9th Annual



Program



The International Congress for Integrative Developmental Cognitive Neuroscience

Program At-A-Glance

*Subject to change

				Pre Conf Workshops		Day 1		Day 2		Day 3		Day 4		
	1		1	Friday,	Sept. 17		Saturday, Sept. 18		Sunday, Sep	t. 19	ivionday, se	pt. 20	Tuesday, Sej	ot. 21
Los Angeles	New York	Paris	GMT			Trainee day	Plenary Sessions	On-Demand	Plenary Sessions	On-Demand	Plenary Sessions	On-Demand	Plenary Sessions	On-Demand
PDT	EDT	CEDT												
6:00	9:00	15:00	13:00				Opening Remarks		Flash Talks 1				Flash Talks 3	
6:30	9:30	15:30	13:30								Symposium #5			
7:00	10:00	16:00	14:00				Symposium #1 LIVE		Poster Session 1 LIVE in Gather.town		LIVE		Poster Session 3 LIVE in Gather.town	
7:30	10:30	16:30	14:30											
8:00	11:00	17:00	15:00	Computational	FIT'NG All Ages:		Young Investigator Award Talk LIVE		Diversity Symposium		Huttenlocher Lecture		Science of Learning	
8:30	11:30	17:30	15:30	Modelling in	Advantages and Challenges of				LIVE		Break		Symposium	
9:00	12:00	18:00	16:00	Development with 5 breakout	Longitudinal Fetal,		Symposium #2	Poster Hall	Break		Flash Talks 2	Poster Hall	Break	Poster Hall
9:30	12:30	18:30	16:30	tutorials	Neuroimaging			Pact		Poster Hall		Pact		Past
10:00	13:00	19:00	17:00				Break	Sessions	Symposium #3 LIVE	Past Sessions	Poster Session 2 LIVE in Gather.town	Sessions	Symposium #7 LIVE	Sessions
10:30	13:30	19:30	17:30				Trainee Dissertation Award Talk LIVE	and on		on Demand		and on		and on
11:00	14:00	20:00	18:00			Career		Demand	Break			Demand	Break	Demand
11:30	14:30	20:30	18:30			Perspectives					Symposium #6			
12.00	15:00	21.00	19:00			Panel			Symposium #4		LIVE		Symposium #8	
12.00	10.00	21.00	10.00			LIVE						_		
12:30	15:30	21:30	19:30						Break					
13:00	16:00	22:00	20:00			Connecting					Diversity Affinity Groups		Closing Remarks	
13:30	16:30	22:30	20:30			Society Panel &			Social Event			-		
14:00	17:00	23:00	21:00			Workshop LIVE								
14:30	17:30	23:30	21:30				•							

Flux Congress Sponsors



Jacobs Foundation

Sponsor of Science of Learning Symposium

The Jacobs Foundation supports research and intervention projects leading to significant outcomes for children and youth all over the world. Within our research priority Science of Learning, we explore the biological bases of skill acquisition and development of children and youth and their consequences for learning environments and institutions.

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Neuroscience

Kennedy Krieger Institute

Sponsor of Young Investigator Award

Kennedy Krieger Institute is a non-profit, internationally recognized specialty pediatric healthcare, education, research and related services provider whose mission is to improve the lives of the more than 24,000 children and adolescents with disorders and injuries of the brain, spinal cord, and musculoskeletal system they serve each year.

With locations throughout the Baltimore-Washington region, and welcoming children from nearby and around the world, Kennedy Krieger Institute helps children and their families through interdisciplinary inpatient and outpatient care, novel research, home and community services, training for current and future professionals and specialized school-based programs.

From autism to traumatic stress, brain injuries to rare neurological disorders like leukodystrophies and Kabuki syndrome, the people who comprise the Institute are committed to changing the trajectories of young lives through innovation, commitment, compassion and expertise.

KennedyKrieger.org



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Just as the tools used in scientific research are changing, so too are the tools used in scientific communication. Elsevier has taken a leadership role in advancing the technologies necessary to create a seamless electronic information delivery environment.

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Flux Awards



Huttenlocher Lecturer Award

This award is presented to an outstanding researcher in the field of Developmental Cognitive Neuroscience.

2021 Awardee: **Prof. Dr. Dr. h.c. Angela D. Friederici** | Director at the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

Angela D. Friederici is director at the Max Planck Institute for Human Cognitive and Brain Sciences (MPI CBS) in Leipzig, Germany. She is Founding director of this institute, founded in 1994. She is honorary professor at the University of Leipzig (Psychology), the University of Potsdam (Linguistics) and the Charité Berlin (Neurology) and holds a Doctor honoris Causa from the University of Mons, Belgium. She graduated in linguistics and psychology in Bonn (Germany) and spent a postdoctoral year at MIT (USA). Prior to joining the Max Planck Society as a director, she was a professor for Cognitive Sciences at the Free University Berlin. Her research on the neural basis of language and language acquisition has received recognition across disciplines.

Young Investigator Award Supported by the Kennedy Krieger Institute

The Young Investigator Award in Cognitive Neuroscience recognizes outstanding contributions by scientists early in their careers. Award recipients have been working in the area of cognitive neuroscience for no more than 10 years involved in active independent research.



2021 Awardee: Kate Mills | University of Oregon

Kate Mills is an Assistant Professor in the Department of Psychology at the University of Oregon. Her lab applies longitudinal methods to investigate the intertwined social, biological, and cognitive processes that underlie the development of skills needed to navigate the social environment.

Flux Dissertation Award

Flux is pleased to announce the establishment of the Flux Student Dissertation Award, which recognizes an exceptional, rigorous, and meticulous dissertation by one of the Congress' trainee members.

2021 Awardee: Dr. Cameron Ellis | Yale University

Dr. Cameron Ellis completed his PhD in Psychology in 2021 from Yale University (by way of Princeton University), working with Dr. Nicholas Turk-Browne. He received his BSc from University of Auckland (New Zealand) in 2013. In his research, he studies how basic building blocks of cognition emerge and mature in the infant brain, and seeks to understand how infants are adapted to the challenges they face during development. In his dissertation, he developed methods for conducting fMRI with awake, behaving infants and pursued three directions: 1) how the visual system is organized early in life, long before visual abilities reach maturity, 2) how attention enables infants to sift through a world full of complexity, and 3) how infants can learn so much yet remember so little of their early life experiences.

Program Contents

About the Flux Congress

The aim of the congress is to provide a forum for developmental cognitive neuroscientists to share their findings on the development of brain processes that support cognition and motivation from an integrative neuroscience perspective. Thus, it provides an opportunity for scientists in the field to expand their knowledge base, and also be better informed of translational approaches.

The Flux Society was launched in June 2014, and has seen growth in its membership each year. To learn more about the Flux Society, please visit **www.fluxsociety.org.**

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Welcome to the ninth meeting of Flux

Dear Fluxers,

Welcome to our 9th meeting of Flux: The Society for Developmental Cognitive Neuroscience, in Virtual Space, again!

Hope you are all adapting well to the prolonged pandemic. We hope that the Flux meeting will again transport you to a place of great scientific inquiry and give you a sense of belonging to our community.

Despite the pandemic and virtual burn-out, to date we have more than **500 registrations** with more coming in! We also currently have more than 360 members committed to the Flux Society.

We are greatly indebted to our superman and Program Chair **Nikolaus Steinbeis** (University College London) and his program committee including: Duncan Astle (University of Cambridge), Anna van Duijvenvoorde (Leiden University), Jessica Church-Lang (University of Texas at Austin), Alexandra Cohen (New York University), Tobias Hauser (University College London), Rogier Kiviet (Radboud University), Kieran O'Donnell (Yale University), Jennifer Pfeifer (University of Oregon), Yee Lee Shing (Goethe University Frankfurt), Leah Somervile (Harvard University), Sarah Yip (Yale University), Lilla Zollei (Massachusetts General Hospital / Harvard Medical School) for creating a unique an outstanding scientific program. The program committee organized a total of 42 talks including invited and selected Symposiums, Award talks, 17 Flash talks as well as 243 Posters. The program committee reviewed a large number of excellent, and extremely competitive, symposium submissions for a precious few available slots. We encourage authors to build upon any unselected submissions, or to generate new ones, to help us plan for future meetings.

We are again delighted to highlight our pioneers in the field with the **Huttenlocher Award Lecture**. This year, we are thrilled to bestow the **2021 Huttenlocher Award** to **Angela D. Friederici** (Max Plank Institute for Human Cognitive and Brain Sciences) for her groundbreaking and pioneering work in developmental cognitive neuroscience. Angela will share her vision of the field and its potential impact going forward, based on her groundbreaking work on the neural basis of language and language acquisition. **Kate Mills** (University of Oregon) is this year's **Young Investigator Awardee**, who was selected from a highly competitive set of candidates, for her outstanding and highly productive work on longitudinal methods to investigate developmental dynamics through adolescence of social, biological, and cognitive processes. We thank the **Kennedy Krieger Institute** for their continued support of the YIA!

Congratulations to **Dr. Cameron Ellis** (Yale University) on being this year's recipient of the Flux Dissertation award! His dissertation, "Infant fMRI: A Model System for Cognitive Neuroscience" under the mentorship of Dr. Nicholas Turk-Browne, describes the development of the building blocks of cognition through infancy including the visual, attention, and memory systems.

Each year the Jacobs **Science of Learning Symposium** (SOL) highlights novel connections between Flux society research and the broader field of human learning. This year we feature **Alina Quachs**' work on the development of value-based generalization, **Iryna Schommartz's** insights on memory consolidation in children born prematurely, and **Phoebe Thomson's** findings on functional brain networks in ADHD. These three talks are followed by a **live** symposium-wide question and answer session (moderated by Jessica Church). We continue to be grateful to the **Jacobs Foundation** for enabling symposium, as well as support for students to participate in this year's Congress. We also thank **Jessica Church** (UT Austin) and **Yee Lee Shing** for organizing this effort.

We thank **Alexandra Cohen (NYU)** and **Tobias Hauser (UCL)** for organizing the Computational Modelling Development workshop and 5 tutorials that will significantly enhance our methodological and analytic approaches.

We thank **FIT'NG** (Fetal, Infant, Toddler Neuroimaging Group), co-chairs Sarah Shultz (Emory University/Marcus Autism Center) and Dustin Scheinost (Yale University School of Medicine) and their committee members Zeena Ammar (Emory University/Marcus Autism Center), Cat Camacho (Washington University in St. Louis), Aiden Ford (Emory University/Marcus Autism Center), Roxane Licandro (Vienna University of Technology), and Kelly Vaughn (University of Texas Health Science Center at Houston) for organizing yet another compelling workshop on best practices and analytics characterizing early development.

A special thank you to **Dana Glenn** (University of California, Riverside) **and Na Yeon Kim** (Princeton University) **and the Training Committee**: Marjolein Barendse (University of Oregon), Zeena Ammar (Emory University), Leehyun Yoon (UC Davis), Jessica Flannery (UNC Chapel Hill), Maximilian Scheuplein (Leiden University), Sofia (Sofi) Cárdenas (University of Southern California), Paola Odriozola (Yale University), Suzanne van de Groep (Erasmus University Rotterdam) for organizing the Mentor/Mentee match-up, Connecting Science and Society, and Career Perspectives Panel.

We thank **Eric Feczko** (University of Minnesota Medical School) for putting together and being the MC of our traditional unofficial zoom Karaoke event Sunday September 19 (1-3pm PDT, 4-6pm EDT, 9-11pm London time). We look forward to interacting and having fun together strengthening our bonds going forward.

We thank **Stefanie Bodison** (University of Florida) Chair and **Jenn Pfeifer** (University of Oregon) Vice-Chair and their generous committee members: Lucina Uddin (UCLA), Kayla Green (Erasmus University), Julia Moser (University of Tübingen), Charles Geier (Pennsylvania State University), Carlos Cardenas-Iniguez (USC), Kristina Uban (UC Irvine), Maya Rosen (Harvard University), Marjolein Barendse (UC Davis), Maximilian Scheuplein (Leiden University), Marybel Robledo Gonzalez (UC San Diego), Ines Mürner-Lavanchy (University of Bern), Kathryn Mills (University of Oregon), and Bea Luna (University of Pittsburgh).

We are also thankful to **Elsevier** for their continued significant support of Flux and, importantly, publishing *Developmental Cognitive Neuroscience*, the official journal of Flux. We thank **Nessa Bryce** (Harvard) and **Maggie Bryce** from Beyond Bounds Creative <u>www.beyondboundscreative.com</u> for creating a spectacular new DCN cover pro bono! We are also thankful for the continued generous support of of the Young Investigator Award by the **Kennedy Krieger Institute**.

The **Business Meeting** for Regular Members, where the status of the society will be presented will be recorded and on demand throughout the conference.

We also want to give a special thank you to **Podium Conference** Specialists Marischal DeArmond and Cendrine De Vis but especially **Casey Irelan**, who stepped in last minute after **Nick Farasopoulos** (who we also thank) had to step down due to an injury, and the amazing **Lauren Moline** who came back to help again even after recently donating a kidney to a stranger in need! A warm thank you to the **members of the Flux society and conference participants** for their enthusiasm and making the time to attend the Flux virtual conference! Welcome new Fluxers and a special thank you to those who have been supporting Flux through its maturation, your contributions are noted and greatly appreciated!

A reminder of the bond that brings us together is that "Flux" is not an acronym (not FLUX) but rather a term used to highlight that, as developmental cognitive neuroscientists, we are distinct in our investigations of the dynamic nature of cognition through development as stated in the aim of the Flux society "To advance the understanding of human brain development by serving as a forum for professional and student scientists, physicians, and educators to: exchange information and educate the next generation of developmental cognitive neuroscience researchers; make widely available scientific research findings on brain development; encourage translational research to clinical populations; promote public information by discussing implications on the fields of education, health, juvenile law, parenting, and mental health, and encourage further progress in the field of developmental cognitive neuroscience." The Flux Society strives to support Flux meetings going forward, but also to expand our ability to provide venues for scientific discussion and translational application.

We want to remind you of our ever growing **job bank** where there are postings for every level of career development for those looking for a position and those looking to hire.

We are delighted to invite you to plan on attending **Flux 10, September 6-9, 2022**, at the prestigious and historically significant **La Sorbonne**, where Piaget did his ground breaking work, in beautiful **Paris, France** hosted by our long-term fluxer and outstanding developmental cognitive neuroscientist **Gregoire Borst**, University of Paris Descartes. The scientific program will be chaired by the amazing neuroscientist, **Anna van Duijvenvoorde** (Leiden University) with what promises to be an outstanding meeting. In **2023**, we hope to finally 'return' to **Santa Rosa**, wine country, to fulfill our long-standing commitment to distributing our meetings across West Coast, East Coast, and EU venues. **Linda Wilbrecht** (Berkeley) with be our host chair!

We want to congratulate our new elected board members that include two international members: our current Program Chair, **Nikolaus Steinbeis** (University College London) and **Tzipi Horowitz-Kraus** (Technion, Israel Institute of Technology); and one US member **Lucina Uddin**, (UCLA). We also thank **Cate Hartley** (NYU) and **Bruce McCandliss** (Stanford) for their service as they complete their tenure in the Flux Board. Bruce McCandliss was one of the founders of Flux and his contributions were substantative to the formation and growth of Flux. **The 2021 Flux Board is now: Damien Fair – President, Bea Luna – Past President, Eveline Crone – Vice President – President Elect, Deanna Barch – Executive Treasurer, Margaret Sheridan – Executive Secretary, and the following at large board members: Nim Tottenham, Jenn Pfeifer, Christian Tamnes, Niko Steinbeis, Tzipi Horowitz-Kraus, Brad Schlaggar, and Lucina Uddin**.

A heartfelt thank you to **Brad Schlaggar** (Kennedy Krieger Institute) as he steps down from his 9 year tenure as Vice President of Flux (and will serve a final 2 year term on the Board of Directors). He made indispensable contributions to every aspect of the formation and development of Flux bringing his expertise in directing an Institute and rigorous scientific insight. Every major decision has been made with Brad's input.

Finally, we are very excited to announce that after being one of the founders of Flux and serving as its president for 9 years, Bea Luna (University of Pittsburgh), will be handing over the baton to **Damien Fair** (University of Minnesota) starting at this meeting! Damien has been integral to every aspect of Flux from the beginning and as a member of the Board. His high intellect and enthusiasm guarantee that Flux will continue to grow in new ways supporting the whole field. He begins the first presidency of the established Flux society, where board members elected by the membership and who have served in executive board roles are elected by the board to serve as president. All positions are for two years with an option for two more years, Bea will remain as past president for two years assisting in whatever is needed. The official transfer ceremony, will be in Paris, because it's Paris and we want to celebrate this momentous event in person!

We are looking forward to expanding our understanding of developmental cognitive neuroscience and virtually interacting with attendees and are confident that you will leave with greater understanding, new friends, and enhanced creativity in your approach.

Please tweet throughout the meeting at @fluxDCN using #Flux2021

Sincerely,

Beatriz Luna President

Brad Schlaggar Vice-President

Damien Fair Executive Treasurer

Eveline Crone Executive Board Member

Bruce McCandliss Board Member

Nim Tottenham Board Member

Margaret Sheridan Board Member

Catherine Hartley Board Member

Deanna Barch Board Member

Jennifer Pfeifer Board Member

Flux Leadership

Society Executive Committee

University of Pittsburgh, USA Beatriz Luna President Brad Schlaggar Washington University, St. Louis, Vice President USA Damien Fair University of Minnesota, USA **Executive Treasurer Eveline Crone** Leiden University, Netherlands Bruce McCandliss Stanford University, USA Nim Tottenham Columbia University, USA Deanna Barch, Washington University, St. Louis, USA Catherine Hartley New York University, USA Margaret Sheridan University of North Carolina, Chapel Hill, USA Jennifer Pfeifer University of Oregon, USA Christian K. Tamnes University of Oslo, Norway

Congress Scientific Program Committee

Nikolaus Steinbeis, Chair	University College London
Duncan Astle	University of Cambridge
Anna van Duijvenvoorde	Leiden University
Jessica Church-Lang	University of Texas at Austin
Alexandra Cohen	New York University
Tobias Hauser	University College London
Rogier Kiviet	Radboud University
Kieran O'Donnell	Yale University
Jennifer Pfeifer	University of Oregon
Yee Lee Shing	Goethe University Frankfurt
Leah Somervile	Harvard University
Sarah Yip	Yale University
Lilla Zollei	Massachusetts General Hospital/ Harvard Medical School

Award Committees

Catherine Hartley	New York University
Gaia Scerif	St. Catherine's College Oxford
Katie McLaughlin	Harvard University
Natalie Brito	New York University
Margaret Sheridan	University of North Carolina at Chapel Hill
Jennifer Pfeifer	University of Oregon
Christian Krog Tamnes	University of Oslo

Flux Trainee Committee

Dana Glenn Co-chair	University of California, Riverside
Na Yeon Kim (Co-chair),	Princeton University
Marjolein Barendse	University of Oregon
Zeena Ammar	Emory University
Leehyun Yoon	UC Davis
Jessica Flannery	UNC Chapel Hill
Maximilian Scheuplein	Leiden University
Sofia (Sofi) Cárdenas	University of Southern California
Paola Odriozola	Yale University
Suzanne van de Groep	Erasmus University Rotterdam

Flux Congress Management Podium Conference Specialists Marischal De Armond Casey Irelan Lauren Moline

General Congress Information

Pheedloop Virtual Conference Platform Gather.town

Pre-Registration

If you have completed your registration for the virtual congress, please enter the platform through the Flux Society website, and follow the instructions to login.

Registration

If you wish to register and have not yet done so, please register **here**.

Note: Registrations completed after September 10, 2021 can experience a delayed access to the virtual Conference platform.

Code of conduct

By entering the virtual platform and participating in Flux 2021 Virtual Congress you are agreeing to the Flux Code of Conduct. To read the code of conduct, please click <u>here</u>.

Conference Timelines

Real-time streaming of the Flux Virtual Congress will take place at the following times:

- Sept 17 Pre-conference workshops from 6am-12pm PST
- Sept 18 6:00am-2:30pm PST
- Sept 19 6:00am-2:30pm PST
- Sept 20 6:00am-2:30pm PST
- Sept 21 6:00am-1:30pm PST
- On-demand content until Dec 21, 2021

Business Meeting

The Society business meeting will be available on-demand to view any time throughout the conference dates, to ensure it is accessible to all. We encourage you to <u>view the</u> <u>Flux Business Meeting</u> to be better acquainted with the Flux Society.

Q&A Sessions

With the virtual conference platform, you can as questions via a text chat or in the Q&A Zoom option within the live sessions.

Flux Fun Night

Join our virtual KARAOKE night!

BRING IT! If you can sing (e.g., Damien Fair who will be on it), can barely hold a tune (e.g., Bea Luna, also participating), or just want to laugh while watching the entertainment, let's have a blast together, we deserve it to digest all the great science at the meeting. Eric Feczko will be our extraordinary MC that will make sure we laugh throughout. Complete the form to sign up to sign (or email lauren@podiumconferences.com)

Technical help during the virtual conference

If you encounter any technical issues during your virtual experience, please contact the software provider directly by accessing the help bubble in the Pheedloop platform.



Need help managing your Conference or Association?



FRIDAY, SEPTEMBER 17

Computational Modelling in Development

6:00am - 12:00pm PDT (1:00pm - 7:00pm GMT)

Workshop Organizers:

- Alexandra Cohen, New York University
- Tobias Hauser, University College London

Workshop Description:

The "Computational Modeling in Development" workshop will provide a didactic, hands-on introduction to computational modeling in development for researchers with limited prior knowledge in modelling. Following an introduction to principles of computational modelling in the first session, the second session will consist of participants completing practical tutorials in small groups led by trainee facilitators. The workshop will conclude with a panel discussion on the promises and pitfalls of computational modelling in development.

CONCURRENT PRACTICAL TUTORIALS

Tutorial 1: Inferring cognitive models of reinforcement learning from choice data

Led by: Maël Lebreton & Stefano Palminteri

Tutorial Description: In the first part of the tutorial the instructors will briefly first present the behavioural task (two-armed bandit), the computational models and the data structure. In a second step, the instructors will describe the analytical pipeline and the corresponding codes. The attendees will then be asked to perform the analyses and some predefined 'exercises' (including calculating correlations and simulation experiments). In the last part the instructors will comment on the results, debrief, answer questions and put the results in a broader perspective.

Programming language: MATLAB/Octave

Tutorial 2: Uncovering heterogeneity in preferences and behavior with finite mixture models

Led by: Adrian Bruhin

Tutorial Description: Finite mixture models enable us to uncover the heterogeneity in preferences and behavior parsimoniously. Unlike most econometric models that postulate a single representative agent, they assume that the population comprises a finite number of distinct types of individuals. By estimating a finite mixture model, we can uncover the relative size and average parameters of each of these types. Furthermore, we also obtain a classification of each individual into the type best fitting her behavior. Thus, finite mixture models allow us to focus on the most relevant part of heterogeneity – namely the distribution of distinct types of individuals – without having to estimate at the individual level. This tutorial provides an introduction to finite mixture models in two parts. The first part introduces the basic concepts and highlights some applications. Subsequently, the second part features a tutorial in the context of voluntary blood donation.

Programming language: R

Tutorial 3: An introduction to drift diffusion modeling

Led by: Wenjia (Joyce) Zhao & Ian Krajbich

Tutorial description: Drift diffusion models are widely applied in psychology and neuroscience to study time-course of decision making. They have been used successfully in a range of perceptual and preferential tasks (for an incomplete list, see https://u.osu.edu/ratcliffmckoon/the-diffusion-model-for-non-specialists/). This tutorial provides a primer on the theoretical framework of the model, as well as example code for model fitting and analyses.

Programming language: Python package (HDDM) and also likely some R

Tutorial 4: Computational models of human gaze data

Led by: Angela Radulescu

Tutorial description: This tutorial will cover the theory and practice of fitting computational models to human gaze data.

We will treat gaze data as an observable consequence of a latent selective attention process. We will build generative models of gaze that make real-time predictions about where participants will look, conditional on past choices, observations. and current attentional state. Modeling frameworks we will discuss include reinforcement learning and approximate Bayesian inference (e.g. particle filtering).

Programming language: Python

Tutorial 5: Computational modeling of goal-directed and habitual reinforcement-learning strategies

Led by: Claire Smid & Wouter Kool

Tutorial description: Human behavior is sometimes guided by habit, and sometimes by goal-directed planning. Recent advances in computational cognitive science have formalized this as a distinction between model-free and model-based reinforcement learning. In this tutorial, we will teach you how to use model fitting techniques to distinguish between these forms of decision making in humans across the developmental lifespan.

Programming language: Python (through Google colab)

FIT'NG All Ages: Advantages and Challenges of Longitudinal Fetal, Infant, and Toddler Neuroimaging

6:00am - 12:00pm PDT (9:00am - 3:00pm EST)

The fee to attend this workshop is \$20 and can be purchased with your Flux Congress Registration.

Meeting Organizers:

- FIT'NG (Fetal, Infant, Toddler Neuroimaging Group)
- Sarah Shultz, PhD, Emory University/Marcus Autism Center (co-chair)
- Dustin Scheinost, PhD, Yale University School of Medicine (co-chair)
- Zeena Ammar, Emory University/Marcus Autism Center
- Cat Camacho, Washington University in St. Louis
- Aiden Ford, Emory University/Marcus Autism Center
- Roxane Licandro, Vienna University of Technology
- Kelly Vaughn, University of Texas Health Science Center at Houston

Meeting Description:

Longitudinal MRI is essential for quantifying trajectories of brain change in typical development and in neurodevelopmental disorders. Rapid changes in brain anatomy and physiology during the prenatal, infant and toddler period necessitate longitudinal measurement but also present unique challenges for data acquisition, processing, and analysis. This satellite meeting will provide a forum for discussing these challenges and identifying possible solutions. Session 1 will focus on challenges relating to data collection (choice of sequence parameters and equipment, data acquisition procedures, and participant recruitment and retention) and data analysis (approaches to segmentation and parcellation, registration, and curve fitting). In Session 2, expert panelists will provide a 'behind the scenes' look at important decision points and strategies adopted in their own research designs, stimulating a live discussion of solutions to challenges inherent in longitudinal neuroimaging. Finally, Session 3 will showcase new and exciting work utilizing longitudinal approaches discussed in preceding sessions.

Speakers:

- Jonathan O'Muircheartaigh, PhD
- Cassie Hendrix, PhD
- Cynthia Rogers, MD
- Georg Langs, PhD
- Lilla Zöllei, PhD
- Kathryn Mills, PhD
- Catherine Limperopoulous, PhD
- Lana Vasung, MD, PhD

- Jana Hutter, PhD
- Weili Lin, PhD
- Mirella Dapretto, PhD
- Nadine Gaab, PhD
- Sean Deoni, PhD
- Gregor Kasprian, MD
- Richard Bethlehem, PhD

SATURDAY, SEPTEMBER 18

Congress Opening Remarks

6:00am - 6:30am PDT (9:00am - 9:30am EST)

- Beatriz Luna, University of Pittsburgh
- Nikolaus Steinbeis, University College London

Symposium #1 - How does the developing brain organize experience to model the world?

6:30am - 8:00am PDT (9:30am - 11:00am EST)

- Chairs: Christine Coughlin, University of Texas at Austin, and Alison Preston, University of Texas at Austin
- Speakers: **Kate Nussenbaum**, New York University "Adaptability of positive and negative learning rates across development"

Christine Coughlin, University of Texas at Austin

"Developmental differences in brain function during memory-guided inference"

Thomas Wills, University College London, "Neural correlates for the consolidation and specificity of hippocampal memories during post-natal development"

Theresa Cheng, University of Oregon, "Neural correlates for the consolidation and specificity of hippocampal memories during post-natal development"

Young Investigator Award Talk

8:00am – 8:30am PDT (11:00am – 11:30am EST)



- Chairs:
- irs: Jennifer Pfeifer, University of Oregon, and Sarah-Jayne Blakemore, University of Cambridge



Kate Mills, University of Oregon

Kate Mills is an Assistant Professor in the Department of Psychology at the University of Oregon. Her lab applies longitudinal methods to investigate the intertwined social, biological, and cognitive processes that underlie the development of skills needed to navigate the social environment.

Symposium #2 - Transdiagnostic approaches to developmental disorders: Beyond the boundaries of diagnosis

8:30am - 10:00am PDT (11:30am - 1:00pm EST)

Chairs: Duncan Astle, University of Cambridge, and Rogier Kievit, Radboud University

Speakers: **Joe Bathelt**, University of London, "Probing the overarching continuum theory: Data-driven phenotyping of ADHD and ASD"

Danyal Akarca, University of Cambridge, "Generative modelling of neurodevelopmental diversity" **Danielle Bassett**, University of Pennsylvania, "Transdiagnostic dimensions of psychopathology explain individuals' unique deviations from normative neurodevelopment in brain structure"

Corina Greven, Donders Institute for Brain Cognition and Behaviour, "Mindfulness-based intervention for children with ADHD and their parents: self-control as a transdiagnostic trait"

Essi Viding, University College London, "Advancing the study of transdiagnostic mechanisms: The importance of considering development and measurement"

Trainee Dissertation Award Talk

10:30am - 11:00am PDT (1:30pm - 2:00pm EST)

Chair: Cate Hartley, New York University

Infant fMRI: A Model System for Cognitive Neuroscience



Dr. Cameron Ellis, Yale University

Dr. Cameron Ellis completed his PhD in Psychology in 2021 from Yale University (by way of Princeton University), working with Dr. Nicholas Turk-Browne. He received his BSc from University of Auckland (New Zealand) in 2013. In his research, he studies how basic building blocks of cognition emerge and mature in the infant brain, and seeks to understand how infants are adapted to the challenges they face during development. In his dissertation, he developed methods for conducting fMRI with awake, behaving infants and pursued three directions: 1) how the visual system is organized early in life, long before visual abilities reach maturity, 2) how attention enables infants to sift through a world full of complexity, and 3) how infants can learn so much yet remember so little of their early life experiences.

Trainee Session – Career Perspectives Panel

11:00am - 12:30pm PDT (2:00 am - 3:30pm EST)

Chairs: Sofi Cardenas, University of Southern California; Maximilian Scheuplein, Leiden University; and Jessica Flannery, UNC Chapel Hill

This panel discussion will include a diverse set of experts, who work within and/or outside of academia. Besides sharing their own stories about successes and struggles, they will provide hands-on advice on how to navigate the job market as an early career researcher. The goal of this session is to inspire (particularly) early career researchers about possible career trajectories as well as to discuss some common choices everyone faces. To stimulate an open and honest discussion, this session will not be recorded. Stay tuned for more information.



Gail Rosenbaum, PhD, Staff Scientist, Geisinger Health

Gail Rosenbaum is a Staff Scientist in the Behavioral Insights Team at Geisinger Health. During her PhD training at Temple University and postdoctoral fellowship at New York University, Gail's research focused on the development of risky decision making across adolescence, drawing on insights from developmental psychology, cognitive neuroscience, and behavioral economics. At Geisinger, she applies findings from research on judgment and decision making to improve healthcare decisions and outcomes for patients and employees.



Marc Seal, PhD, Murdoch Children's Research Institute & The University of Melbourne, Australia Marc Seal currently holds a joint appointment as an Associate Professor in the Department of Paediatrics, The University of Melbourne and as Group Leader of the Developmental Imaging Research Group at the Murdoch Children's Research Institute. In this role he is responsible for coordinating and facilitating clinical research utilising the MRI Scanners at the Melbourne Children's campus and supervise a multidisciplinary team of clinicians, MRI technologists and neuroscientists. He has extensive expertise in paediatric neuroimaging and for the last 12 years his primary role has been to enable and facilitate high quality neurodevelopmental research on the Melbourne Children's Campus. The work of his team and international collaborators has provided novel information about individual differences in brain development, from birth to adolescence, and importantly the functional consequences of idiosyncratic variation in these individual developmental trajectories.



Yee Lee Shing, PhD, Department of Psychology, Goethe University Frankfurt, Germany Yee Lee Shing is Professor of Developmental Psychology at the Department of Psychology, Goethe University Frankfurt. She is the Principal Investigator of the Lifespan Cognitive and Brain Development (LISCO) Lab and also a member of the IDeA Centre of the Leibniz Institute for Research and Information in Education (DIPF). She is interested in understanding the development of cognitive and neural functions across the human lifespan, with a focus on long-term memory and predictive processing. Her research combines neuroimaging (e.g., structural and functional magnetic resonance imaging) and multivariate developmental methodology (e.g., structural equation and latent growth curve modelling) to investigate the unfolding of brain–behaviour relationships across time. Professor Shing has received several grants and

awards for her work, including the Heinz Maier-Leibnitz-Preis (German Research Foundation), Jacobs Foundation Research Fellow, and ERC Starting Grant.



Andrea Niles, PhD, Chief Science Officer and Co-Founder of Youper AI

Andrea Niles is the Chief Science Officer and Co-Founder of Youper AI. Youper is a digital mental health company that uses artificial intelligence to increase access to and facilitate mental health treatment. Youper delivers AI Therapy, a novel treatment approach developed by Dr. Niles and the Youper team. Youper also connects users via telehealth to providers who can prescribe psychiatric medications. Dr. Niles is passionate about using technology to disseminate evidence-based treatments. Her work at Youper falls at the intersection of her interests in technology, treatment development, research, data science, and clinical work. You can use these two links: <u>https://www.youper.ai/ https://www.linkedin.com/in/andreaniles-bb8772100/</u>

Trainee Session – Connecting Science and Society Panel & Workshop

1:00pm - 2:30pm PDT (4:00pm - 5:30pm EST)

Chairs: **Na Yeon Kim**, Princeton University; **Marjolein Barendse**, University of Oregon; and **Suzanne van de Groep**, Erasmus University Rotterdam

The Flux Trainee Committee is organizing two events under the theme of "Connecting Science and Society." Our first event will be a panel discussion where we will invite experts to share their experiences in communicating science to non-academic audiences, as well as involving citizens (i.e. your research population) in research. We hope to cover expertise on science journalism, translating science to policy-making, communicating with younger audiences, and citizen science. The speakers on our panel are:



Sabine Kastner, MD, PhD, Princeton Neuroscience Institute and Department of Psychology, Princeton University

Sabine Kastner is Professor of Psychology and Neuroscience at Princeton University. She leads the Neuroscience of Attention and Perception Laboratory which investigates the neural basis of visual perception, attention, and awareness in the primate brain. One recent direction of her research includes the development of attention and perceptual functions in school-aged children with and without developmental disorders. In addition to publishing more than 150 articles in journals and books, she has served on several editorial boards and is Editor-in-Chief of Progress in Neurobiology. Professor Kastner is also one of the co-founders and chief editors for the Frontiers of Young Minds Neuroscience section. Frontiers for Young Minds provides an opportunity for children from all around the world to engage with scientific research and participate in the publishing process. Her contribution has been recognized by the Society for Neuroscience's 2019 Award for Education in Neuroscience. She will join our panel discussion and share her insights on Frontiers for Young Minds. Website: https://scholar.princeton.edu/napl



Moira O'Neil, Senior Vice Presidents of Research Interpretation at FrameWorks Institute

Moira O'Neil leads FrameWorks' efforts to interpret and share communications science with the nonprofit sector so it can more effectively drive social change. Moira manages a team of communications professionals and social scientists who help fields of practice frame social issues in ways that have the proven power to deepen understanding and inspire action.



Michelle Achterberg, PhD, Postdoctoral researcher at Erasmus University Rotterdam and Leiden University Michelle Achterberg is a postdoctoral researcher at Erasmus University Rotterdam and Leiden University, with an interest in social emotional development. In her studies, she focuses on the underlying neural mechanisms of, and environmental influences on, social emotion regulation in childhood. In addition to her scientific research, she aims to build bridges between science and society by communicating scientific findings to the broader society, as well as incorporating the society in setting up new studies, using citizen-science. Website: <u>https:// www.michelleachterberg.nl/</u> Twitter: <u>https://twitter.com/_MAchterberg</u>



Rebecca Schwarzlose, PhD, Department of Psychiatry, Washington University in St. Louis Rebecca Schwarzlose is a postdoctoral scholar in the Department of Psychiatry at Washington University in St. Louis. Her research uses functional neuroimaging to investigate sensory prediction and anxiety in typically developing children and children with neurodevelopmental disorders. Before coming to Washington University, Rebecca served as chief editor of Trends in Cognitive Sciences. She is also the author of a critically acclaimed trade book about topographic brain maps called Brainscapes: The Warped,

Wondrous Maps Written in Your Brain – And How They Guide You. She is the recipient of both research and science communication grants, including a grant from the Alfred P. Sloan Foundation Program for Public Understanding in Science and Technology. Twitter: <u>https://twitter.com/gothemind</u> Website: <u>http://www.rebeccaschwarzlose.com</u> Blog: <u>https://gardenofthemind.com</u>

Workshop

The panel discussion will be followed by a trainee-led workshop that is exclusively open to Flux trainee members (i.e., students and post-docs). In this workshop attendees will brainstorm in small groups about a project of their own choice that aims to connect science and society. For example, attendees can devise their own science communication or citizen science project. After the workshop, attendees will pitch their initial ideas for a project and receive feedback. We encourage attendees to carry out the project within the next year, but this is not obligatory. Progress on implemented projects can be presented in poster format at Flux 2022. Trainees who attend this workshop will have a better understanding of the ways in which science and society can have mutually beneficial connections, will have networked with other trainees, and will find out whether they want to pursue future projects in which they aim to foster a connection between science and society.

SUNDAY, SEPTEMBER 19

Flash Talks #1

6:00am - 6:30am PDT (9:00am - 9:30am EST)

Chair: Laurel Gabard-Durnam, Northeastern University

Speakers: **Cong Wang**, Peking University, "Separable neurocognitive changes underlie the development of communicative ability in adolescence"

Max Herzberg, Washington University in St. Louis, "The association between maternal cortisol and neonatal amygdala volume is moderated by socioeconomic advantage"

Robert Hermosillo, University of Minnesota, "Using Probabilistic Atlases of Functional Neural Networks in Adolescents to Improve Reliability of Group Brain-Behavior Associations"

Vaidehi Natu, Stanford University, "Myelin contributes to microstructural growth in human sensory cortex during early infancy"

Nicholas Fogleman, University of North Carolina at Chapel Hill, "Relation between intrinsic brain network organization and internalizing and externalizing behaviors in children with ADHD following methylphenidate administration"

Dietsje Jolles, Leiden University, "Can immaturity be adaptive? Developmental changes in the interaction between top-down control and experiential learning in a predictable task environment"

Poster Session #1

6:30am – 8:00am PDT (9:30am – 11:00am EST) Join us in Gather.town - <u>https://gather.town/app/q8MPzCGuvjyko2Zo/Flux2021</u>

Diversity Symposium

8:00am - 9:00am PDT (11:00am - 12:00pm EST)

Diversity Session Panel Members:

Stefanie Bodison, Jenn Pfeifer, Calos Cardenas-Iniguez, Lucina Uddin, Charles, Geier, Kristina Uban

Last year was the inaugural Diversity Session at Flux, which opened with a compelling presentation on systemic racism in neuroscience and smaller breakout rooms addressing a range of issues aimed towards fostering a diverse and inclusive society of developmental cognitive neuroscientists. One year later, a panel of Diversity Working Group members will have an honest conversation about where we are now; what if anything has changed; and how we can continue to make

sustainable change for diversity, equity, and inclusion within the Flux Society. Our goal is to identify actionable steps to enhance diversity, equity, and inclusion in developmental cognitive neuroscience now, and into the near future.

We are excited to offer two diversity-related events during the Flux 2021 conference. Join our Affinity Group Meetings on Monday, Sept 20th at 1:00pm –2:00pm PDT (4:00pm – 5:00pm EST).

Symposium #3 - Exploring the depths of the brain: The functional significance of sulcal development

9:30am - 11:00am PDT (12:30pm - 2:00pm EST)

Chair: Silvia Bunge, University of California, Berkeley, and Kevin Weiner, University of California, Berkeley

Speakers: **Willa Voorhies**, University of California, Berkeley, *"Lateral prefrontal sulcal morphology predicts individual variability in reasoning"*

Jessica Dubois, Université de Paris; NeuroSpin, "Mapping the early folding of the human brain: MRI studies in babies and relationships to functional outcome"

Michael Arcaro, University of California, Berkeley, *"Sulcal morphology predicts face patches in macaques"* **Gregoire Borst**, Université de Paris – CNRS, *"Sulcation of the intraparietal sulcus and mathematical abilities from childhood to adulthood"*

Symposium #4 - FIT'NG - Fetal and Infant Neuroimaging

11:15am – 12:45pm PDT (2:15pm – 3:45pm EST)

Chair: Lilla Zöllei, Harvard University

Speakers: **Josepheen Cruz**, Developing Brain Institute, "Disrupted resting state functional connectivity in clinically high-risk fetuses"

Joana Alves Sa De Almeida, University Hospitals of Geneva, Geneva, Switzerland, "Music impacts brain structural maturation in very preterm infants"

Sandra W. Jacobson, PhD, Wayne State University and **Fleur L. Warton**, University of Cape Town, "Brain imaging of unsedated newborn infants prenatally exposed to alcohol or methamphetamine during pregnancy in Cape Town, South Africa"

The "Fetal and Infant Neuroimaging" symposium will host a panel of invited speakers. They will present their latest findings in the areas of disrupted functional connectivity in high-risk fetuses, the impact of prematurity and early music intervention on early brain development as well as infant research on effects of contaminants and data analysis challenges. This event is organized by the Fetal, Infant, Toddler Neuroimaging Group (FIT'NG) group.

Social Event

1:00pm - 2:30pm PDT (4:00pm - 5:30pm EST)

Join Flux for our virtual KARAOKE night!

The unofficial **Flux Karaoke** event is... so BRING IT! If you can sing (e.g., **Damien Fair** who will be on it), can barely hold a tune (e.g., **Bea Luna**, also participating), or just want to laugh while watching the entertainment, let's have a blast together, we deserve it to digest all the great science at the meeting. **Eric Feczko** will be our extraordinary MC that will make sure we laugh throughout.

We have 21 singer slots in 5min increments. Prior to your session time, find your song on YouTube by searching for "song title' Karaoke" – make sure you have the version you want. When your time comes, you'll share your screen in the Zoom meeting and you can SING your heart out! Sign up to participate **HERE** before September 17.

MONDAY, SEPTEMBER 20

Symposium #5 - Multidimensional Approaches to Early Adversity Across Species

6:00am - 7:30am PDT (9:00am - 10:30am EST)

Chair: Elysia Davis, University of Denver, and Tallie Z. Baram, University of California, Irvine

Speakers: **Elysia Davis**, University of Denver, "Early life exposure to unpredictable sensory signals shapes neural circuit development"

Mar Sanchez / Kai McCormack, Spelman College "Effects of maternal sensitivity and predictability on the development of emotional regulation and cognitive function in rhesus macaques"

Jamie Hanson, University of Pittsburgh, "Expanding Bioecological Conceptualizations of Unpredictability and Volatility: Connections with Behavioral and Neurobiological Development"

Riika Korja, University of Turku, "Predictability of maternal care and child's neuropsychological and psychosocial development – Findings from FinnBrain Birth Cohort"

Huttenlocher Lecture - Neural basis of language development

7:30am – 8:30am PDT (10:30am – 11:30am EST)

Chair: Nikolaus Steinbeis, University College London

Neural basis of language development



Prof. Dr. Dr. h.c. Angela D. Friederici, Director at the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

Angela D. Friederici is director at the Max Planck Institute for Human Cognitive and Brain Sciences (MPI CBS) in Leipzig, Germany. She is Founding director of this institute, founded in 1994. She is honorary professor at the University of Leipzig (Psychology), the University of Potsdam (Linguistics) and the Charité Berlin (Neurology) and holds a Doctor honoris Causa from the University of Mons, Belgium.

She graduated in linguistics and psychology in Bonn (Germany) and spent a postdoctoral year at MIT (USA). Prior to joining the Max Planck Society as a director, she was a professor for Cognitive Sciences at the Free University Berlin. Her research on the neural basis of language and language acquisition has received recognition across disciplines.

Flash Talks #2

9:00am - 9:30pm PDT (12:30pm - 1:00pm EST)

Chair: D.D. Jolles, Leiden University

Speakers: **Tehila Nugiel**, The University of Texas at Austin, *"Functional connectivity of cognitive control and learning systems in English learners"*

Saara Nolvi, University of Turku, "Prospective association of maternal psychosocial stress during pregnancy with newborn hippocampal volume and its implications for infant social-emotional development"

Claire Donnici, Cumming School of Medicine, University of Calgary, *"Prenatal and postnatal maternal depressive symptoms and longitudinal changes in limbic structure in young children"*

Nourhan Elsayed, Washington University in St. Louis, *"From Poverty to Cognition: Examining the Relative Contributions of Environmental, Neural and Genetics Influences"*

Simone Dobbelaar, Leiden University, "Aggressive responses following social evaluation and the underlying motives in middle childhood: an fMRI replication design"

Amanda Baker, University of California, Los Angeles, "Subclinical anxiety modulates neural and behavioral response to safety decisions in early adolescence"

Poster Session #2

9:30am – 11:00am PDT (12:30pm – 2:00pm EST) Join us in Gather.town - <u>https://gather.town/app/q8MPzCGuvjyko2Zo/Flux2021</u>

Symposium #6 - Methodological considerations and advances in developmental neuroscience

11:00am - 12:30pm PDT (2:00pm - 3:30pm EST)

Chair: Sarah Yip, Yale University

Speakers: **Ethan McCormick**, University of North Carolina at Chapel Hill, *"Leveraging missing data to model simultaneous growth processe"*

Monica Rosenberg, University of Chicago, "Characterizing working memory and attention in development with brain-based predictive models"

Chandra Sripada, University of Michigan, "New Methods to Investigate the Connectomic Basis of Cognitive Abilities in Childhood"

Petra Vertes, Cambridge University, "Imaging transcriptomic approaches to understanding brain development"

Diversity Affinity Group Sessions

1:00pm - 2:00pm PDT (4:00pm - 5:00pm EST)

Affinity Group Facilitators:

- BIPOC (Stefanie Bodison, Lucona Uddin, Kayla Green)
- First-Gen (Jenn Pfeifer, Marjolein Barendse, Kate Mills, Julia Moser)
- LGBTQIA (Carlos Cardenas-Iniguez)
- Allies & Advocates (Chuck Geier, Kristina Uban, Maya Rosen)

For the first time, Flux will be hosting affinity group meetings for BIPOC, First-Gen, LGBTQIA, and Allies & Advocates for people to connect and work towards inclusivity within the science community by cultivating and nurturing sustainable connections within the Flux Society and beyond. We recognize that many people might intersect with multiple groups, but constraints with the online nature of the conference limits our ability to offer non-opposing sessions for each group at this time. Our plan for affinity groups to meet consistently over the next year to develop a sustainable action plan and encourage cross-group participation.

TUESDAY, SEPTEMBER 21

Flash Talks #3

6:00am - 6:30am PDT (9:00am - 9:30am EST)

Chair: Wouter van den Bos, University of Amsterdam

Speakers: **Hyesang Chang**, Stanford University, "Foundational number sense training gains are predicted by hippocampal-parietal circuits"

Sagana Vijayarajah, University of Toronto, "Developmental refinement of attention impacts semantic memory retrieval through adolescence"

Finnegan Calabro, University of Pittsburgh, "Development of dopaminergic neurophysiology supports improvements in the use of optimal reward learning strategies through adolescence"

Tristan Yates, Yale University, "How infants carve up continuous experience into neural events" **Yuyan (Lillian) Xu**, University of Wisconsin-Madison, "Childhood unpredictability, reward processing, and reward-related psychopathology"

Poster Session #3

6:30am - 8:00am PDT (9:30am - 11:00am EST) Join us in Gather.town - https://gather.town/app/q8MPzCGuvjyko2Zo/Flux2021

Science of Learning Symposium

8:00am - 9:00am PDT (11:00am - 12:00pm EST)

Jessica Church-Lang, University of Texas at Austin, and Yee Lee Shing, Goethe University Frankfurt Chairs:

Alina Quach, Northeastern University, "Guiding the future by linking the past: Adolescent development Speakers: of value-based generalization"

Iryna Schommartz, Goethe University Frankfurt, "From learning to remembering: How do term- and preterm-born children differ from adults in memory consolidation?

Phoebe Thomson, The University of Melbourne, "Disconnection of functional brain networks in ADHD: A longitudinal study of child and adolescent development

Symposium #7 - Social motivation in flux: Understanding the development of social cognition and behavior

9:30am - 11:00am PDT (12:30pm - 2:00pm EST)

Chair: Leah Somerville, Harvard University, and Kieran O'Donnell, Yale University

Speakers: Wouter van den Bos, University of Amsterdam, "Social Learning in Social networks in Adolescence" Jennifer Silvers, University of California, Los Angeles, "Social regulation of emotional experience and decision making across development"

> Hilary Richardson, University of Edinburgh, "Selective responses for theory of mind in congenitally blind children"

Hirofumi Morishita, Icahn School of Medicine at Mount Sinai, "Prefrontal social circuit vulnerability to juvenile social isolation"

Symposium #8 - Neurodevelopmental vulnerability to psychopathology: **Building resilience**

11:15am – 12:45pm PDT (2:15pm – 3:45pm EST)

- Chair: Lucy Vanes, King's College London, and Chiara Nosarti, King's College London
- Speakers: Lucy Vanes, King's College London, "The role of neonatal brain structure and home environment in childhood outcomes following very preterm birth"

Alexis Brieant, Yale University, "Associations Among Negative Life Events, Changes in Cortico-Limbic Connectivity, and Psychopathology in the ABCD Study: Exploring Pathways to Resilience" Ronny Geva, Bar-Ilan University, "Do Perinatal Neural Intergity and Precocial Exposure Shape Attention?" **Nikolaos Koutsouleris**, University of Munich, "Machine learning approaches to identifying vulnerability in at-risk populations"

Closing Remarks

12:45pm – 1:30pm PDT (4:00pm – 5:30pm EST)

- Beatriz Luna, University of Pittsburgh
- Nikolaus Steinbeis, University College London



JACOBS

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Our Promise to Youth

Post Conference Flux Outreach – Public Talk September 21, 2021



We are excited to announce a new Flux initiative, the free FluxOutreach Public Talk supported by the Jacobs Foundation. This year the Public Talk will be delivered by Jessica Church-Lang followed by a discussion session with a panel formed by Bea Luna, Damien Fair, Ashley Parr (Postdoc), and Anita Randolph (community engagement and education director). The aim is to translate our findings to inform relevant constituents of the public who could share our excitement about developmental cognitive neuroscience. In particular, we hope to generate dialogue with educators as well as to connect with young potential scientists from under-represented groups at HBCUs and other organizations working to promote and encourage a multitude of voices in science.



Jessica Church-Lang University of Texas at Austin Moderator



Beatriz Luna University of Pittsburgh Panel



Damien Fair University of Minnesota Panel



Ashley Parr University of Pittsburgh Panel



Anita Randolph University of Minnesota Panel

When: Tuesday, September 21 at 4:00 – 5:30PDT Cost: FREE Register <u>HERE</u>



Poster Session 1 Sunday, September 19 6:30

Sunday, September 19 6:30am – 8:00am PDT

Poster Session 2 Monday, September 20 9:30am – 11:00am PDT

Poster Session 3 Tuesday, September 21 6:30am – 8:00am PDT

Poster board numbers are indicated as follows: Poster Session – Theme – Board Number (Example: 2-A-10)

Poster presenters will be at their poster booth during their assigned poster time but the posters are available to review throughout the congress.

Themes

- A Executive Functioning
- B Socioemotional Processing
- C Learning
- D Rewards/Motivation
- E Education
- F Memory
- G Environment (Stress, SES)
- H Brain Structure
- I Networks

- J Mechanisms (hormones, neurotransmitters, physiology)
- K Methods
- L Clinical Populations
- M Attention
- N Language
- O Brain Function
- P Brain Connectivity
- Q Other

For a complete list of poster abstracts please visit **www.fluxsociety.org**

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Poster Session 1

Sunday, September 19, 2021 6:30am – 8:00am PST

A – Executive functioning

1-A-1 The role of medial frontal theta among children and adolescents with consistently high threat sensitivity

Taylor Heffer¹, Stefon van Noordt², Teena Willoughby¹ ¹Brock University, ²Montréal Neurological Institute-Hospital, McGill University

1-A-2 The moderating role of parental scaffolding in relationships between low socioeconomic status and development of executive function: A preregistered longitudinal study

Maya Rosen¹, Rachel Rome¹, Liliana Lengua², Katie McLaughlin¹

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1-A-3 Examination of Neurobehavioral Developmental Trajectories of Cognitive, Motor, and Emotional Control in Relation to Sex Differences in Psychopathology

Keri Rosch¹, Rebecca Rochowiak², Alyssa DeRonda², Stewart Mostofsky¹

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1-A-4 Longitudinal development of response inhibition as measured by the Go/No-Go and Stop Signal Tasks across adolescence and into young adulthood

Hannah Weiss¹, Paul Collins², Monica Luciana²

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1-A-5 Resting State Cortical Hubs in Youths

Damion Demeter¹, Evan Gordon², Tehila Nugiel³, AnnaCarolina Garza¹, Tyler Larguinho¹, Jessica Church¹

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1-A-6 Influence of semantic language ability on inhibitory control tasks in children across the socioeconomic spectrum

Rita Taylor¹, Deanna Barch¹ ¹Washington University, St. Louis

1-A-7 Mindfulness Training is related to Improved Executive Functions in Preschool Children: An EEG Study

Ilana Shlomov¹, Tzipi Horowitz-kraus¹, Nava Levit-Binnun² ¹Technion Israel Institute of Technology, ²Segol

1-A-8 Training cognitive control in childhood: effects on behavioural intra-individual variability and functional connectivity of cognitive control systems

Roser Cañigueral¹, Claire Smid¹, Keertana Ganesan¹, Abigail Thompson¹, Scott Marek², Ryland Miller², Andrew Van², David Montez², Nico U. F. Dosenbach², Nikolaus Steinbeis¹

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1-A-9 Brain functional topology in infancy predicts error detection twelve months later

Josué Rico-Picó¹, Sebastián Moyano¹, Ángela Conejero¹, Ángela Hoyo¹, M. Ángeles Ballesteros-Duperón¹, M. Rosario Rueda¹

¹University of Granada

1-A-10 Creating different cognitive and neurobiological profiles in typically developing children using a non-parametric approach: an fMRI study

Victoria Khalfin Fekson¹, Tzipi Horowitz-Kraus¹

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1-A-11 Can immaturity be adaptive? Developmental changes in the interaction between top-down control and experiential learning in a predictable task environment

Dietsje Jolles¹, Zdena Op de Macks, Margot Schel, Bruno Bocanegra², Linda Van Leijenhorst¹

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1-A-12 Reduced inter-subject correlations of brain activity patterns during lexicosemantic decision in adolescents with ASD

Kalekirstos Alemu¹, Apeksha Sridhar¹, Molly Wilkinson¹, Ksenija Marinkovic², R. Joanne Keehn¹, Annika Linke¹, Ralph-Axel Müller¹

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B – Socioemotional processing

1-B-13 The impact of depression on mothers' neural processing of their adolescents' social cues

Marjolein Barendse¹, Nicholas Allen¹, Lisa Sheeber¹, Jennifer Pfeifer¹

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1-B-15 Cognitive control during an emotional interference task in adolescence: A BANDA study

Haley Hegefeld¹, Yoon Ji Lee¹, Susan Whitfield-Gabrieli¹, Juliet Davidow¹

¹Northeastern University

1-B-16 Behavioral and neural responses to processing facial expressions and their links with peer victimization

Sanne Kellij¹, Gerine Lodder², René Veenstra³, Berna Güroğlu⁴ ¹Groningen University / Leiden University, ²Tilburg University, ³Groningen University, ⁴Leiden University

1-B-17 Temperamental typologies in the ABCD study: Implications for psychopathology risk factors

Lauren Hill-Bowen¹, Jessica Flannery¹, Arshitha Basavaraj², Matthew Mattoni³, Sarah Hartmann¹, Angela Laird¹, Elisa Trucco¹, Matthew Sutherland¹

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1-B-18 Babies' processing of emotional expressions: multivariate pattern analysis of EEG signals

Angela Conejero¹, Eduardo López-Larraz², Angela Hoyo¹, Maria Concepción Castellanos¹, Luis Montesano², M. Rosario Rueda¹, María Ángeles Ballesteros¹, Aurelie Coubart

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1-B-19 Leveraging hierarchical growth curve modeling with parcellated fMRI data to rigorously test the adolescent social reorientation model

Danielle Cosme¹, John Flournoy², Jordan Livingston³, Matthew Lieberman⁴, Mirella Dapretto⁴, Jennifer Pfeifer⁵

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1-B-20 Does Maternal Depression History Moderate Youth Reaction to Mothers' and Peers' Social Evaluation? An fMRI-daily diary study

Reuma Gadassi-Polack¹, Erica Ho¹, Wisteria Deng¹, Richard Watts¹, Dylan Gee¹, Jutta Joormann¹, Hedy Kober¹ ¹Yale University

1-B-21 Valence Flexibility in Appraising Self and Others: Effects of Development Before and After COVID-19

Jennifer Britton¹, Beatriz Yepes¹, Stephanie Novotny¹, Evan Burdette¹

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C – Learning

1-C-23 Young children form highly specific memory for structured experiences

Tess Allegra Forest¹, Zahra Abolghasem¹, Amy Finn¹, Margaret Schlichting¹

¹University of Toronto

1-C-24 Longitudinal changes in white matter properties, not cross-sectional differences, predict development of reading and math scores

Ethan Roy¹, Manjari Narayan¹, Adam Richie-Halford², John Kruper², Timothy Brown³, Terry Jernigan³, Ariel Rokem², Jason Yeatman¹

¹Stanford University, ²University of Washington, ³University of California, San Diego

1-C-25 Learning about Safety: Neural Correlates of Conditioned Inhibition in Typical Development

Paola Odriozola¹, Sahana Kribakaran¹, Stephanie DeCross², Emily Cohodes¹, Jason Haberman¹, Katie McLaughlin², Dylan Gee¹

¹Yale University, ²Harvard University

1-C-26 Exploration heuristics decrease during youth

Magda Dubois¹, Aislinn Bowler¹, Madeleine Moses-Payne¹, Johanna Habicht¹, Rani Moran¹, Niko Steinbeis¹, Tobias Hauser¹

¹University College London

1-C-27 Longitudinal cortical changes in audio-visual letter-sound processing in typically reading children

Linda Romanovska¹, Roef Janssen¹, Milene Bonte¹ ¹Maastricht University

1-C-28 Statistical learning in newborn infants and fetuses in the last trimester of pregnancy

Julia Moser¹, Laura Batterink², Franziska Schleger¹, Magdalene Weiss³, Ken Paller⁴, Hubert Preissl¹

¹Helmholtz Center Munich at the University of Tübingen, ²Western University, ³University of Tübingen, ⁴Northwestern University

D – Rewards/Motivation

1-D-29 Discounting rates and reward in the ABCD cohort: Relationship to social, familial and clinical factors

Robert Kohler¹, Sarah Lichenstein¹, Sarah Yip¹

¹Yale University

1-D-30 The structural brain basis of model-based and model-free decision-making in childhood

Claire Smid¹, Abigail Thompson¹, Keertana Ganesan¹, Roser Canigueral¹, Wouter Kool², Tobias Hauser¹, Nikolaus Steinbeis¹

¹University College London, ²Washington University in St Louis

1-D-32 Characterizing puberty-related changes in fronto-striatal resting-state functional connectivity in adolescence

Amar Ojha¹, Ashley Parr¹, Will Foran¹, Finnegan Calabro¹, Cecile Ladouceur¹, Beatriz Luna¹ ¹University of Pittsburgh

E – Education

1-E-33 Exploring neural correlates of behavioral and academic resilience among children in poverty

Monica Ellwood-Lowe¹, Carolyn Irving¹, Silvia Bunge¹ ¹University of California, Berkeley

1-E-34 Canonical network functional connectivity predicts math achievement in childhood: A connectomebased predictive modeling approach

Andrew Lynn¹, Eric Wilkey², Gavin Price¹ ¹Vanderbilt University, ²Western University

F – Memory

1-F-35 A longitudinal study of episodic memory and cognitive development in early childhood

Rachael Elward¹, Maneet Saini², Faraneh Vargha-Khadem² ¹London South Bank University, ²UCL

1-F-36 Effects of sleep duration and quality on memory consolidation of preterm and term born children

Tobias Haase¹, Henriette Schütz², Nina Wald de Chamorro², Iryna Schommartz¹, Angela Kaindl², Yee Lee Shing¹, Claudia Buss²

¹Goethe University, Frankfurt, ²Charité Universitätsmedizin, Berlin

G – Environment (Stress, SES)

1-G-38 Examining the relationship between shared book reading at home, white matter organization in kindergarten, and subsequent language and reading abilities: a longitudinal investigation

Kelsey Davison¹, Jennifer Zuk¹, Lindsay Mullin², Vivian Schultz², Ola Ozernov-Palchik³, Elizabeth Norton⁴, John Gabrieli³, Xi Yu⁵, Nadine Gaab⁶

¹Boston University, ²Boston Children's Hospital, ³MIT, ⁴Northwestern University, ⁵Beijing Normal University, ⁶Harvard University

1-G-39 Early Adversity Exposure and Brain Structure Across Development: An ROI-based Meta-Analysis

Anna Vannucci¹, Andrea Fields¹, Eleanor Hansen¹, Ariel Katz¹, Ayumi Tachida¹, John Kerwin¹, Nathan Martin¹, Nim Tottenham¹

¹Columbia University

1-G-40 Exploring the effect of an unsafe school environment on white matter development in late childhood: Findings from regression and family fixed effects approaches

Spencer Dudley¹

¹University of Colorado at Boulder

1-G-42 Examining patterns of alpha EEG asymmetry and dimensions of early adversity: a preregistration

Summer Motton¹, Sarah Furlong¹, Madeline Robertson¹, Kinjal Patel¹, Amanda Mitchell¹, Dominique Martinez¹, Toni Howell¹, *Margaret Sheridan*¹

¹University of North Carolina, Chapel Hill

1-G-43 The association between maternal cortisol and neonatal amygdala volume is moderated by socioeconomic advantage

Max Herzberg¹, Regina Triplett¹, Sydney Kaplan¹, Dimitrios Alexopoulos¹, Dominique Meyer¹, Jyoti Arora¹, J. Philip Miller¹, Ronald McCarthy¹, Tara Smyser¹, Erik Herzog¹, Sarah England¹, Peinan Zhao¹, Deanna Barch¹, Cynthia Rogers¹, Barbara Warner¹, Christopher Smyser¹

¹Washington University, St. Louis

1-G-44 Typical variations in stressful life events relate to smaller hippocampal subfield volumes in children

Morgan Botdorf¹, Tracy Riggins¹

¹University of Maryland, College Park

1-G-45 Early caregiving quality may mitigate the impact of severe psychosocial deprivation on neural development in previously institutionalized children

Lucy Lurie¹, Katie McLaughlin², Meredith Gruhn¹, Kathryn Humphreys³, Kinjal Patel¹, Charles Zeanah⁴, Nathan Fox⁵, Charles Nelson⁶, Margaret Sheridan¹

¹University of North Carolina, Chapel Hill, ²Harvard University, ³Vanderbilt University, ⁴Tulane University, ⁵University of Maryland, College Park, ⁶Harvard School of Medicine

1-G-46 Modelling depressive symptom trajectories in obese pregnancies reveals complex heterogeneity in maternal inflammation, placental growth, dietary intake, infections and preterm birth: implications for fetal neurodevelopment.

Julie Nihouarn Sigurdardottir¹, Sara White², Angela Flynn², Annette Briley², Claire Singh², Mary Rutherford², Lucilla Poston²

¹King's College London, ²KCL

1-G-47 Examining within-person fluctuations in stressful life events, physical activity, and affect during adolescence

Elizabeth McNeilly¹, Jessica Jenness², John Flournoy³, Alejandro Valdivieso², Alexandra Rodman³, Constanza Vidal Bustamante³, Katie McLaughlin³

¹University of Oregon, ²University of Washington, ³Harvard University

1-G-48 Reduced resting state connectome similarity in parent-child dyads marked by maltreatment

Katharina Pittner¹, Carolyn Parkinson², Lisa van den Berg³, Renate Buisman³, Lenneke Alink³, Marinus van IJzendoorn⁴, Marieke Tollenaar³, Bernet Elzinga³, Marian Bermans-Kranenburg⁵

¹Charité - Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Univ, ²UCLA, ³Leiden University, ⁴Erasmus University Rotterdam, ⁵VU University Amsterdam

1-G-49 Hippocampal - prefrontal connectivity prior to COVID-19 pandemic predicts later anxiety in adolescents

Orma Ravindranath¹, Maria Perica¹, Finnegan Calabro¹, William Foran¹, Beatriz Luna¹

¹University of Pittsburgh

1-G-50 The effects of perceived early-life stress event severity and reaction severity on frontoamygdala circuitry and psychopathology

Jordan Foster¹, Emily Cohodes¹, Sarah McCauley¹, Jasmyne Pierre¹, Paola Odriozola¹, Jason Haberman¹, Sadie Zacharek¹, Sahana Kribakaran¹, H.R. Hodges¹, Camila Caballero¹, Dylan Gee¹ ¹Yale University

1-G-52 Neural Underpinnings of Heart Rate Defined Sustained Attention at 3-Months Predict Socio-Cognitive Outcomes at 9-Months

Annie Brandes-Aitken¹

¹New York University

H – Brain Structure

1-H-53 Individual variability in adolescent longitudinal development of cortical volume, thickness, surface area, and gyrification in two large European samples and influences of sex, height, pubertal status, and site

Nora Vetter¹, Lea Backhausen¹, Hervé Lemaître, Jonas Granzow¹, Juliane Froehner¹, Jean-Luc Martinot¹, Michael Smolka¹

¹Technische Universität Dresden

1-H-54 Longitudinal trajectories of white matter fiber development differ between children with and without ADHD

Ian Fuelscher¹, Christian Hyde¹, Nandita Vijayakumar¹, Phoebe Thomson², Emma Sciberras¹, Daryl Efron², Vicki Anderson², Philip Hazell³, Timothy Silk¹

¹Deakin University, ²Murdoch Children's Research Institute, ³University of Sydney

1-H-55 Cortical Thickness in Bilingual and Monolingual Children: Relationships to Language Use and Language Skill

My Nguyen¹, Juliana Ronderos¹, Arturo Hernandez¹, Kelly Vaughn²

¹University of Houston, ²University of Texas Health Science Center at Houston

1-H-56 Common child psychiatric symptoms relate to global but no to specific cortical morphology differences

Yingzhe Zhang¹, Scott Delaney¹, Henning Tiemeier¹ ¹Harvard T. H. Chan School of Public Health

1-H-57 Sex differences in gray matter development: an analysis of 116 regional trajectories

Madison Long¹, Jess Reynolds², Jing Zheng¹, Yuankai Huo³, Bennett Landman³, Karthik Ramadass³, Catherine Lebel¹

¹University of Calgary, ²Telethon Kids Institute, The University of Western Australia, ³Vanderbilt University

1-H-59 Specificity of structural markers of youth risk due to a parental history of psychopathology in the ABCD study

Matthew Mattoni¹, Helene Hopman², Adefunke Dadematthews³, Thomas Olino¹

¹Temple University, ²The Chinese University of Hong Kong, ³Auburn University

1-H-60 Examining the effects of maternal psychopathology on neonatal neurodevelopment and infant temperament

Jesse Barr¹, Cathi Propper¹, Amanda Wylie¹, Rebecca Stephens¹, Sarah Short¹ ¹University of North Carolina, Chapel Hill

1-H-61 The role of the extreme capsule and the uncinate fasciculus in reading and mental health

Kassondra Pedenko¹, Bryce Geeraert¹, Catherine Lebel¹ ¹University of Calgary

1-H-62 Myelin contributes to microstructural growth in human sensory cortex during early infancy

Vaidehi Natu¹, Mona Rosenke¹, Hua Wu¹, Francesca Querdasi¹, Holly Kular¹, Nancy Lopez-Alvarez¹, Mareike Grotheer², Shai Berman³, Aviv Mezer³, Kalanit Grill-Spector¹ ¹Stanford University, ²University of Marburg,

³Hebrew University of Jerusalem

I – Networks

1-I-63 Task-evoked functional brain organization and its relationship to behavior in children

Mackenzie Mitchell¹, Jessica Cohen¹ ¹University of North Carolina, Chapel Hill

1-I-64 Relation between intrinsic brain network organization and internalizing and externalizing behaviors in children with ADHD following methylphenidate administration

Nicholas Fogleman¹, Teague Henry², Cleanthis Michael¹, Jessica Cohen¹

¹University of North Carolina, Chapel Hill, ²University of Pittsburgh

1-I-65 Using Probabilistic Atlases of Functional Neural Networks in Adolescents to Improve Reliability of Group Brain-Behavior Associations

Robert Hermosillo¹, Lucille Moore², Adam Pines³, Eric Feczko¹, Greg Conan¹, Michael Mooney², Anita Randolph¹, Babatunde Adeyemo⁴, Eric Earl², Anders Perrone², Johnny Uriate-Lopez², Kathy Snider², Olivia Doyle², Michaela Cordova⁵, Ally Dworetsky⁴, Caterina Gratton⁶ Steven Petersen⁴, Theodore Satterthwaite³, Oscar Miranda-Dominguez¹, Damien Fair¹

¹University of Minnesota, ²Oregon Health & Science University, ³University of Pennsylvania, ⁴Washington University School of Medicine, ⁵San Diego State University, ⁶NorthWestern University

J – Mechanisms (hormones, neurotransmitters, physiology)

1-J-66 Prepubertal ovariectomy alters dorsomedial striatum indirect pathway neuron excitability and explore/exploit balance in female mice

Kristen Delevich¹, Chrisopher Hall², Linda Wilbrecht² ¹UC Berkeley, Washington State University, ²UC Berkeley

1-J-67 Intra- and inter-individual effects of pubertal hormones on perceived pubertal maturation: Baseline to Year 1 of the ABCD Study

Megan Patterson¹, Kristina Uban², Megan Herting³, John Hewitt⁴, Marie Banich⁴

¹University of Colorado Denver, ²University of California, Irvine, ³University of Southern California, ⁴University of Colorado, Boulder

1-J-68 fMRI-derived measures of brain tissue iron as an indirect marker of striatal dopamine for neurodevelopmental research

Brenden Tervo-Clemmens¹, Bart Larsen², Ashley Parr¹, William Foran¹, Finnegan Calabro¹, Beatriz Luna¹ ¹University of Pittsburgh, ²University of Pennsylvania

1-J-69 Touch for life

Francis McGlone¹ ¹Liverpool John Moores University

K – Methods

1-K-71 Gold Standard Practices in Infant and Toddler MRI Acquisition

Cassandra Hendrix¹, Lanxin Ji², Moriah Thomason¹ ¹New York University, ²Beijing Tiantan Hospital, Capital Medical University

1-K-72 Characterizing multimodal phenotypes in youth with Klinefelter syndrome

Elizabeth Levitis¹, Ethan Whitman¹, Siyuan Liu¹, Allysa Warling¹, Erin Torres¹, Liv Clasen¹, François Lalonde¹, Joelle Sarlls¹, Armin Raznahan¹, Daniel Alexander² ¹National Institute of Mental Health, ²University College London

1-K-73 Impact of significant motion scrubbing on dynamic functional connectivity: validation in an adult resting-state cohort

Lanxin Ji¹, Cassandra Hendrix², Moriah Thomason² ¹Beijing Tiantan Hospital, Capital Medical University, ²New York University

L – Clinical Populations

1-L-74 Interrogating multivariate patterns of functional connectivity related to childhood and adulthood Tourette syndrome

Matthew Feigelis¹, Ashley Nielsen², Deanna Greene¹ ¹UC San Diego, ²Washington University School of Medicine

1-L-75 Using machine learning to predict intelligence in atypically developing children and adolescents

Brian Pho¹, Yalda Mohsenzadeh¹, Bobby Stojanoski¹ ¹Western University

1-L-76 Executive functioning, negative self-evaluation, and network coherence in depressed adolescents

Jordan Garcia¹, Johanna Walker¹, Anthony Gifuni¹, Ian Gotlib¹, Tiffany Ho^2

¹Stanford University, ²University of California, San Francisco

1-L-77 Anxiety moderates attention to rapidly presented social stimuli in adolescent females

Carolyn Lasch¹, Jed Elison¹, Kathryn Cullen¹, Bonnie Klimes-Dougan¹ ¹University of MN, Twin Cities

1-L-78 Self-concept in adolescent males with autism spectrum disorder

Renske van der Cruijsen¹, Sander Begeer², Eveline Crone¹ ¹Erasmus University Rotterdam, ²Vrije Universiteit Amsterdam

1-L-79 High genetic risk for bipolar disorder is associated with localised dysconnectivity during normal structural connectome development

Alistair Perry¹, Gloria Roberts², Megan Campbell³, Kate Ridgway², Vivian Leung², Rhoshel Lenroot⁴, Philip Mitchell², Michael Breakspear³

¹University of Cambridge, ²University of New South Wales, ³University of Newcastle, ⁴University of New Mexico

1-L-80 Developmental Trajectories of Resting-State Networks and Rumination

Katie Bessette¹, Melinda Westlund-Schreiner², Alina Dillahunt², Vincent Koppelmans², Robert Welsh², Heide Klumpp³, Jonathan Stange⁴, Katie Burkhouse³, Scott Langenecker²

¹University of Illinois at Chicago / University of Utah, ²University of Utah, ³University of Illinois at Chicago, ⁴University of Southern California

1-L-81 Acute alterations and longitudinal changes in the brain of young children after a mild traumatic brain injury: design of the EULE pilot study

Fanny Degeilh¹, Michaela Bonfert¹, Florian Heinen¹, Miriam Beauchamp¹, Christian Tamnes¹, Inga Koerte¹

¹Ludwig Maximilian University of Munich

N – Language

1-N-82 Fluent reading is associated with increased functional connectivity within ventral and dorsal attention networks in children with dyslexia

Nikolay Taran¹, Rola Farah¹, Tzipi Horowitz-Kraus¹ ¹Technion Israel Institute of Technology

O – Brain Function

1-O-83 Using task-based neural fingerprinting to predict canonical network engagement during development

Fengdan Ye¹, Robert Kohler¹, Bianca Serio¹, Sarah Lichenstein¹, Sarah Yip¹

¹Yale University

1-O-84 Developmental trajectories of myo-inositol across infancy via in vivo magnetic resonance spectroscopy

Marisa Spann¹, Martin Gajdosik², Karl Landheer², Dustin Scheinost², Christoph Juchem¹ ¹Columbia University, ²Yale University

1-O-85 Associations between age and brain synchrony during passive viewing in early childhood

Ryann Tansey¹, Kirk Graff¹, Christiane Rohr¹, Dennis Dimond¹, Amanda Ip¹, Shelly Yin¹, Deborah Dewey¹, Signe Bray¹ ¹University of Calgary

P – Brain Connectivity

1-P-86 Physical fitness, hippocampal functional connectivity and academic performance in children with overweight/obesity: the ActiveBrains project

Irene Esteban-Cornejo¹, Chelsea M. Stillman², Maria Rodriguez-Ayllon³, Arthur F. Kramer⁴, Charles H. Hillman⁴, Andrés Catena¹, Kirk I. Erickson², Francisco B. Ortega¹

¹University of Granada, ²University of Pittsburgh, ³Erasmus MC, ⁴Northeastern University

1-P-87 Identifying differences in functional organization of left- and right-handed individuals using functional connectivity

Link Tejavibulya¹, Hannah Peterson¹, Siyuan Gao¹, Stephanie Noble¹, Max Rolison², Dustin Scheinost¹ ¹Yale University, ²Yale School of Medicine

Q – Other

1-Q-88 Relation between Irritability and Rejection-Elicited Aggression Across Development

Athena Vafiadis¹, Megan Quarmley¹, Johanna Jarcho¹ ¹Temple University

Poster Session 2

Monday, September 20, 2021 9:30am – 11:00am PST

A – Executive functioning

2-A-89 Training cognitive control: Brain-Behaviour plasticity in childhood

Keertana Ganesan¹, Roser Cañigueral¹, Abigail Thompson¹, Claire Smid¹, Vanessa Puetz¹, Nikolaus Steinbeis¹

¹University College London

2-A-90 The long-term effects of social isolation during early puberty on the development of executive functioning

Katie Paige¹, Craig Colder¹ ¹SUNY Buffalo

2-A-91 Associations between neurocognitive measures, prefrontal cortical thickness and ADHD symptoms within the ABCD Study®

Hope Doyle¹, Kelly Cosgrove¹, Florence Breslin¹, Amanda Morris¹, Martin Paulus¹, Robin Aupperle¹

¹Laureate Institute for Brain Research

2-A-92 Now it's your turn!: Eye blink rate modulated by interaction of wait times, inhibitory control, and internalizing behaviors in a Jenga-like inhibitory control task

Kelley Gunther¹, Xiaoxue Fu², Leigha MacNeill³, Morgan Jones¹, Briana Ermanni⁴, Koraly Pérez-Edgar¹

¹The Pennsylvania State University, ²University of South Carolina, ³Northwestern University Feinberg School of Medicine, ⁴Virginia Tech

2-A-93 Cognitive outcome is related to functional thalamo-cortical connectivity after pediatric stroke Leonie Steiner¹

¹University of Bern

2-A-94 Testing the comparative predictive validity of neural structure versus suicidal ideation history for prediction of Suicide Stroop Task performance

Kinjal Patel¹, Olivia Pollak¹, Margaret Sheridan¹, Matteo Giletta², Paul Hastings³, Matthew Nock⁴, Karen Rudolph⁵, George Slavich⁶, Leah Somerville⁴, Mitchell Prinstein¹, Adam Miller¹

¹University of North Carolina, Chapel Hill, ²Ghent University, ³University of California, Davis, ⁴Harvard University, ⁵University of Illinois, Urbana-Champaign, ⁶University of California, Los Angeles

2-A-95 Early onset consumption of coca paste associated with executive-attention vulnerability markers linked to caudate-frontal structural and functional abnormalities

Laura Alethia de la Fuente¹, Sofia Schurmann Vignaga², Pilar Prado², Rosario Figueras², Lucia Lizaso², Facundo Manes², Marcelo Cetkovich², Enzo Tagliazucchi³, Teresa de la FuenteTorralva² ¹IFIBA/INCyT, ²INCyT, ³IFIBA

2-A-97 A test of implicit emotion regulation in children:

a modified emotional go/nogo fmri task Stepheni Uh¹, Roma Siugzdaite¹, Alexander Anwyl-Irvine¹, Edwin Dalmaijer¹, Giacomo Bignardi¹, Tess Smith¹, Duncan Astle¹

¹Cambridge University

B – Socioemotional processing

2-B-14 Feedback for friends: neural processing of performance feedback in the social context of friends and unfamiliar peers across adolescence

Iris Koele¹, Jorien Van Hoorn¹, Ellen De Bruijn¹, Berna Güroğlu¹ ¹Leiden University

2-B-98 Aggressive responses following social evaluation and the underlying motives in middle childhood: an fMRI replication design

Simone Dobbelaar¹, Michelle Achterberg², Lina van Drunen¹, Anna van Duijvenvoorde¹, Marinus van IJzendoorn², Eveline Crone²

¹Leiden University, ²Erasmus University Rotterdam

2-B-99 Neural sensitivity to social status predicts changes in risk-taking and prosocial behavior in adolescence

Jimmy Capella¹, Nathan Jorgensen¹, Seh-Joo Kwon¹, Maria Maza¹, Mitchell Prinstein¹, Kristen Lindquist¹, Eva Telzer¹ ¹University of North Carolina, Chapel Hill

2-B-100 Longitudinal association between children's neural response to facial affect and anxiety symptoms

Dana Glenn¹, Jordan Mullins¹, Kalina Michalska¹ ¹University of California, Riverside

2-B-101 Whole Brain Longitudinal Changes in Adolescent Social Reward and Punishment Processing

Jessica Flannery¹, Nathan Jorgensen¹, Caitlin Turpyn¹, Seh-Joo Kwon¹, Mitchell Prinstein¹, Kristen Lindquist¹, Eva Telzer¹

¹University of North Carolina, Chapel Hill

2-B-102 Adolescents Display Distinct Self-Referential Biases in Memory and Perspective Taking

Maximilian Scheuplein¹, Gabriele Chierchia², Saz Ahmed², Lucy Foulkes², Cait Griffin², Sarah-Jayne Blakemore³ ¹Leiden University, ²University College London, ³University of Cambridge

2-B-103 Children with a history of maltreatment show a rumination-like spontaneous thoughts network potentially highlighting increased depression risk

Ferdinand Hoffmann¹, Roman Linz², Claudia Buss¹, Claudia Calvano¹, Lea Bentz¹, Jan Warncke¹, Sibylle Winter¹, Sonja Entringer¹, Christine Heim¹

¹Charité Universitätsmedizin, Berlin, ²Max Planck Institute for Human Cognitive and Brain Sciences

2-B-105 Cortical Response to Mother and Stranger Emotional Voices in Newborn Infants

Genevieve Patterson¹, Shannon Powers¹, Xu Han², Alexander Dufford³, Tom Yeh², Pilyoung Kim¹

¹University of Denver, ²University of Colorado Boulder, ³Yale University

2-B-106 Neural correlates of emotional state flexibility: A developmental perspective

Stephanie Novotny¹, Evan Burdette¹, Beatriz Yepes¹, Jennifer Britton¹

¹University of Miami

2-B-107 The structural connectome and internalising and externalising symptoms in individuals born very preterm and full-term

Courtney Gilchrist¹, Deanne Thompson¹, Claire Kelly¹, Christopher Adamson¹, Karli Treyvaud², Lillian Matthews³, Thijs Dhollander¹, Lex Doyle¹, Terrie Inder⁴, Mary Tolcos⁵, Angela Cumberland⁵, Peter Anderson³

¹Murdoch Children's Research Institute, ²La Trobe University, ³Monash University, ⁴Harvard Medical School, ⁵RMIT University

2-B-108 Proposed Study Design & Analysis to Validate a Novel, Social Negative Reinforcement Learning Task for Use in Adolescence

Logan Cummings¹, Nathan Sollenberger¹, Josefina Freitag¹, Aaron Mattfeld¹, Dana McMakin¹ ¹Florida International University

2-B-109 Early Childhood Emotion Regulation Strategy Generation and Physiological, Neurological, and Psychopathological Correlates

Zachary Bivins¹, Adam Grabell¹ ¹University of Massachusetts-Amherst

2-B-110 Neural response to peer feedback moderates effects of social stress on depression symptoms among adolescents

David Pagliaccio¹, Rahil Kamath¹, Poornima Kumar², Diego Pizzagalli², Randy Auerbach¹ ¹New York State Psychiatric Institute, ²Harvard Medical School

2-B-111 Concurrent and longitudinal associations between early childhood reward responsivity and irritability

Nicolas Camacho¹, Armen Bagdasarov¹, Amanda Caress¹, Yu Sun Chung¹, Michael Gaffrey¹ ¹Duke University

2-B-112 Empathy and resting-state functional connectivity in children

Katherine Bray¹, Elena Pozzi¹, Sarah Whittle¹ ¹University of Melbourne

C – Learning

2-C-113 The influence of encoding strategy on memory integration across development

Zahra Abolghasem¹, Margaret Schlichting¹ ¹University of Toronto

2-C-114 Trauma Exposure and Safety Cue Learning in Development

Sahana Kribakaran¹, Stephanie DeCross², Paola Odriozola¹, Emily Cohodes¹, Jason Haberman¹, Katie McLaughlin², Dylan Gee¹

¹Yale University, ²Harvard University

2-C-115 Unsupervised neuro-cognitive process models reveal individual differences in development of arithmetic problem solving

Percy Mistry¹, Vinod Menon¹

¹Stanford University

2-C-116 Hippocampal and dorsolateral striatal memory systems differentially contribute to probabilistic learning in middle childhood

Johannes Falck¹, Laurel Raffington², Christine Heim³, Yee Lee Shing¹

¹Goethe University, Frankfurt, ²University of Texas, Austin, ³Charité Universitätsmedizin, Berlin

D – Rewards/Motivation

2-D-117 Failure mindset predicts error-related negativity during a go/no-go task in young adults

Salvador Vazquez¹, Amy Rapp¹, Patricia Tan¹, Jennie Grammer¹ ¹UCLA

2-D-118 Reward-motivated memory processes and their underlying neural mechanisms change with age

Alexandra Cohen¹, Morgan Glover¹, Xinxu Shen¹, Kristen Avallone¹, Camille Phaneuf¹, Lila Davachi², Catherine Hartley¹

¹New York University, ²Columbia University

2-D-119 Longitudinal changes of reward anticipation activation in adolescent girls: evidence for accelerated neurodevelopment in depression

David Baranger¹, Morgan Lindenmuth¹, Amanda Guyer², Kate Keenan³, Alison Hipwell¹, Erika Forbes¹

¹University of Pittsburgh, ²University of California, Davis, ³University of Chicago

2-D-120 Behavioral and brain differences between younger and older adolescents Performing a delay discounting task

Yael Cycowicz¹, Diana Rodriguez-Moreno², Xiaoxiao Sun¹, Kelsang Bista², Lawrence Amsel¹, Christina Hoven¹

¹Columbia University / New York State Psychiatric Institute, ²New York State Psychiatric Institute

2-D-121 Unique neural profiles underlying social motivation and psychopathology in adolescent girls

Andrea Pelletier-Baldelli¹, Margaret Sheridan¹, Kinjal Patel¹, Matteo Giletta², Paul Hastings³, Matthew Nock⁴, Karen Rudolph⁵, George Slavich⁶, Leah Somerville⁴, Mitchell Prinstein¹, Adam Miller¹

¹University of North Carolina, Chapel Hill, ²Ghent University, ³University of California, Davis, ⁴Harvard University, ⁵University of Illinois, Urbana-Champaign, ⁶University of California, Los Angeles

2-D-122 Grenading the gorilla: Self-oriented contributions to safety computations

Sarah Tashjian¹, Dean Mobbs¹ ¹California Institute of Technology

E – Education

2-E-123 Functional connectivity of cognitive control and learning systems in English learners

Tehila Nugiel¹, Damion Demeter¹, Mackenzie Mitchell², AnnaCarolina Garza¹, Jenifer Juranek³, Jessica Church¹

¹University of Texas, Austin, ²University of North Carolina, Chapel Hill, ³University of Texas, Houston

F – Memory

2-F-124 Effects of prefrontal cortex maturation on verbal memory development

Clara Ekerdt¹, Nadia Klijn¹, Willeke M. Menks², Guillén Fernández¹

¹Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Centre, ²Donders Institute for Brain, Cognition and Behaviour, Radboud University

2-F-125 Linking changes in excitatory and inhibitory balance through adolescence with working memory

Maria Perica¹, Finnegan Calabro¹, Will Foran¹, Victor Yushmanov¹, Hoby Hetherington¹, Beatriz Luna¹ ¹University of Pittsburgh

2-F-126 Examining prefrontal contributions to successful memory formation in 5- to 7-year-old children

Kelsey Canada², Lingfei Tang², Christina Lee², Roya Homayouni², James Wairagu², Noa Ofen² ¹University of Maryland, ²Wayne State University

G – Environment (Stress, SES)

2-G-127 From Poverty to Cognition: Examining the Relative Contributions of Environmental, Neural and Genetics Influences

Nourhan Elsayed¹, Sarah Paul¹, Alexander Hatoum¹, Deanna Barch¹

¹Washington University, St. Louis

2-G-128 Prospective association of maternal psychosocial stress during pregnancy with newborn hippocampal volume and its implications for infant social-emotional development

Saara Nolvi¹, Nora Moog², Theresa Kleih³, Martin Styner⁴, John Gilmore⁴, Jerod Rasmussen⁵, Christine Heim², Sonja Entringer², Pathik Wadhwa⁵, Claudia Buss²

¹University of Turku, ²Charité Universitätsmedizin, Berlin, ³Charité Universitätsmedizin Berlin, ⁴University of North Carolina, Chapel Hill, ⁵University of California, Irvine

2-G-129 Childhood adversity minimally impacts fronto-subcortical brain networks and stress-sensitivity in YOUth

Elizabeth Buimer¹, Rachel Brouwer¹, Jacobine Buizer-Voskamp², Rene Mandl¹, Pascal Pas¹, Hugo Schnack¹, Coosje Veldkamp², Anouk Vroegindeweij¹, Hilleke Hulshoff Pol¹

¹Utrecht Brain Center, UMC Utrecht, Utrecht University, ²Utrecht University

2-G-130 Parsing heterogeneity in associations between dimensions of childhood stress exposure and white matter microstructure

Lucinda Sisk¹, Audrey Huang¹, Emily Cohodes¹, Sarah McCauley¹, Jasmyne Pierre¹, Paola Odriozola¹, Jason Haberman¹, Sahana Kribakaran¹, Sadie Zacharek², Hopewell Hodges³, Camila Caballero¹, Dylan Gee¹ ¹Yale University, ²MIT, ³University of Minnesota

2-G-131 The effects of a 20-week exercise program on blood-circulating biomarkers related to brain health in children with overweight or obesity.

María Rodriguez-Ayllon¹, Abel Plaza-Florido², Andrea Mendez-Gutierrez², Signe Altmäe², Francisco B. Ortega², Irene Esteban-Cornejo²

¹Erasmus MC, ²University of Granada

2-G-132 Demographic and mental and physical health differences between recommended and nonrecommended samples for resting-state fMRI analyses in the ABCD Study

Kelly Cosgrove¹, Timothy McDermott¹, Matthew Mosconi², Florence Breslin¹, Martin Paulus¹, Amanda Morris¹, Robin Aupperle¹

¹Laureate Institute for Brain Research, ²University of Kansas

2-G-133 Pre-pandemic mental health matters: an examination of youth well-being during early stages of the COVID-19 pandemic

Blaire Porter¹, Ian Douglas¹, Melissa Aristizabal¹, Tyler Larguinho¹, Jessica Church¹

¹University of Texas, Austin

2-G-134 Associations between neighborhood disadvantage, resting-state functional connectivity, and behavior in the Adolescent Brain Cognitive Development (ABCD) Study: Moderating role of positive family and school environments

Divyangana Rakesh¹, Caio Seguin¹, Andrew Zalesky¹, Vanessa Cropley¹, Sarah Whittle¹

¹University of Melbourne

2-G-135 A Latent Typological Approach to the Measurement of Adversity and Differential Neural Correlates

Landry Huffman¹, Rachel Brown¹, Cory Carvalho¹, Assaf Oshri¹ ¹University of Georgia

2-G-136 Family Material Hardship, Youth Future Orientation, and Perseverance: The Protective Role of Resting-State Functional Connectivity

Zehua Cui¹, Linhao Zhang¹, Cory Carvalho¹, Landry Huffman¹, Assaf Oshri¹

¹University of Georgia

2-G-137 Critical windows of metal mixture exposure on functional connectivity in adolescents

Elza Rechtman¹

¹Icahn School of Medicine at Mount Sina**i**

2-G-138 Violent crime exposure during pregnancy alters white matter microstructure in neonates

Rebecca Brady¹, Christopher Smyser¹, Barbara Warner¹, Deanna Barch¹, Joan Luby¹, Cynthia Rogers¹ ¹Washington University, St. Louis

2-G-139 The associations and interactions between prenatal alcohol exposure and prenatal tobacco exposure on adolescent brain structure in the PASS cohort

Andrew Marshall¹, Stefanie Bodison², Kristina Uban³, Deborah Jonker⁴, Weslin Charles⁴, Shaomin Zhao¹, Shana Adise¹, Babette Steigelmann⁵, Eric Kan¹, Shantanu Joshi⁶, Katherine Narr⁶, Kirsty Donald⁴, Dan Stein⁴, Elizabeth Sowell¹

¹Children's Hospital of Los Angeles, ²University of Florida,
³University of California, Irvine, ⁴University of Cape Town,
⁵Maastricht University, ⁶University of California, Los Angeles

2-G-140 Networks of adversity in childhood and adolescence and their relationship to adult mental health

Ayla Pollmann¹, Jessica Fritz, Delia Fuhrmann¹

¹Kings College London

2-G-141 Neural markers of self-regulation attenuate links between institutional caregiving and sensory over-responsivity

Adriana Méndez Leal¹, João Guassi Moreira¹, Yael Waizman¹, Natalie Saragosa-Harris¹, Emilia Ninova¹, Jennifer Silvers¹ ¹UCLA

2-G-142 Socio-economic status and the wiring economy of the developing brain

Roma Siugzdaite¹, Danyal Akarca¹, Amy Johnson¹, Edwin Dalmaijer¹, Alexander Irvine¹, Stepheni Uh¹, Tess Smith¹, Giacomo Bignardi¹, Duncan E. Astle¹

¹Cambridge University

2-G-143 Prenatal and postnatal maternal depressive symptoms and longitudinal changes in limbic structure in young children.

Claire Donnici¹, Jess Reynolds², Madison Long¹, Deborah Dewey¹, Nicole Letourneau¹, Gerald Giesbrecht¹, Bennett Landman³, Yuankai Huo³, Catherine Lebel¹ ¹University of Calgary, ²University of Western Australia, ³Vanderbilt University

H – Brain Structure

2-H-144 Development of chronotype in adolescence: Implications for brain development and psychopathology

Rebecca Cooper¹, Maria Di Biase¹, Sarah Whittle¹, Vanessa Cropley¹

¹University of Melbourne

2-H-145 Hippocampal structural covariance differs between children and adolescents: a multi-cohort study

Anna Plachti¹, Robert D. Latzman², Somayeh Maleki Balajoo³, Felix Hoffstaedter³, Kathrine Skak Madsen¹, William Baare¹, Hartwig R. Siebner¹, Simon B. Eickhoff⁴, Sarah Genon⁴

¹Danish Research Centre for Magnetic Resonance, Centre for Functional and Diagnostic Imaging and Rese, ²Department of Psychology, Georgia State University, Atlanta, GA, USA, ³Institute of Neuroscience and Medicine (INM-7), Research Centre Juelich, Juelich

2-H-146 Associations between amygdala structure and anxiety symptoms in children with and without autism spectrum disorder

Heather Yarger¹, Christine Wu Nordahl², Elizabeth Redcay¹ ¹University of Maryland, ²UC Davis Health

2-H-147 Characterizing long-term effects of preterm birth on brain structure in 9- to 10-year-old children

Niloy Nath¹, Winnica Beltrano¹, Logan Haynes¹, Signe Bray¹ ¹University of Calgary

2-H-148 Effects of bilingual language experience on structural language networks in the pre-adolescent brain

Lauren Wagner¹, Leanna Hernandez¹, Susan Bookheimer¹, Mirella Dapretto¹

¹University of California, Los Angeles

2-H-149 Relationships among Choline, white matter structure and reading in children

Meaghan Perdue¹, Roeland Hancock¹, Fumiko Hoeft¹, Kenneth Pugh², Nicole Landi¹

¹University of Connecticut, ²Haskins Laboratories

2-H-150 The role of neurobiology in the association between pubertal timing and depression risk in early adolescence: A registered report study design

Niamh MacSweeney¹, Xueyi Shen¹, Stella Chan², Breda Cullen³, Rebecca Reynolds¹, Alex Kwong¹, Stephen Lawrie¹, Liana Romaniuk¹, Heather Whalley¹

¹University of Edinburgh, ²University of Reading, ³University of Glasgow

2-H-151 Individual estradiol variability, internalizing symptoms, and the mediating role of brain structure in female adolescents

Isabel Zwaan¹, Sarah Whittle¹, Kim Felmingham¹ ¹University of Melbourne

I – Networks

2-I-152 Prediction of Early Adolescent Functional Connectivity Development based on Preadolescent Structural Connectivity

Sin Kim¹, Jaeseung Jeong¹ ¹Brain Dynamics Lab

2-I-153 Controllability of structural brain networks and the waxing and waning of negative affect in daily life

Amanda McGowan¹, Linden Parkes¹, Xiaosong He¹, Ovidia Stanoi², Yoona Kang¹, Silicia Lomax¹, Peter Mucha³, Kevin Ochsner², Emily Falk¹, Danielle Bassett¹, David Lydon-Staley¹

¹University of Pennsylvania, ²Columbia University, ³University of North Carolina

K – Methods

2-K-155 (Un)common space in infant neuroimaging studies: a systematic review of infant templates

C. Alice Hahn¹, Silvia Gini¹, Alexis Alfano², Hannah Peterson¹, Saloni Mehta¹, Alexander Dufford¹, Dustin Scheinost¹ ¹Yale University, ²Quinnipiac University

2-K-156 Correspondence of simultaneously collected fMRI and full-head fNIRS signals across language and visual paradigms

Sara Sanchez-Alonso¹, Rebecca Canale¹, Richard Aslin¹ ¹Haskins Laboratories

L – Clinical Populations

2-L-157 Validating the Juvenile Macaque Social Responsiveness Scale: Reverse translation of the SRS for rapid assessment of behavioral variability in developing rhesus macaques (Macaca mulatta)

Natalie Pilgeram¹, Zsofia Kovacs-Balint², Trina Jonesteller², Jabari Wesson², Mar Sanchez³, Jocelyne Bachevalier³

¹Emory University, ²Yerkes National Primate Research Center, ³Yerkes National Primate Research Center, Emory University

2-L-158 Pediatric Anxiety during the COVID-19 Pandemic: The Role of Family-Level Factors

Elizabeth Kitt¹, Emily Cohodes¹, Sarah McCauley¹, Grace Hommel¹, Cristina Nardini¹, Sadie Zacharek¹, Alyssa Martino¹, Tess Anderson¹, Hannah Spencer¹, Paola Odriozola¹, Georgia Spurrier¹, Carla Marin¹, Wendy Silverman¹, Eli Lebowitz¹, Dylan Gee¹

¹Yale University

2-L-159 Altered neural activity in response to native vs. non-native language in 9-month-old infants at high and low familial risk for ASD

Rebecca Altshuler¹, Nana Okada¹, Lauren Wagner¹, Janelle Liu², Tawny Tsang¹, Kaitlin Cummings¹, Jiwon Jung¹, Genevieve Patterson³, Susan Bookheimer¹, Shafali Jeste¹, Mirella Dapretto¹

¹University of California, Los Angeles, ²Cedars-Sinai Medical Center, ³University of Denver

2-L-160 White and grey matter microstructural alterations and increased free-water content 13 years after very preterm birth

Claire Kelly¹, Thijs Dhollander¹, Ian Harding², Wasim Khan², Richard Beare¹, Jeanie Cheong¹, Lex Doyle¹, Marc Seal¹, Deanne Thompson¹, Peter Anderson²

¹Murdoch Children's Research Institute, ²Monash University

2-L-161 Predicting Depression from Self-Evaluation in Adolescents: A MVPA Machine-Learning Approach

Victoria Guazzelli Williamson¹, Samantha Chavez¹, Danielle Cosme², Robert Chavez¹, Jennifer Pfeifer¹

¹University of Oregon, ²University of Pennsylvania

2-L-162 Frontolimbic network topology associated with risk and presence of depression in adolescence: A study using a composite risk stratification score in Brazil

Leehyun Yoon¹, Fernanda Rohrsetzer², Lucas Battel³, Mauricio Anés⁴, Pedro Manfro², Luis Rohde⁴, Anna Viduani², Zuzanna Zajkowska⁵, Valeria Mondelli⁵, Christian Kieling⁴, Johnna Swartz⁶

¹Center for Mind and Brain, University of California, Davis, ²Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, ³Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, ⁴Hospital de Clínicas de Porto Alegre

2-L-163 Subclinical anxiety modulates neural and behavioral response to safety decisions in early adolescence

Amanda Baker¹, Namita Tanya Padgaonkar¹, Tara Peris¹, Adriana Galván¹

¹University of California, Los Angeles

M – Attention

2-M-166 Brain functional topography in infancy is associated with the early development of attention control

Sebastián Moyano¹, Josué Rico-Picó¹, Ángela Conejero¹, Ángela Hoyo¹, María de los Ángeles Ballesteros-Duperón¹, M. M. Rosario Rueda¹

¹University of Granada

N – Language

2-N-167 Detection of Language Lateralization using High-Density EEG

Kerry Nix¹, Beattie Goad¹, Fiona Baumer¹ ¹Stanford University School of Medicine

2-N-168 Atypical functional connectivity patterns of the left fusiform gyrus in infants at familial risk for developmental dyslexia

Xi Yu¹, Silvina Ferradal², Danielle Sliva³, Jade Dunstan⁴, Clarisa Carruthers⁴, Joseph Sanfilippo⁴, Jennifer Zuk⁵, Yangming Ou⁴, Lilla Zöllei⁶, Borjan Gagoski⁴, P. Ellen Grant⁴, Nadine Gaab⁷

¹Beijing Normal University, ²Indiana University, ³Brown University, ⁴Boston Children's Hospital, ⁵Boston University, ⁶Massachusetts General Hospital, ⁷Harvard University

O – Brain Function

2-O-169 Alcohol and marijuana use are associated with altered brain response during processing of negatively valanced emotional stimuli in adolescents

Amanda Del Giacco¹, Scott Jones¹, Bonnie Nagel¹ ¹Oregon Health and Science University

2-O-170 Low Infant Functional Connectome-based Identification Accuracy Across the First Year of Life

Alexander Dufford¹, Stephanie Noble¹, Siyuan Gao¹, Dustin Scheinost¹

¹Yale University

P – Brain Connectivity

2-P-171 Sex differences in advanced measures of white matter microstructure among 9- to 10-year-old children in the ABCD study

Katherine Lawrence¹, Emily Laltoo¹, James McCracken², Paul Thompson¹

¹University of Southern California, ²University of California, Los Angeles

2-P-172 Long lasting regional and edgewise functional connectivity alterations in adults born very preterm

Laila Hadaya¹, Frantisek Vasa², Serena Counsell¹, A David Edwards¹, Sukhwinder Shergill³, Robert Leech², Chiara Nosarti¹

¹Centre for the Developing Brain, Department of Perinatal Imaging and Health, Faculty of Life Science, ²Department of Neuroimaging, Institute of Psychiatry Psychology and Neuroscience, King's College London, ³Psychosis Studies, Institute of Psychiatry Psych

Q – Other

2-Q-173 ABCD-ReproNim: A free online course providing training for reproducible analyses of Adolescent Brain Cognitive Development (ABCD) Study data

Jessica Bartley¹, James Kent², Elizabeth Levitis³, Dustin Moraczewski³, Kristina Rapuano⁴, Adam Richie-Halford⁵, Taylor Salo¹, Jean-Baptiste Poline⁶, Satrajit Ghosh⁷, David Kennedy⁸, Angela Laird¹

 ¹Florida International University, ²University of Texas,
³National Institute of Mental Health, ⁴Yale University,
⁵University of Washington, ⁶McGill University, ⁷Massachusetts Institute of Technology, ⁸University of Massachusetts Medical School

Poster Session 3

Tuesday, September 21, 2021 6:30am – 8:00am PST

A – Executive functioning

3-A-174 Socioeconomic Context, Polygenic Scores for Educational Attainment, and Neurocognitive Skills in Children and Adolescents

Jordan Strack¹, Hailee Hurtado¹, Budhachandra Khundrakpam², Uku Vainik², Michael Thomas¹, Emily Merz¹

¹Colorado State University, ²University of Tartu

3-A-175 Can cognitive effort predict who benefits most from distinct types of inhibitory control practice?

Diego Placido¹, Hilary Traut², Yuko Munakata¹ ¹University of California, Davis, ²University of Colorado, Boulder

3-A-176 Understanding Patterns of Heterogeneity in Executive Functioning during Adolescence: Evidence from Nationally Representative Data

Natasha Chaku¹, Lindsay Till Hoyt¹, Kelly Barry² ¹University of Michigan, ²University of Pittsburg

3-A-177 Neural correlates underlying successful response inhibition following methylphenidate administration in medication-naive children with attention-deficit hyperactivity disorder

Arianna Cascone¹, Cleanthis Michael¹, Mackenzie Mitchell¹, Teague Henry², Margaret Sheridan¹, Jessica Cohen¹ ¹University of North Carolina, Chapel Hill, ²University of Virginia

3-A-178 Age differences between children and adults in the neural mechanisms of sustained and transient control during task switching

Sina Schwarze¹, Corinna Laube¹, Neda Khosravani¹, Silvia Bunge², Ulman Lindenberger¹, Yana Fandakova¹

¹Max Planck Institute for Human Development, ²University of California, Berkeley

3-A-179 Patterns of Brain Connectivity Associated with Executive Function are Globally Distributed among Higher Order Heteromodal Areas

Gracie Grimsrud¹, Nora Byington¹, Michael Mooney², Michaela Cordova², Olivia Doyle², Robert Hermosillo¹, Eric Earl², Anders Perrone², Lucille Moore², Alice Graham², Joel Nigg², Wesley Thompson³, Eric Feczko¹, Oscar Miranda-Dominguez¹, Damien Fair¹

¹University of Minnesota, ²Oregon Health & Science University, ³University of California, San Diego

3-A-180 Segregation of task-positive and negative functional neural networks uniquely relates to children's executive control in middle childhood

Caron Clark¹, Amelia Miramonti², Donna Chen² ¹UNL, ²University of Nebraska-Lincoln

3-A-181 Joint effects of functional connectivity and executive function on autistic traits in a cohort of very preterm and full-term 9- to 10-year-old children

Joseph Dust¹, Rachel Lean¹, Jeanette Kenley¹, Peppar Cyr¹, Christopher Smyser¹, Cynthia Rogers¹ ¹Washington University, St. Louis

B – Socioemotional processing

3-B-182 Longitudinal behavioral and neural trajectories of risk taking for parent and peer across adolescence

Seh-Joo Kwon¹, Jessica Flannery¹, Caitlin Turpyn¹, Mitchell Prinstein¹, Kristen Lindquist¹, Eva Telzer¹ ¹University of North Carolina, Chapel Hill

3-B-183 Shifting qualities of negative affective experience through adolescence: Associations with functional outcomes

Katherine Grisanzio¹, Patrick Mair¹, John Flournoy¹, HCP-D Consortium, Leah Somerville¹ ¹Harvard University

3-B-184 Neural sensitivity to social context moderates the association between daily social media use and affective states

Maria Maza¹, Jimmy Capella¹, Seh-Joo Kwon¹, Nathan Jorgensen¹, Kristen Lindquist¹, Mitchell Prinstein¹, Eva Telzer¹

¹University of North Carolina, Chapel Hill

3-B-185 EEG Delta Activity Response to Peer Feedback in Young Children is associated with Internalizing Problems

Marisa Lytle¹, Alicia Vallorani¹, Santiago Morales¹, Koraly Pérez-Edgar¹

¹The Pennsylvania State University

3-B-186 Effects of household and neighborhood socioeconomic disadvantages on resting-state frontoamygdala connectivity and internalizing symptoms in youth

Lucinda Sisk¹, Ka I Ip¹, Kristina Rapuano¹, Monica Rosenberg², Abigail Greene¹, Corey Horien¹, Dustin Scheinost¹, Todd Constable¹, BJ Casey¹, Arielle Baskin-Sommers¹, Dylan Gee¹ ¹Yale University, ²University of Chicago

3-B-187 Longitudinal associations between social media use and structural brain development across adolescence

Michelle Achterberg¹, Andrik Becht¹, Renske van der Cruijsen¹, Ilse van de Groep¹, Jochem Spaans¹, Eduard Klapwijk¹, Eveline Crone¹

¹Erasmus University Rotterdam

3-B-188 Neonatal functional network predictors of infant affective behavior

M. Catalina Camacho¹, Deanna Barch¹, Rebecca Brenner¹, Sydney Kaplan¹, Jeanette Kenley¹, Rachel Lean¹, Da Yun Lee¹, Joan Luby¹, Cynthia Rogers¹, Tara Smyser¹, Chad Sylvester¹, Barbara Warner¹, Diana Whalen¹, Muriah Wheelock¹, Christopher Smyser¹

¹Washington University, St. Louis

3-B-189 Resisting aggression in social contexts: individual differences in psychopathic traits influence behavioral and neural responses to social feedback

Ilse van de Groep¹, Marieke G.N. Bos², Desana Kocevska³, Lucres M.C. Jansen⁴, Arne Popma⁴, Eveline Crone¹

¹Erasmus University Rotterdam, ²Leiden University, ³Netherlands Institute for Neuroscience, ⁴Amsterdam University Medical Center

3-B-190 Adolescents' Internalization of Parent and Peer Risk Attitudes: A Longitudinal fMRI Study

Kathy Do¹, Mitchell Prinstein¹, Kristen Lindquist¹, Eva Telzer¹ ¹University of North Carolina, Chapel Hill

3-B-191 How do adolescents use independent choice to learn about themselves?

Madeleine Moses-Payne¹, Douglas Lee², Tobias Hauser¹, Jonathan Roiser¹

¹University College London, ²California Institute of Technology

3-B-192 BNST and amygdala responses to unpredictable threat in children

Brandee Feola¹, Jacqueline Clauss², Elizabeth Flook³, Margaret Benningfield¹, Jennifer Blackford⁴

¹Vanderbilt University Medical Center, ²McLean Hospital, Harvard Medical School, ³Vanderbilt University, ⁴Munroe-Meyer Institute, University of Nebraska

3-B-193 Conversational theory of mind and social brain function in autistic and typically developing children and adolescents

Diana Alkire¹, Junaid Merchant¹, Kathryn McNaughton¹, Heather Yarger¹, Elizabeth Redcay¹

¹University of Maryland, College Park

C – Learning

3-C-195 Reward volatility modulates the use of multiple learning systems during adolescence

Catherine Insel¹, Jonathan Nicholas¹, Daphna Shohamy¹ ¹Columbia University

3-C-196 Prediction Error and Memory Encoding: Insights from a Computational Model

Francesco Pupillo¹, Javier Ortiz-tudela¹, Yee Lee Shing¹, Rasmus Bruckner²

¹Goethe University, Frankfurt, ²Free University Berlin

3-C-197 The development of numeral processing in the ventral visual stream: A longitudinal fMRI study

Benjamin Conrad¹, Gavin Price¹

¹Vanderbilt University

3-C-198 Foundational number sense training gains are predicted by hippocampal-parietal circuits

Hyesang Chang¹, Lang Chen², Yuan Zhang¹, Ye Xie³, Carlo de Los Angeles¹, Emma Adair¹, Gaston Zanitti⁴, Demian Wassermann⁴, Miriam Rosenberg-Lee⁵, Vinod Menon¹ ¹Stanford University, ²Santa Clara University, ³Sun Yat-Sen University, ⁴Inria Saclay Île-de-France, ⁵Rutgers University

3-C-199 Sign-tracking behaviors in children may help identify early risk of psychopathology

Janna Colaizzi¹, Shelly Flagel², Martin Paulus¹ ¹Laureate Institute for Brain Research, ²University of Michigan

D – Rewards/Motivation

3-D-200 Development of dopaminergic neurophysiology supports improvements in the use of optimal reward learning strategies through adolescence

Finnegan Calabro¹, Ashley Parr¹, William Foran¹, Beatriz Luna¹ ¹University of Pittsburgh

3-D-201 Childhood unpredictability, reward processing, and reward-related psychopathology

Yuyan (Lillian) Xu¹, Cassandra Lowe², Mingyeong Choi³, Seth Pollak¹

¹University of Wisconsin-Madison, ²University of Western Ontario, ³University of Alabama

3-D-202 Tissue iron, an indirect marker of striatal dopamine, is associated with delinquency and related personality characteristics in late childhood: Initial findings from the ABCD-Social Development Study

Ashley Parr¹, Finnegan Calabro¹, Will Foran¹, Douglas Fitzgerald¹, Kaylee Klingensmith¹, Duncan Clark¹, Lia Ahonen¹, Beatriz Luna¹

¹University of Pittsburgh

3-D-203 Illustrating rsfMRI striatal tissue iron measurements as developmentally sensitive, using neonatal data from the Developing Human Connectome Project to examine pre and postnatal age effects

Cabral Laura¹, Will Foran¹, Finn Calabro¹, Bea Luna¹ ¹University of Pittsburgh

3-D-204 Sleep Health Is Associated with Different Patterns of Striatal Response to Rewards in Youth with Anxiety and Healthy Youth

Nathan Sollenberger¹, Stefanie Sequeira², Aaron Mattfeld¹, Dana McMakin¹

¹Florida International University, ²University of Pittsburgh

E – Education

3-E-205 Associations between intrinsic motivation and neural response to reward in Mexican-origin youth

Angelica Carranza¹, Sarah Beard¹, Richard Robins¹, Paul Hastings¹, Amanda Guyer¹, Johnna Swartz¹ ¹University of California, Davis

F – Memory

3-F-206 How infants carve up continuous experience into neural events

Tristan Yates¹, Lena Skalaban¹, Cameron Ellis¹, Angelika Bracher², Chris Baldassano³, Nick Turk-Browne¹ ¹Yale University, ²Max Planck Institute for Human Cognitive and Brain Sciences, ³Columbia University

3-F-207 Examining whether hippocampal volume at initial recall predicts autobiographical memory retention after a one-year and two-year delay in 4- to 8-year-old children

Jade Dunstan¹, Sanaa Amin¹, Rylee Duncan¹, Carli Fine², Tracy Riggins¹

¹University of Maryland, College Park, ²University of Michigan

3-F-209 Developmental refinement of attention impacts semantic memory retrieval through adolescence

Sagana Vijayarajah¹, Margaret Schlichting¹ ¹University of Toronto

G – Environment (Stress, SES)

3-G-210 Prenatal PM2.5 and subcortical volumes in children with neurodevelopmental disorders

Elza Rechtman¹, Lindsay Alexander², Esmeralda Navarro¹, Demetrios Papazaharias¹, Allan Just¹, Robert Wright¹, Michael Milham², Chris Gennings¹, Megan Horton¹ ¹Icahn School of Medicine at Mount Sinai, ²Child Mind Institute

3-G-211 Developmental and Demographic Correlates of Behavioral Responses and Coping Strategies during the COVID-19 Pandemic

Ian Douglas¹, Blaire Porter¹, Melissa Aristizabal¹, Tyler Larguinho¹, Jessica Church¹ ¹University of Texas, Austin

3-G-212 Higher cingulum fiber density and crosssection predicts resilience to depression symptom increases throughout adolescence, including during the COVID-19 pandemic

Rajpreet Chahal¹, Tiffany Ho², Lauren Borchers¹, Ian Gotlib¹ ¹Stanford University, ²University of California, San Francisco

3-G-213 The importance of social support to mitigate prenatal maternal distress during the COVID-19 pandemic and its effects on infant brain connectivity

Kathryn Manning¹, Xiangyu Long¹, Lianne Tomfohr-Madsen¹, Gerald Giesbrecht¹, Catherine Lebel¹

¹University of Calgary

3-G-214 The Relationship between Functional Connectivity Patterns and Psychopathology in Youth Adopted from Foster Care

Jiwon Jung¹, Kaitlin Cummings¹, Nana Okada¹, Genevieve Patterson², Jill Waterman¹, Audra Langley¹, Susan Bookheimer¹, Mirella Dapretto¹, Nim Tottenham³, Shulamite Green¹

¹University of California, Los Angeles, ²University of Denver, ³Columbia University

3-G-215 The Default Mode Network Resting-State Functional Connectivity as a Protective Factor in the mediating link between Environmental Unpredictability and Impulsivity via Sleep Duration

Linhao Zhang¹, Landry Huffman¹, Zehua Cui¹, Assaf Oshri¹ ¹University of Georgia

3-G-216 The influence of stressful life events on the development of frontal cortical thickness across adolescence and related depressive symptoms in young adulthood

Lea Backhausen¹, Jonas Granzow¹, Hervé Lemaître¹, Juliane Froehner¹, Jean-Luc Martinot¹, Michael Smolka¹, Nora Vetter¹

¹Technische Universität Dresden

3-G-217 Socioeconomic disparities in adolescents' hippocampal volume and internalizing problems vary based on the cost of living and antipoverty programs of U.S. states

David Weissman¹, Mark Hatzenbuehler¹, Mina Cikara¹, John Flournoy¹, Deanna Barch², Katie McLaughlin¹

¹Harvard University, ²Washington University, St. Louis

3-G-218 Changes in cortisol in youth during the COVID-19 pandemic

Madison Fung¹, Brittany Taylor¹, Rachel Spooner¹, Christine Embury¹, Michaela Frenzel¹, Hallie Johnson¹, Madelyn Willett¹, Amy Badura-Brack², Stuart White¹, Tony Wilson¹

¹Boys Town National Research Hospital, ²Creighton University

3-G-219 A multidimensional approach to understanding the emergence of sex differences in internalizing symptoms in adolescence

Bianca Serio¹, Robert Kohler¹, Fengdan Ye¹, Sarah Lichenstein¹, Sarah Yip¹

¹Yale University

3-G-220 Deviations from typical fronto-amygdala circuit maturation are differentially associated with violence exposure and psychiatric symptoms in youth

Taylor Keding¹, Justin Russell², Ryan Herringa² ¹Yale University, ²University of Wisconsin-Madison

3-G-221 Effects of Racism on Neonatal Resting State Functional Brain Connectivity

Tammi Kral¹, Cathi Propper², Camille Williams³, Kirsten McLaughlin², Lindsay Gomes², Amanda Wylie², Rasmus Birn³, Sarah Short³

¹University of Wisconsin, Madison; Healthy Minds Innovations, ²University of North Carolina, Chapel Hill, ³University of Wisconsin, Madison

H – Brain Structure

3-H-223 Application of Gaussian Graphical Models to Identify Brain Structures Associated with Children's Appetitive Traits

Alaina Pearce¹, Timothy Brick¹, Travis Masterson¹, Shana Adise², Laural English³, S. Nicole Fearnbach⁴, Wendy Stein¹, Bari Fuchs¹, Kathleen Keller¹

¹Pennsylvania State University, ²Children's Hospital of Los Angeles, ³The Panum Group, ⁴Pennington Biomedical Research Center

3-H-224 Anxiety moderates the association between cortical thickness and anticipatory threat responding in Latina youth

Jordan Mullins¹, Rany Abend², Kalina Michalska¹ ¹University of California, Riverside, ²National Institute of Mental Health

3-H-225 Sensorimotor synchronization ability and brain plasticity: a longitudinal MRI twin study

Lina van Drunen¹, Rebecca Schaefer¹, Lara Wierenga¹ ¹Leiden University

3-H-226 Examining cerebellum volume and postural stability after paediatric mild traumatic brain injury

Ayushi Shukla¹, Ashley Ware¹, Bradley Goodyear¹, Antonia Stang¹, Stephen Freedman¹, Keith Yeates¹, Catherine Lebel¹

¹University of Calgary

3-H-228 Longitudinal effects of extreme and rapid weight gain on brain structure in a diverse sample of youth 9-to-12-years-old: findings from the ABCD study.

Shana Adise¹, Andrew Marshall¹, Sage Hahn², Shaomin Zhao¹, Eric Kahn¹, Megan Herting¹, Elizabeth Sowell¹

¹Children's Hospital of Los Angeles, ²University of Vermont

3-H-229 Examining longitudinal relationships between white matter organization in infancy and subsequent reading achievement at school age

Jennifer Zuk¹, Kelsey Davison¹, Jolijn Vanderauwera², Ted Turesky³, Kathryn Garrisi³, Ally Lee³, Jade Dunstan⁴, P. Ellen Grant⁴, Nadine Gaab³

¹Boston University, ²Université Catholique de Louvain, ³Harvard University, ⁴Boston Children's Hospital

3-H-230 The role of daytime sleepiness in the association between sleep and brain morphology during childhood

Elie Yu Tong Guo¹, Véronique Daneault¹, Annie Bernier¹ ¹University of Montreal

3-H-231 Systematic Review of Structural and Functional Neuroimaging Studies of Cannabis Use in Adolescence: Evidence from 90 studies and 9,441 participants

Sarah Lichenstein¹, Nick Manco¹, Lora Cope², Leslie Egbo³, Kathleen Garrison¹, Jillian Hardee², Ansel Hillmer¹, Kristen Reeder⁴, Elisa Stern¹, Patrick Worhunsky¹, Sarah Yip¹

¹Yale University, ²University of Michigan, ³Wesleyan University, ⁴East Carolina University

I – Networks

3-I-232 Predicting ABCD Symptomatology from Network Correlations Using Elastic Net Regularized Nonparametric Regression

Kelly Duffy¹, Nathaniel Helwig¹ ¹University of Minnesota

3-I-233 Motor learning-induced reconfiguration of functional brain networks in children

Mackenzie Woodburn¹, Margaret Sheridan¹, Cheyenne Bricken¹, Weili Lin¹, Jessica Cohen¹

¹University of North Carolina, Chapel Hill

3-I-234 Interrogating brain-wide patterns of functional connectivity related to age in newborns

Ashley Nielsen¹, Sydney Kaplan², Muriah Wheelock², Dominique Meyer², Jeanette Kenley², Dimitrios Alexopoulos², Tara Smyser², Lauren Wakschlag¹, Elizabeth Norton¹, Barbara Warner², Deanna Barch², Joan Luby², Chad Sylvester², Cynthia Rogers², Christopher Smyser²

¹Northwestern University, ²Washington University, St. Louis

3-I-235 Peripheral cytokines, network connectivity, and adolescent depression

Saché Coury¹, Vanessa López¹, Jaclyn S. Kirshenbaum¹, Giana Teresi², Anthony Gifuni³, Ian Gotlib¹, Tiffany Ho⁴ ¹Stanford University, ²University of Pittsburgh, ³McGill University, ⁴University of California, San Francisco

J – Mechanisms (hormones, neurotransmitters, physiology)

3-J-236 Mapping early brain-body interactions: associations between fetal heart rate trajectories during the second and third trimesters with newborn functional brain networks

Angeliki Pollatou¹, Arline Pierre-Louis¹, Bradley Peterson², Catherine Monk¹, Dustin Scheinost³, Marisa Spann¹ ¹Columbia University, ²University of Southern California, ³Yale University

K – Methods

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John Flournoy¹, Graham Baum¹, Patrick Mair¹, Leah Somerville¹ ¹Harvard University

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Lorenzo Semeia¹, Mina Nourhashemi², Mahdi Mahmoudzadeh², Fabrice Wallois², Hubert Preißl¹ ¹University of Tübingen, ²University of Picardie Jules Verne

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Melanie Grad-Freilich¹, HCP-D Consortium, Leah Somerville¹ ¹Harvard University

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Regula Everts¹, Leonie Steiner¹, Andrea Federspiel¹, Nedelina Slavova¹, Roland Wiest¹, Sebastian Grunt¹, Maja Steinlin¹

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Melis Cakar¹, Nana Okada¹, Kaitlin Cummings¹, Jiwon Jung¹, Genevieve Patterson², Susan Bookheimer¹, Mirella Dapretto¹, Shulamite Green¹

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Ines Mürner-Lavanchy¹, Julian Koenig¹, Corinna Reichl¹, Romuald Brunner², Michael Kaess¹

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Julia Nikolaeva¹, Brittany Manning¹, Soujin (Jinnie) Choi¹, Emily Harriott¹, Kaitlyn Fredian¹, Lauren Wakschlag¹, Elizabeth Norton¹

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3-N-250 Reciprocal relations between reading skill and the neural basis of phonological awareness in 7- to 9-year-old children

Jin Wang¹, Julia Pines¹, Marc Joanisse², James Booth¹ ¹Vanderbilt University, ²The University of Western Ontario

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Ted Turesky¹, Joseph Sanfilippo², Jennifer Zuk³, Jolijn Vanderauwera⁴, Xi Yu⁵, Ally Lee¹, Kathryn Garrisi¹, Jade Dunstan⁶, Clarisa Carruthers⁶, Nadine Gaab¹

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Cong Wang¹, Menghan Cong¹, Qingtian Mi¹, Guihua Yu¹, Yanjie Su¹, Lusha Zhu¹ *¹Peking University*

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Armen Bagdasarov¹, Kenneth Roberts¹, Michael Gaffrey¹ ¹Duke University

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Kirstin Schuerch¹, Valentin Benzing¹, Valerie Siegwart¹, Nedelina Slavova², Andrea Federspiel², Claus Kiefer², Maja Steinlin¹, Jochen Roessler¹, Regula Everts¹

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