesota Executive Function Scale (MEFS AppTM) was used to measure children's EF. In the most recent pilot study, children initially scored below the expected range for their age on the MEFS but significantly improved following participation in the program. Moderation analyses showed that no matter how high or low children initially scored on the MEFS, they showed the same rate of improvement following the intervention

Read the full article by Romulus Castelo to learn more about The Family Partnership and their next steps for "Executive Functioning Across Generation" on the <u>Reflection Sciences Blog</u>

# **Getting Creative!**

by Julie Vaisarova, PhD Candidate

# Let's start with a quick activity: How many different ways can you think of to use a spoon?

Thinking of different uses for objects is a common way that researchers measure children's capacity to be creative. In our lab, we have been using this activity to explore whether children's executive function (EF) skills – a set of skills that allow them to plan ahead and to control their thinking – might help them think of creative ideas.

If you find yourself wondering how selfcontrol could help someone be more creative, think back to the spoon activity at the beginning of this article. If you tried it, you probably thought of some obvious, everyday ideas first eating, stirring, measuring. After that, it probably got harder. Maybe you found that the obvious ideas kept popping into your mind as you tried not to be distracted by them. Maybe you tried some strategies, like thinking of cooking-related ideas and then ideas related to gardening. If it felt like you were doing any part of this "on purpose", you were probably using your EFs.

Over the past few years, we have invited over two hundred 4- to 6-yearold children to visit our lab and play the

object uses game with different kinds of objects - everyday objects that are very familiar (e.g., a spoon), objects that are kind of familiar (e.g., a whisk), and objects that most children have never seen before (e.g., a dumpling press). We have also measured children's EF skills (using sorting and matching games), verbal skills, and a few other cognitive and social characteristics, to see whether these are related to their creative thinking. We predicted that children would have a harder time thinking of unusual uses for more familiar objects, because they would need to use their EF skills to override what they know about how the object "should" be used.

In two studies, we have found that 4- to 5-year-olds do seem to come up with more unusual uses when an object is new to them and they don't know how it "should" be used. However, we haven't seen this pattern for older 5and 6-year-olds. These slightly older children seem to be better than younger children at coming up with different uses for familiar objects. We have also been surprised to find a negative association between the



number of ideas children came up with during the object uses game and their EF skills. Children who scored higher on the EF measures also tended to give fewer uses (and fewer unusual uses) for objects.

These results are interesting and puzzling. For younger children in particular, objects without a clearly defined function seem to spark more ideas. This could translate to their play - a wooden block, for example, might inspire more varied play than a toy phone. We believe our results also suggest that children's creativity is more like a free-flowing stream of consciousness than a strategic search for ideas. And we suspect that - rather than saying everything that pops into their heads during the object uses game - some children use their EF skills to help them pause, consider whether they think each idea is "good", and only say the "good" ones out loud. If we are correct, then getting into a more playful, anything-goes mindset might help children come up with (and share) more creative ideas, and we are currently planning a new study to test this.

# **Teaching Mindfulness to Middle School Students**

by Destany Calma-Birling, PhD Student

Adolescence is a period in development when youth strive to gain independence from their families and become more engaged with peers. However, recent school closures and social distancing directives have cut off many regular sources for social interaction from teens' lives. With fewer opportunities for peer interactions combined with increasing stress and uncertainty due to the COVID-19 pandemic, many teens are left feeling more anxious, depressed, and frustrated.

To help teens cope with and adjust to the lifestyle changes brought about by the novel coronavirus, the DSCN lab has partnered with a local middle school to examine whether an online mindfulness class delivered bi-weekly may reduce the negative impact of the COVID-19 pandemic on adolescents' wellbeing and executive functions. **Mindfulness** is the awareness that arises through paying attention to the present moment on purpose and without judgement. Previous studies have shown that mindfulness practices are effective in promoting adolescents' executive function skills, reducing stress, and fostering acceptance towards oneself, others, and the world.



To determine whether practicing mindfulness during the COVID-19 pandemic might support middle school students' executive function skills and reduce their stress levels, half of the students participated in a biweekly online health and wellness class while the other half participated in a bi-weekly online mindfulness class.

Students completed a 20-minute online survey and behavioral measures of executive function the week before and after the eight-week intervention.

We look forward to analyzing the data now that the school year has ended to see whether implementing mindfulness in the virtual classroom can enhance teens' well-being and cognitive functions.

#### Kelsey Thompson, Research Assistant

Kelsey has a B.S. in Human Biology and minor in Chemistry. Through personal practice of yoga and meditation, she was inspired to become a yoga teacher, Ayurveda Wellness Coach, and a Mindfulness Teacher. With an interest in working with the developing brain in adolescents — and using mindfulness practices as a preventative therapy for anxiety, depression, and psychological disorders — Kelsey has worked with thousands of youth and their families as a Social Emotional Learning Coach. The DSCN lab is very fortunate to have Kelsey's expertise, enthusiasm, and dedication to teaching Mindfulness and Health Sciences to middle schoolers as part of a mindfulness study.

# **Current Research**

- **Choice Overload**: This online study examines toddlers' preference for choice and the point of choice overload. We are interested in associations among childrens' choice preferences, provisions of choice given by caregivers, and executive function skills.
- **Executive Function and Math**: This remote study examines the association between executive function and domains of math in the preschool years.
- **Creativity and Executive Function**: This series of studies is exploring how young children's executive function skills might play a role in their ability to generate creative ideas, and whether this depends on the characteristics of the child and the creative tasks.
- **Reflection**, **Empathy**, **and Prosocial Sharing in Preschool-age Children**: This study examines how reflection upon another person's emotion and executive function skills influences preschool-age children's sharing behavior.
- In-home Parent-Child Training System: This study examines the usability of a new smartphone/tablet-based app that may help parents support the development of their children's self-regulation and attention skills.
- **Mindfulness in Middle School**: This study examines whether an online mindfulness class delivered bi-weekly may reduce the negative impact of the COVID-19 pandemic on adolescents' well-being and executive functions.
- **COVID-19 Risk and Resilience**: This study looks at the types of stressors and changes to daily life that predict increased psychological distress in adolescents and young adults. We are also examining whether certain personal characteristics, such as mindfulness, self-compassion, and self-control, might be associated with psychological resilience and academic functioning during the COVID-19 pandemic.

#### COVID-19 Risk and Resilience Study: Survey Response Themes

response analysis by Maci Law, Undergraduate Research Assistant

- the importance of connections
- gratitude

- trust science
- think of others

Read more about this study by Destany on page 2!

### Participate in Our Research!

Participating in developmental research can be a rewarding and interesting experience for both children and parents. Join the <u>ICD Participant Pool</u>!

The ICD Participant Pool is a central and secure database for research labs in ICD. Researchers use the database to contact local families about taking part in studies.



# Outreach

We have a responsibility to share what we know about children's development, including how to support this development as parents and teachers. It's also important to raise awareness about the value of scientific research on children, and encourage families to participate in this research –especially those who are traditionally underrepresented in this process.

### Check out these media interviews by Dr. Carlson and Dr. Zelazo!

- Parents Magazine, <u>6 little things you</u> <u>can teach your toddler</u>
- EdWeek, <u>Remote Learning and</u> <u>Attention Problems</u>
- Medium, <u>The Psychological Benefits of</u> <u>Adopting an Alter Ego</u>
- BBC, <u>The Batman Effect: How Having</u> <u>an Alter Ego Empowers You</u>
- Wall Street Journal, <u>The One Thing</u> You Can Control Right Now: Yourself
- New York Times, <u>How Play Energizes</u> your Kid's Brain
- Slate, Mom and Dad podcast
- Fatherly, Playing Monster
- The Greater Good, <u>"How to Help Your Kids Be a Little More Patient: Why is waiting so hard for kids?"</u>
- UMN Medical Bulletin, <u>"Starting</u> <u>Strong: U's new Masonic Institute for</u> <u>the Developing Brain aims to put kids</u> <u>on course for life"</u>
- Fatherly, <u>"How to Shush a Kid So They</u> <u>Stay Shushed"</u>
- Apple Podcast, Raising Good Humans
  - <u>Dr. Zelazo</u>
  - <u>Dr. Carlson</u>



Dr. Stephanie Carlson delivered a <u>TEDxMinneapolis</u> talk on the importance of executive function for children's academic and social-emotional success, summarizing what the research so far has shown us about how to cultivate EF Skills.

#### We are committed to community engagement and we encourage our students to participate in outreach activities.

- Romulus Castelo started an internship at Northside Achievement Zone with Amy Sussman-Stillman.
- We have an ongoing collaboration with the Avalon School, a charter school in St. Paul serving middle school and high school students.
- With Reflection Sciences, Carlson is working on a campaign with the National Head Start Association to raise awareness of the importance of EF among Head Start teachers.
- Several of our students worked with local high school students to teach them about research and support them as they prepared presentations for the recent meeting of the Society for Research in Child Development.
- Zelazo and Carlson contributed to the Mount Sinai Parenting Center's efforts to create a pediatric resident curriculum regarding the development of executive function skills in childhood.
- Dr. Phil Zelazo gave invited outreach presentations at Saint Paul Academy, St. Paul, MN, and The Breck School, Golden Valley, MN, and gave invited addresses at the 89th Meeting of the International Neuropsychological Society, and the Mind and Life Summer Research Institute (remotely due to COVID-19).

# **Recent Publications**

\*indicates current or former student.

\*Beck, D.M., \*Eales, L., & Carlson, S.M. (2020). Hot and cool executive function and body mass index in young adults. *Cognitive Development, 54*, 100883. <u>https://doi.org/10.1016/j.cogdev.2020.100883</u>

\*Distefano, R., Fiat, A. E., Merrick, J. S., Slotkin, J., Zelazo, P. D., Carlson, S. M., & Masten, A. S. (2021). NIH Toolbox Executive Function measures with Developmental Extensions: Reliability and validity with preschoolers in emergency housing. *Child Neuropsychology*. <u>https://doi.org/10.1080/09297049.2021.1888905</u>

\*Distefano, R. Galinsky, E., & Zelazo, P. D. (2020). The influence of neuroscience on early childhood education. In D. F. Gullo & M. E. Graue (Eds.), *Scientific influences on early childhood education: From diverse perspectives to common practices.* New York: Routledge.

\*Distefano, R., \*Schubert, E. C., Finsaas, M. C., Desjardins, C. D., \*Helseth, C. K., Lister, M., Carlson, S. M., Zelazo, P. D., & Masten, A. M. (2020). Ready Set Go! A promising school readiness program to boost executive function skills in preschoolers experiencing homelessness and high mobility. *European Journal of Developmental Psychology*. <u>https://doi.org/10.1080/17405629.2020.1813103</u>

\*Grenell, A. and Carlson, S.M. (2021). Individual differences in executive function and learning: The role of knowledge type and conflict with prior knowledge. *Journal of Experimental Child Psychology*, 206, 105079. <u>https://doi.org/10.1016/j.jecp.2020.105079</u>

\*Pesch, A., \*Semenov, A. D., & Carlson, S. M. (2020). The path to fully representational theory of mind: Conceptual, executive, and pragmatic challenges. *Frontiers in Psychology*. November 2020 | <u>https://doi.org/10.3389/fpsyg.2020.581117</u>

\*Semenov, A. D., & Zelazo, P. D. (2019). Mindful family routines and the cultivation of executive function skills in childhood. *Human Development, 63*, 112-131. <u>https://doi.org/10.1159/000503822</u>

\*Semenov, A. D., Kennedy, D., & Zelazo, P. D. (2020). Mindfulness and executive function: Implications for learning and early childhood education. In M. S. C. Thomas, I. Dumontheil, & D. Mareschal (Eds.), *Educational neuroscience: Development across the life span.* New York: Routledge.

\*White, R. E., & Carlson, S. M. (2021). Pretending with realistic and fantastical stories facilitates executive function in 3-year-old children. *Journal of Experimental Child Psychology*. <u>https://doi.org/10.1016/j.jecp.2021.105090</u>

Zelazo, P. D., & Carlson, S. M. (2020). The neurodevelopment of executive function skills: Implications for academic achievement gaps. *Psychology & Neuroscience, 13*, 273-298. <u>http://dx.doi.org/10.1037/pne0000208</u>

# The DSCN



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Lab

### About Us

The DSCN Lab is co-directed by Dr. Stephanie M. Carlson and Dr. Philip D. Zelazo, leading scientists in the field of cognitive development. Our lab focuses on the research of developmental social cognitive neuroscience, with executive function (conscious control of thought, action, and emotion) at its core.

Join the Participant Pool!

#### https://icd.umn.edu/research/participant-pool/

Visit us on the Web! https://innovation.umn.edu/child-lab/

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