SANS

Social & Affective Neuroscience Society

Virtual Conference

April 28 – May 1, 2021

13th Annual

Program At-A-Glance

Los Angeles	New York	GMT	London	Paris	Tokyo	Sydney
PDT	EDT		BST	CEST	JST	AEST
6:30	9:30	13:30	14:30	15:30	22:30	23:30
7:00	10:00	14:00	15:00	16:00	23:00	0:00
7:30	10:30	14:30	15:30	16:30	23:30	0:30
8:00	11:00	15:00	16:00	17:00	0:00	1:00
8:30	11:30	15:30	16:30	17:30	0:30	1:30
9:00	12:00	16:00	17:00	18:00	1:00	2:00
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17:30	20:30	0:30	1:30	2:30	9:30	10:30
18:00	21:00	1:00	2:00	3:00	10:00	11:00

Wednesday, April 28, 2021

Pre-release of content

All community chat spaces open, pre-recorded symposia talks and posters will be available to watch by attendees at the their leisure

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Sponsor Workshop

BREAK

NIH Roundtable
(LIVE Panel)

BREAK

Brain injuries and sports: The neuropathological, emotional, and relational impact
(LIVE Panel Session)

BREAK

Cocktail Class
"Home Bar Hacks with Kaitlin Wilkes Back"
14:15 - 15:15

SANS Social
Join the class or mingle for virutal games in gather.town

14:30 - 16:30

DAY 1 — Thursday, April 29

Live Session Plenary	On-demand	Poster Hall
Welcome Opening	Welcome Exhibit Hall **Business Meeting w/ survey** Live sessions become available on-demand for 30 days	Poster Session ALL (on demand)
Symposium #1 Presentations *(or pre-watch at your schedule)*		
Symposium #1 Live Q&A		
Symposium #2 Presentations *(or pre-watch at your schedule)*		
Symposium #2 Live Q&A		
Twenty years since The Emergence of Social Cognitive Neuroscience: A conversation with Kevin Ochsner and Matthew Lieberman		
BREAK		
Blitz		
Poster Session #1 (North American)		
Symposium #3 Presentations *(or pre-watch at your schedule)*		
Symposium #3 Live Q&A		

DAY 2 — Friday, April 30

Live Session Plenary	On-demand	Poster Hall
Symposium #4 Presentations *(or pre-watch at your schedule)*	Welcome Exhibit Hall **Business Meeting w/ survey** Live sessions become available on-demand for 30 days	Poster Session ALL (on demand)
Symposium #4 Live Q&A		
BREAK		
Distinguished Scholar Presentation **Uta & Chris Frith**		
BREAK		
Symposium #5 Presentations *(or pre-watch at your schedule)*		
Symposium #5 Live Q&A		
BREAK		
Early Career Awardees & Chat		
BREAK		
Blitz		
Poster Session #2 (Asia/Australia)		

DAY 3 — Saturday, May 1

Live Session Plenary	On-demand	Poster Hall
Blitz	Welcome Exhibit Hall **Business Meeting w/ survey** Live sessions become available on-demand for 30 days	Poster Session ALL (on demand)
Poster Session #3 (European)		
BREAK		
Symposium #6 Presentations *(or pre-watch at your schedule)*		
Symposium #6 Live Q&A		
BREAK		
Symposium #7 Presentations *(or pre-watch at your schedule)*		
Symposium #7 Live Q&A		
BREAK		
Global Perspectives on Social and Affective Neuroscience		
Closing		

** Final Program subject to change

Awards

Early Career Award

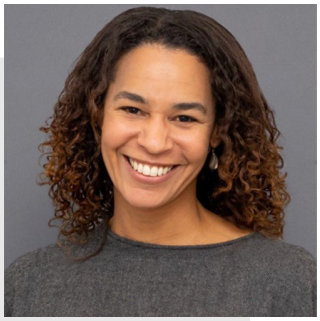
The Early Career Award recognizes an early-stage investigator who has made significant contributions to Social and Affective Neuroscience terms of outstanding scholarship and service to the field. The winner of the award will receive a $500 prize and be invited to give a short talk at the annual SANS meeting.

Emily Falk

University of Pennsylvania

2020 Early Career Award Winner

Emily Falk is a Professor of Communication, Psychology, and Marketing at the University of Pennsylvania, Director of Penn's Communication Neuroscience Lab and a Distinguished Fellow of the Annenberg Public Policy Center. Falk is an expert in the science of behavior change. Her research uses tools from psychology, neuroscience and communication to examine what makes messages persuasive, why and how ideas spread and what makes people effective communicators. Her research has been recognized by numerous awards, including early career awards from the International Communication Association, the Society for Personality and Social Psychology Attitudes Division, a Fulbright grant, a DARPA Young Faculty Award, the NIH Director's New Innovator Award. She was named a Rising Star by the Association for Psychological Science. She received her bachelor's degree in Neuroscience from Brown University, and her Ph.D. in Psychology from the University of California, Los Angeles.



Catherine Hartley

New York University

2021 Early Career Award Winner

Catherine Hartley is an Associate Professor of Psychology and Neural Science at New York University. Using diverse approaches including neuroimaging, psychophysiology, computational modeling, and ecological momentary assessment, her research focuses on characterizing the neural and cognitive computations underlying goal-directed learning and decision-making across development. Her scientific research has been recognized with awards including the NSF CAREER Award, the APS Janet Taylor Spence Award, the Cognitive Neuroscience Society Young Investigator Award, and the Society for Neuroeconomics Early Career Award, as well as with fellowships from the Jacobs, Klingenstein-Simons, and Brain and Behavior Research Foundations. She received her B.S. in Symbolic Systems from Stanford University, her Ph.D. in Psychology from New York University, and conducted her postdoctoral training at the Sackler Institute for Developmental Psychobiology at Weill Cornell Medicine.

Distinguished Scholar Award

The Distinguished Scholar Award recognizes the broad scope and potentially integrative nature of scholarship in social and affective neuroscience. It honors a scholar who has made distinctively valuable research contributions across his or her career in areas by significantly advancing our understanding of the biological basis of social and affective processes or expanding the core of social and affective neuroscience discipline.

Uta Frith & Chris Frith

Uta Frith, DBE, FBA, AcMedSci, FRS, is Emeritus Professor of Cognitive Development at the Institute of Cognitive Neuroscience at University College London. She is best known for her research on autism and dyslexia, which has resulted in new insights. She has developed theories and rigorously tested them to explain the core impairments in these conditions. Her book Autism: Explaining the Enigma (1989/2003) has been highly influential. Uta has received numerous honours and awards, and was made a Dame of the British Empire in 2012. She is also an international member of the U.S. National Academy of Sciences.

Uta has a special interest in science communication and public engagement, and has made a number of TV documentaries. She was chair of the Royal Society's Diversity Committee from 2015-2018 and has produced materials for members of selection committees to prime their awareness of unconscious bias. Since the 1990s Uta has been collaborating with her husband Chris on social cognition, leading up to a joint book on this topic. At the same time, with their son Alex as author, they are creating a graphic novel to explain social neuroscience to a wider audience.

Chris Frith, FRS, FMedSci, FBA is Emeritus Professor of Neuropsychology at the Wellcome Centre for Human Neuroimaging at UCL and Honorary Research Fellow at the Institute of Philosophy, London University. Since completing his PhD in 1969 he was funded by the Medical Research Council and the Wellcome Trust to study the relationship between the mind and the brain. He is a pioneer in the application of brain imaging to the study of mental processes. He has contributed more than 500 papers to scientific journals and is known especially for his work on agency, social cognition, and understanding the minds of people with mental disorders such as schizophrenia.

Chris as been Niels Bohr Visiting Professor in the Interacting Minds project at Aarhus University in Denmark and a Fellow of All Souls College Oxford. He has published several books, including The Cognitive Neuropsychology of Schizophrenia and Making up the Mind: How the Brain Creates our Mental World. In 2017, he was listed among the top ten most influential neuroscientists of the modern era. With Uta Frith he is currently preparing two books on social cognition, one in the form of a graphic novel and the other in more traditional form.

Poster Award Winners

Poster #	Name	Poster Title
1-C-57	**Lillian Campos**	Freezing is associated with higher amygdala metabolism in female adolescent monkeys
3-F-179	**Roser Canigueral**	Facial and neural mechanisms during interactive disclosure of biographical information
1-C-86	**Sarah Dziura**	Interactive effects of social context and emotions on a shared viewing experience
1-B-51	**Nir Jacoby**	Multiple neural routes for motivated reasoning in political partisans
3-F-193	**Eshin Jolly**	Spontaneous Neural Representations of Social Relationships in Naturalistic Contexts
3-L-230	**Kelsi King**	Subjective responses to amphetamine are related to fMRI anticipatory responses to monetary rewards in the ventromedial prefrontal and orbitofrontal cortex
1-B-52	**Yuan Chang Leong**	Threat and Moral-Emotional Language Drive Neural Divergence Between Conservatives and Liberals During Viewing of Political Videos
3-F-152	**Qianying Ma**	The posterior cerebellum supports implicit learning of true and false belief sequences
1-C-78	**William Mitchell**	Do You Feel How I Feel?: Developmental differences in affective neural representations
3-I-217	**Mitjan Morr**	Dynamics of stress and loneliness: longitudinal assessment of changes in neural emotion processing
2-I-215	**Marianne Reddan**	Modal and Supramodal Representations of Emotion Inference
2-A-18	**Ian Roberts**	Turning feelings into action: Affective valence temporally precedes value
2-D-101	**Anoushka Shahane**	Connecting cognition, cardiology, and chromosomes: Cognitive reappraisal impacts the relationship between heart rate variability and telomere length in CD8+CD28- cells
3-F-184	**Megan Speer**	Social sharing of positive autobiographical memories changes how we remember the past
3-F-162	**Moriah Stendel**	Self-esteem modulates self/other neural pattern correspondence during interpersonal perception
2-I-214	**Emma Templeton**	Clicking in conversation: Short gaps between turns signal social connection
3-F-168	**Miriam Weaverdyck**	Neural encoding of new social network structures
3-F-187	**Sophie Wohltjen**	Sharing Attention during Eye Contact in Natural Conversation

Diversity Award Winners

Sarah Kark

Laetitia Mwilambwe-Tshilobo

Junaid Merchant

Anoushka Shahane

Program Contents

About the Society

The Social & Affective Neuroscience Society (SANS) is committed to research investigating the neural basis of social and affective processes. The Society was founded in 2008 and now comprises over 400 members.

Welcome

to the 13th annual SANS Conference

Dear SANS Members & Attendees,

I am very pleased to welcome you to the 13th annual meeting of the Social & Affective Neuro-science Society (SANS).

This conference will be a particularly exciting one in many respects. First, it marks the 10th anniversary of our Society, which was officially incorporated in 2011. We are celebrating this milestone with a Plenary Symposium featuring two of our Society's founders, who will join a conversation about the history and future of social and affective neuroscience.

Second, this year will be our Society's first ever all-virtual conference, a format that is of course necessitated by the ongoing COVID-19 pandemic. Although I am sure I am not alone in missing seeing my colleagues face to face, I have been gratified to discover the many possibilities and opportunities a virtual conference offers that an in-person conference does not. I hope you agree that our program this year takes full advantage of these opportunities, and that it has enabled a larger and more diverse group of colleagues than ever before to convene and share our research, goals, and experiences.

To date, more than **400 attendees from over 21 countries have registered** for the conference--with more coming in as I write--continuing our yearly increases that reflect the growth in our field. I am especially heartened that so many of us will be gathering together given the pandemic and hardships that have led to this virtual meeting, which make our mutual connections and support more important than ever.

I want to express my sincere thanks to our Program Co-Chairs **Rob Chavez** (University of Oregon) and **Kyle Ratner** (University of California, Santa Barbara) and the program committee, including Regina Lapate, Hongbo Yu and Rene Weber. This committee quickly regrouped following the cancellation of the 2020 conference they had planned and together have created and outstanding scientific program for this year's virtual conference. The committee organized a total of **34 talks** including invited and selected symposiums, award talks, **18 blitz talks** as well as **222 posters**.

I am particularly excited that this year's virtual format will help to enhance our Society's international reach. Our program this year will feature our first ever panel composed of leaders of four social and affective neuroscience organizations from around the globe. I will lead this plenary session in a conversation about how social and affective neuroscientists can continue working to prioritize and strengthen our international collaborations and focus as our field continues to grow.

I am also pleased to congratulate our 2020 and 2021 awardees, who will be presenting on their ongoing research during the conference. They include our 2020 Early Career Awardee **Emily Falk** (University of Pennsylvania) and our 2021 Early Career Awardee **Catherine Hartley** (New York University), as well as our 2021 Distinguished Scholar Awardees **Uta & Chris Frith** (University College London). Innovation Award winner will be announced on the final day of the conference.

We are excited to engage with all attendees and will be hosting a virtual cocktail class on April 28th from 2:15pm – 3:15pm PDT (5:15pm – 6:15pm EST). If a cocktail class is not for you, we have a less formal mixer available on gather.town from 2:00pm – 4:00pm PDT (5:00 pm – 7:00 pm EST). Gather.town will also be available throughout the conference for mingling, especially during each poster session. Share publicly via social media sharing thoughts via twitter using #SANS2021 in additional to messaging and chatting options offered through our virtual conference platform, Whova.

Welcome

We are grateful for the support of our sponsors - BioPac and College of Letters & Science, UC Santa Barbara.

Details on the **Business of SANS** will be provided to attendees within the closing statement on Saturday, May 1st, 2021 at 2:00pm PDT (5:00pm EST) and encourage you to participate with the workings of our society. This closing session will also include the announcement of the winner of the Innovation Award and our new incoming Board members. This presentation, as with all other presentations during the conference, will be available to watch on-demand for all registrants for 90 days after the conference concludes.

We want to give a special thank you to **Jon Freeman** for his excellent service to the Society as our Treasurer for the last three years. His guidance has been invaluable to us all. I also want to thank **Marischal DeArmond** and **Lauren Moline**, **the Podium Conference Specialists** who have organized our society this year and have helped us transition to effectively executing our virtual conference. We are very grateful to be supported by professional conference managers to enable our continued growth.

Finally, we are delighted to invite you to attend our 2022 conference in Florida. Stay tuned for those details!

A warm welcome and thank you to the **members of SANS and conference participants** for your enthusiasm and for the work you have done to make the first SANS virtual conference such a success. We are confident the next four days will provide a terrific opportunity for expanding our knowledge, forging new connections, and enjoying virtually interacting with one another.

@SANS_news #SANS2021

SANS Leadership

Board Members

Abigail Marsh President	Georgetown University
Jennifer Pfeifer President Elect	University of Oregon
Thalia Wheatley Past President	Dartmouth College
Jennifer Silvers Secretary	University of California, Los Angeles
Jon Freeman Treasurer	New York University
Diana Tamir Member at Large	Princeton University
Yina Ma Member at Large	Beijing Normal University
Catherine Hartley Member at Large	New York University
Dominic Fereri Social Media Chair	Adelphi University

Program Committee

Robert Chavez Co-Chair	University of Oregon
Kyle Ratner Co-Chair	University of California, Santa Barbara
Regina Lapate Member	University of California, Santa Barbara
Hongbo Yu Member	University of California, Santa Barbara
Rene Weber Member	University of California, Santa Barbara

Awards Committee

Jon Freeman

Abigail Marsh

Jennifer Pfeifer

Diana Tamir

Thalia Wheatley

Scientific Program Committee

Tali Sharot	University College London
Pin-Hao Chen	National Taiwan University
Greg Samanez-Larkin	Duke University
Brent Hughes	University of California, Riverside
Maarten Boksem	Erasmus University Rotterdam
Mark Thornton	Dartmouth College
Lusha Zhu	Peking University
Patricia Lockwood	University of Birmingham
Bolton Chau	The Hong Kong Polytechnic University
Dylan Wagner	The Ohio State University
Woo-Young (Young) Ahn	Seoul National University
Dylan Gee	Yale University
Carolyn Parkinson	University of California, Los Angeles
Candace Raio	New York University
Maia Pujara	Sarah Lawrence College
Justin Kim	Sungkyunkwan University
Kimberly Chiew	University of Denver
Elizabeth Goldfarb	Yale University
Kuan-Hua Chen	University of California, Berkeley
Adrienne Wood	University of Virginia
Alexander Genevsky	Erasmus University Rotterdam
Josiah Leong	University of Arkansas
Choong-Wan (Wani) Woo	Sungkyunkwan University

General Conference Information

Whova Virtual Conference Platform
Whova Event App

Pre-Registration

If you have completed your registration for the virtual conference, please enter the platform through the SANS website, and follow the instructions.

Registration

If you wish to register and have not yet done so, please register here [https://www.confmanager.com/main.cfm?cid=3127&tid=32].

Note: Registrations completed after April 15, 2021 will experience a delayed access to the virtual Conference platform.

Code of conduct

By entering the virtual platform and participating in SANS Virtual Conference you are agreeing to the SANS Code of Conduct. To read the code of conduct. To read the code of conduct, please click here: [https://socialaffectiveneuro.org/about/#codeofconduct]

Conference Timelines

Real time streaming of the SANS Virtual Conference will take place the following times:

- April 28 – Symposia Sessions available at 7:00am PDT, Pre-conference workshops & Plenary starts 11:00am PDT
- April 29 – 8:00am - 3:30pm PDT
- April 30 – 8:15am - 3:45pm PDT
- May 1 – 6:45am - 2:00pm PDT
- On-demand content until August 1, 2021

Business Meeting

The update on Society business will be provided in the closing event and available to view any time on-demand for 3 months, to ensure it is accessible to all. We encourage you to view the business meeting video to be better acquainted with the SANS.

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.

SANS Social Night

Join us for a virtual Cocktail Class on April 28th from 2:15pm – 3:15pm PDT with award winning bartender, Kaitlin Wilkes-Back. Learn some at-home bartender hacks! If a cocktail class is not your speed, join Gather.town for a more informal social with some virtual games tables for interactive fun with other attendees.

Technical help during the virtual conference

If you encounter any technical issues during your virtual experience, please contact the software provider directly by emailing support@whova.com.

SANS Conference Program Schedule

Please note: All times are in PDT and need to be adjusted for your own time zone.

Wednesday, April 28

11:00 - 11:45am

Combining Physiological Measures for Affect Research (Live)

Thoughts and emotions are core to our human experience, driving our decision-making, behavior, and mood. Physiology data collection plays an important role in affective neuroscience research as it adds objective measures of neurophysiological response. The "Big 3—ECG/EDA/Respiration" provide a foundation for research and can be easily integrated into existing paradigms. We will demonstrate how to start a project with The Big 3 and show how they can be combined with other measures such as blood pressure and EEG. We will discuss your study interests and answer questions about different technology tools available, including for remote participants.

12:00 - 12:45pm

NIH Roundtable (Live)

- **Elizabeth Necka** (Speaker) Program Director, Behavior Change and Behavioral Interventions/Family and Interpersonal Relationships Portfolios, National Institute on Aging
- **Matt Sutterer** (Speaker) Program Director, Affective Neuroscience Section, National Institute on Aging
- **David I. Leitman** (Speaker) Program Chief, Social Neuroscience and Communication in Adult Psychopathology Program, National Institute of Mental Health

In this engaging 45min session, learn directly from program contacts within the NIH regarding social and affective neuroscience priorities and their grants process. There will be ample time for questions from attendees.

1:00 - 2:00pm

Brain injuries and sports: The neuropathological, emotional, and relational impact (Live)

Social and affective neuroscientists study how the brain gives rise to emotional responses and allows people to navigate social relationships. In recent years, there has been growing recognition that repeated concussions and subconcussive impacts experienced by youth and professional athletes can cause brain injuries that have debilitating consequences for emotional wellbeing and social functioning. In this symposium, three speakers at the forefront of traumatic brain injury advocacy and research will educate the SANS community about the multi-level complexities underlying concussions, subconcussive impacts, and related brain injuries. Ben Utecht, former professional American football player and Super Bowl Champion, will share the effect of concussions on his memory, emotions, and ability to interact with his family and the progress he has made in combating these difficulties. Then world-renowned neurologists, Dr. Ann McKee (Director of the BU Chronic Traumatic Encephalopathy Center) and Dr. Christopher Giza (Director of the UCLA BrainSPORT Program), will provide their perspectives on the underlying neuroscience.

- **Ben Utecht** (Speaker) National Spokesperson for the American Academy of Neurology and the American Brain Foundation
- **Ann McKee** (Speaker) Boston University School of Medicine

- **Christopher Giza** (Speaker) UCLA BrainSPORT Program
- **Kyle G. Ratner** (Moderator) University of California, Santa Barbara

2:15 - 3:15pm

Virtual Cocktail Class (Live) - Home Bar Hacks with Kaitlin Wilkes Back

- **Kaitlin Wilkes Back** (Speaker) Award Winning Bartender

Making more delicious drinks at home, how to choose the right products to work with and simple techniques to hack your way into perfectly Crafted Cocktails and mocktails.

2:30 - 4:30 pm

Gather.town Socialtime

Engage with other attendees through gather.town, a virtual 2D world where you can walk up to others, sharing your video & audio. With some games tables set up, you can recreate an informal social chat with other attendees.

Thursday, April 29

8:00 - 8:15am

Welcome / Opening

- **Kyle G. Ratner** (Speaker) University of California, Santa Barbara
- **Robert Chavez** (Speaker) University of Oregon

8:15 - 9:15am

Symposium #1: Affective & Social Brain Development in Childhood & Adolescence

- **Cue the brakes: Setting the stage for adolescent inhibitory control**
  Heidi Meyer (Speaker) Weill Cornell Medicine
- **Fractional anisotropy in white matter fibers connecting anterior insula and nucleus accumbens predicts greater future motivation in adolescents**
  Tiffany Ho (Speaker) University of California, San Francisco
- **Life stress, experience, and socioemotional dysregulation: Advancing understanding through novel neuroimaging approaches**
  Jamie Hanson (Speaker) Assistant Professor, University of Pittsburgh
- **Aging effects on memory-guided social decision-making**
  Karolina Lempert (Speaker) Postdoctoral Scholar, University of Pennsylvania

9:15 - 9:45am

Symposium #1 LIVE Q&A: Affective & Social Brain Development in Childhood & Adolescence

- **Heidi Meyer** (Speaker) Weill Cornell Medicine
- **Tiffany Ho** (Speaker) University of California, San Francisco
- **Jamie Hanson** (Speaker) Assistant Professor, University of Pittsburgh
- **Karolina Lempert** (Speaker) Postdoctoral Scholar, University of Pennsylvania

9:45 - 10:45am

Symposium #2: Hormonal Influences on the Social & Affective Brain

- **Interrogating the role of sex steroid hormones in the human brain**
  Emily Jacobs (Speaker) Asstistant Professor of Psychological and Brain Sciences, University of California, Santa Barbara
- **Sex-specific associations between testosterone, androgen receptor sensitivity, and amygdala volumes in adolescents**
  Megan Herting (Speaker) Assistant Professor, University of Southern California

- **Good news and bad news: The effects of estrogens on cognition and neuroplasticity during aging**
  Liisa Galea (Speaker) Professor, University of British Columbia
- **Childhood trauma, accelerated pubertal development and psychopathology in adolescence: The role of corticolimbic development**
  Natalie Colich (Speaker) Harvard University

10:45 - 11:15am

Symposium #2 LIVE Q&A: Hormonal Influences on the Social & Affective Brain

- **Emily Jacobs** (Speaker) Assistant Professor of Psychological and Brain Sciences, University of California, Santa Barbara
- **Megan Herting** (Speaker) Assistant Professor, University of Southern California
- **Liisa Galea** (Speaker) Professor, University of British Columbia
- **Natalie Colich** (Speaker) Harvard University

11:15 - 12:15pm

Twenty years since The Emergence of Social Cognitive Neuroscience (Live): A conversation with Kevin Ochsner and Matthew Lieberman

NeuroLeadership INSTITUTE

This year marks twenty years since Kevin Ochsner and Matthew Lieberman published their pivotal American Psychologist paper "The Emergence of Social Cognitive Neuroscience." In a moderated discussion with Emily Falk and Jamil Zaki, Ochsner and Lieberman talk about their influential paper, how the fields of social neuroscience and affective neuroscience have evolved in the intervening years, and what they see as trends for the future.

- **Kevin Ochsner** (Speaker) Columbia University
- **Matt Lieberman** (Speaker) University of California, Los Angeles
- **Emily Falk** (Moderator) University of Pennsylvania
- **Jamil Zaki** (Moderator) Stanford University

12:15 - 12:30pm

Break

12:30 - 1:00pm

Blitz Talks #1

- **Gabriella Alvarez** (Speaker) University of North Carolina, Chapel Hill
- **Steven Anderson** (Speaker) University of Miami
- **Taylor Guthrie** (Speaker) University of Oregon
- **Richard Huskey** (Speaker) Assistant Professor, University of California, Davis
- **Jeroen van Baar** (Speaker) Postdoc, Brown University

1:00 - 2:00pm

Poster Session #1

2:00 - 3:00pm

Symposium #3: Neural Computations Underlying Social Perception

- **A domain-general neural mechanism of flexible social perception**
  Jon Freeman (Speaker) Associate Professor of Psychology and Neural Science, New York University
- **A neuro-computational account of arbitration between imitation and emulation during human observational learning**
  Caroline Charpentier (Speaker) California Institute of Technology

- **Generalization of social value across contexts**
  Leor Hackel (Speaker) Professor, University of Southern California
- **Social interaction perception in natural vision**
  Leyla Isik (Speaker) Johns Hopkins University

3:00 - 3:30pm

Symposium #3 LIVE Q&A: Neural Computations Underlying Social Perception

- **Jon Freeman** (Speaker) Associate Professor of Psychology and Neural Science, New York University
- **Caroline Charpentier** (Speaker) California Institute of Technology
- **Leor Hackel** (Speaker) Professor, University of Southern California
- **Leyla Isik** (Speaker) Johns Hopkins University

Friday, April 30

8:15 - 9:15am

Symposium #4: Reasoning about the Self & Others

- **A value-based framework for understanding cooperation**
  Jay Van Bavel (Speaker) Associate Professor of Psychology & Neural Science, New York University
- **Yes, and: The building blocks of enjoyable conversation**
  Adrienne Wood (Speaker) Assistant Professor, University of Virginia
- **The contribution of different information channels to different facets of empathy**
  Anat Perry (Speaker) Hebrew University of Jerusalem
- **Functional selectivity for naturalistic social interaction perception in the superior temporal sulcus**
  Haemy Lee Masson (Speaker) John Hopkins University

9:15 - 9:45am

Symposium #4 LIVE Q&A: Reasoning about the Self & Others

- **Jay Van Bavel** (Speaker) Associate Professor of Psychology & Neural Science, New York University
- **Adrienne Wood** (Speaker) Assistant Professor, University of Virginia
- **Anat Perry** (Speaker) Hebrew University of Jerusalem
- **Haemy Lee Masson** (Speaker) John Hopkins University

9:45 - 10:00am

Break

10:00 - 11:15am

Distinguished Scholars Presentation (Live): Uta & Chris Frith "The dark side of mentalizing"

- **Uta Frith** (Speaker) University College London
- **Chris Frith** (Speaker) Professor Emeritus of Neuropsychology, Wellcome Centre for Human Neuroimaging, University College London
- **Thalia Wheatley** (Moderator) Professor, Dartmouth College

11:15 - 11:30am

Break

11:30am - 12:30pm **Symposium #5: Affective Neuroscience & Psychopathology**

- **Neural reinstatement reveals dissociable organization of long-term fear and extinction memories in healthy adults and PTSD**
  Joey Dunsmoor (Speaker) University of Texas, Austin
- **How affective neuroscience brought us to intolerance of uncertainty**
  Carien van Reekum (Speaker) University of Reading
  Jayne Morriss (Speaker) University of Reading
- **Neural indicators of food cue reactivity, regulation, and valuation and their associations with body composition and daily eating behavior**
  Richard Lopez (Speaker) Assistant Professor, Bard College
- **Positivity effect in aging: evidence for initial positivity in response to emotional ambiguity from amygdala habituation**
  Nathan Petro (Speaker) Postdoctoral Fellow, University of Nebraska-Lincoln

12:30 - 1:00pm **Symposium #5 LIVE Q&A: Affective Neuroscience & Psychopathology**

- **Joey Dunsmoor** (Speaker) University of Texas, Austin
- **Carien van Reekum** (Speaker) University of Reading
- **Jayne Morriss** (Speaker) University of Reading
- **Richard Lopez** (Speaker) Assistant Professor, Bard College
- **Nathan Petro** (Speaker) Postdoctoral Fellow, University of Nebraska-Lincoln

1:00 - 1:15pm **Break**

1:15 - 2:00pm **Early Career Awardees Talk & Q&A (Live)**

- **Emily Falk** (Speaker) University of Pennsylvania
- **Catherine Hartley** (Speaker) New York University

2:00 - 2:15pm **Break**

2:15 - 2:45pm **Blitz Talks #2**

- **Tracy Dennis-Tiwary** (Speaker) Hunter College
- **Jacob Elder** (Speaker) University of California, Riverside
- **Kiyohito Iigaya** (Speaker) CalTech
- **Vishnu "Deepu" Murty** (Speaker) Assistant Professor, Temple University
- **Jiaxin Yang** (Speaker) Beijing Normal University

2:45 - 3:45pm **Poster Session #2**

Saturday, May 1

6:45 - 7:15am

Blitz Talks #3

- **Attila Andics** (Speaker) Eötvös Loránd University (ELTE)
- **Helio Cuve** (Speaker) University of Oxford
- **Lily Tsoi** (Speaker) Princeton University
- **Johannes Schultz** (Speaker) University of Bonn

7:15 - 8:15am

Poster Session #3

8:15 - 8:30am

Break

8:30 - 9:30am

Symposium #6: Open Science Practices in Social & Affective Neuroscience

- **Candidate gene studies have taught us little about trait genetics but a lot about the fallibility of the scientific process**
  Matthew Keller (Speaker) University of Colorado at Boulder
- **Putting the social in social neuroscience: Collaborating to increase replicability**
  Kate Mills (Speaker) Assistant Professor, University of Oregon
- **Pooling resources to enhance rigour in affective neuroscience research: Insights from ERPs and anxiety**
  Blair Saunders (Speaker) University of Reading
- **A role for community-driven methods development in naturalistic neuroscience**
  Elizabeth DuPre (Speaker) PhD candidate, McGill University

9:30 - 10:00am

Symposium #6 LIVE Q&A: Open Science Practices in Social & Affective Neuroscience

- **Matthew Keller** (Speaker) University of Colorado at Boulder
- **Kate Mills** (Speaker) Assistant Professor, University of Oregon
- **Blair Saunders** (Speaker) University of Reading
- **Elizabeth DuPre** (Speaker) PhD candidate, McGill University

10:00 - 10:15am

Break

10:15 - 11:15am

Symposium #7: Connections within brains and across organisms

- **Measuring and modeling collective memory**
  Ida Momennejad (Speaker) Microsoft Research NYC
- **Building a shared conceptual space**
  Arjen Stolk (Speaker) Dartmouth College
- **Dissecting the neural mechanisms of social homeostasis**
  Gillian Matthews (Speaker) Salk Institute for Biological Studies
- **Characteristics of individual differences in functional brain networks**
  Caterina Gratton (Speaker) Assistant Professor, Northwestern University

11:15 - 11:45am

Symposium #7 LIVE Q&A: Connections within brains and across organisms

- **Ida Momennejad** (Speaker) Microsoft Research NYC
- **Arjen Stolk** (Speaker) Dartmouth College
- **Gillian Matthews** (Speaker) Salk Institute for Biological Studies
- **Caterina Gratton** (Speaker) Assistant Professor, Northwestern University

11:45 - 12:15am

Break

12:15 - 1:45pm

Global Perspectives on Social and Affective Neuroscience (Live)

NeuroLeadership INSTITUTE

Social and affective neuroscience research is conducted by investigators across the world. This symposium brings together leaders from social and affective neuroscience organizations on different continents – S4SN, ESSAN, AS4SAN and SANS. The speakers will consider the international reach of the field, ways to leverage global collaborations and training experiences, ideas for increasing the diversity of scholars who contribute to the field, and suggest new areas of study that may be of interest to the global SANS community.

- **Agustin Ibanez** (Speaker) S4SN & Latin American Institute for Brain Health (BrainLat)
- **Siri Leknes** (Speaker) S4SN & University of Oslo
- **Sarah Whittle** (Speaker) AS4SAN & University of Melbourne
- **Frank Van Overwalle** (Speaker) ESSAN & Vrije Universiteit Brussel (Dutch Free University Brussels)
- **Lasana Harris** (Speaker) ESSAN & University College London
- **Grit Hein** (Speaker) ESSAN & University of Würzburg
- **Yina Ma** (Speaker) SANS & Beijing Normal University
- **Abigail Marsh** (Speaker) SANS & Georgetown University

1:45 - 2:00am

Closing

- **Abigail Marsh** (Speaker) Georgetown University
- **Jennifer Pfeifer** (Speaker) University of Oregon

SANS Conference Oral Presentations

Thursday, April 29

Symposium #1: Affective & Social Brain Development in Childhood & Adolescence

Cue the brakes: Setting the stage for adolescent inhibitory control

Heidi Meyer[1]
[1]Weill Cornell Medicine

Behaviors that predominate during adolescence (e.g., exploration, novelty- and reward-seeking, social prioritization) are largely adaptive for the specific needs of this developmental period and facilitate the maturation to independence. However, when left unchecked, the same behaviors can result in negative health consequences. Adolescence coincides with a heightened rate of diagnosis for numerous developmental psychopathologies, and increased prevalence of drug abuse and addiction, all of which are characterized by difficulties with inhibitory behavioral control. In this talk, I will present recent research investigating the relationship between dynamics of neurobiological development and the use of environmental cues in service of behavioral inhibition, using a rodent model. Previous research has established that heightened recruitment of subcortical regions during adolescence can increase responding to affectively charged cues, in both appetitive and aversive domains. Building on this, I will discuss evidence of both maladaptive and surprisingly adaptive outcomes of the adolescent neurobiological environment for inhibitory control.

Fractional anisotropy in white matter fibers connecting anterior insula and nucleus accumbens predicts greater future motivation in adolescents

Tiffany Ho[1], Josiah Leong[2], Natalie Colich[3], Lucinda Sisk[4], Brian Knutson[5], Ian Gotlib[5]
[1]University of California, San Francisco, [2]University of Arkansas, [3]University of Washington, [4]Yale University, [5]Stanford University

Background & Aim: Adolescence is a period during which brain circuits that underlie incentivized behaviors mature dramatically. While researchers have documented significant functional changes in the anterior insula (AIns) and nucleus accumbens (NAcc) in response to reward-related stimuli across adolescence, investigators have not examined the white matter connections between these two brain regions during this developmental stage. Establishing a link between functional responses of the AIns and NAcc to incentivized anticipation and their white matter connectivity can elucidate the development of reward-related decision making. Methods: We recruited 91 young adolescents (ages 9-13 years, 32 males) who completed diffusion-weighted MRI and functional MRI during a monetary incentive delay (MID) task. We used diffusion-weighted MRI data to characterize the white matter tract connecting the AIns to the NAcc using constrained spherical deconvolution-based probabilistic tractography and the functional activity of the NAcc and AIns during anticipation of incentives and non-incentives on the MID. All participants also completed the Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ) at the time of scan, and a subset of participants (n=61) completed the SPSRQ two years later. Results: Higher fractional anisotropy (FA) of the AIns-NAcc white matter tract was associated with lower functional activation of the NAcc during anticipation of non-incentives (all βs>0.17; all ps<0.02) and with higher SPSRQ drive scores two years later (ß=0.20; p<<.05), Moreover, greater activation of the NAcc during anticipation of non-incentives mediated the association between FA of the AIns-NAcc white matter tract and SPSRQ drive scores two years later (p<0.05), even after controlling for age, sex, and initial SPSRQ scores. FA of the AIns-NAcc was not associated with activation of the NAcc during anticipation of incentives (all ps>0.62) or with SPSRQ scores at baseline (all ps>0.13). Conclusions: Our study is the first to trace the AIns-NAcc white matter tract in human adolescents. We demonstrated that white matter connectivity of the AIns-NAcc tract is positively correlated with NAcc activity during reward-related anticipation, which, in turn, mediates the positive correlation between white matter connectivity of the AIns-NAcc and motivational drive assessed two years later. Generating models that integrate structure and function of targeted circuits with motivated behaviors should increase our understanding of both typical and atypical adolescent development.

Life stress, experience, and socioemotional dysregulation: Advancing understanding through novel neuroimaging approaches

Jamie Hanson[1]
[1]University of Pittsburgh

Stress and adverse experiences are potent predictors of poor mental health and lower psychological well-being. Though well-studied in psychological and epidemiological research, the exact neurobiological mechanisms mediating these associations remain unclear. Emerging evidence, however, implicates dysfunction of reward and emotion-related neural circuitry in this pathophysiology. Grounded in these ideas, here, we detail novel work using integrative conceptual models of stress and neurobiology, rich measures of critical neurobehavioral mechanisms, and machine learning analytic approaches. Leveraging these elements, we center in on feedback learning, and connected neurobiology, to understand links between stress exposure in childhood and adolescence and psychopathology. We detail how lower value-based signaling in portions of the prefrontal cortex is related to stress exposure and symptoms of depression. We then detail research using penalized regression models to understand how multiple white matter pathways explain differences in mental health. We close this talk by then discussing work

on brain age and biomarkers of physiological dysregulation. Collectively, this novel work affords an opportunity to identify critical neurobiological alterations related to mood dysregulation and connected to adversity. Sustained progress on these issues could produce insights that practitioners could eventually use in reducing the negative mental health consequences of stress and different adverse experiences.

Aging effects on memory-guided social decision-making

Karolina Lempert[1], Michael Cohen[1], Kameron MacNear[2], Frances Reckers[1], Laura Zaneski[1], David Wolk[1]
[1]University of Pennsylvania, [2]University of Illinois - Urbana-Champaign

BACKGROUND AND AIM: When making decisions about interacting with others, we often must recall the value of prior experiences with them. Research in young adults has shown that retrieving an accurate association between a stimulus and its value is necessary to adaptively approach high-value stimuli and avoid low-value stimuli. Here we examined the effects of aging on memory-guided decision-making in social and non-social domains. **METHODS:** Young (n=50; aged 18-34), middle-aged (n=35; aged 35-56) and older (n=27; aged 66-92) adults completed a task in which they studied a series of faces along with how much the people pictured shared in a dictator game ($5 or $0 out of $10). They also saw house images representing lotteries worth $5 or $0. Then participants made choices about whether to interact with each person/house again. This was followed by recognition and associative memory tests. **RESULTS:** In all age groups, correct associative memory was necessary for making optimal decisions: there was a significant reward ($5/$0) x memory (no item/ item only/ associative) interaction effect on choice. Age was associated with worse associative memory ($r=-0.32$; $p<0.001$), however. This memory deficit led older adults to make suboptimal choices: unlike young and middle-aged adults, older adults' decisions were not influenced by whether stimuli were previously rewarding. Next we examined if decision-making differed when stimuli were social. Young adults responded strongly to social violations. Considering only stimuli whose values were correctly recalled, young adults were more likely to avoid unfair others than low-value houses. This effect was not present in middle-aged or older adults. In fact, older adults chose to interact with others that they confidently remembered as being unfair at a rate indistinguishable from chance (47.4%). **CONCLUSIONS:** These results suggest that poor associative memory combined with a bias toward approaching familiar faces (regardless of retrieved value) might make older adults vulnerable to exploitation. **ACKNOWLEDGEMENTS AND FUNDING:** This work is funded by grant RF1AG058065 from the National Institute on Aging.

Symposium #2: Hormonal Influences on the Social & Affective Brain

Interrogating the role of sex steroid hormones in the human brain

Emily Jacobs[1]
[1]University of California, Santa Barbara

Sex steroid hormones regulate regions of the mammalian brain that support higher-order cognitive and affective functions. In this talk I will describe work from my lab that pairs brain imaging, endocrine, and computational approaches to understand the extent to which endogenous and exogenous hormone factors influence the structural and functional architecture of the human brain. The brain is an endocrine organ whose structure and function is intimately tied to the action of neuromodulatory hormones. A central feature of the mammalian endocrine system is that hormone secretion varies over time. During an average human menstrual cycle, spanning 25-32 days, women experience an ~8-fold increase in estradiol and an ~80-fold increase in progesterone (Fig 1). Despite this striking change in endocrine status, we lack a complete understanding of how the brain responds to rhythmic changes in hormone production over time. The study of brain-hormone interactions in human neuroscience relies largely on cross-sectional designs that, by nature, cannot capture dynamic changes in hormone production. However, an emerging trend in human neuroimaging is to flip the cross-sectional model by densely sampling individuals over timescales of days, weeks, months, or years to provide greater insight into the dynamic properties of the human brain. The "28andMe" project was designed to determine how rhythmic changes in sex hormone production shape the structural and functional architecture of the human brain. Daily time-locked blood draws and sMRI/fMRI scans were acquired every 24h for 30 consecutive days. One year later the experiment was repeated under pharmacological hormone suppression. Across a series of studies, we establish the dynamic endocrine modulation of the nervous system. First, we discovered robust time-synchronous interactions between sex steroid hormones and the functional network organization of the brain across a complete menstrual cycle. Using time-lagged methods from dynamical systems analysis, we demonstrate sex hormones ability to drive widespread patterns of connectivity in the human brain and to enhance the global efficiency of large-scale functional networks with hubs in the prefrontal cortex. Next, using high-resolution hippocampal subfield imaging, we discovered that endogenous hormone fluctuations and exogenous hormone manipulations alter medial temporal lobe morphology. Across the menstrual cycle, intrinsic fluctuations in progesterone were associated with volumetric changes in CA2/3, entorhinal, perirhinal, and parahippocampal cortex. Chronic progesterone suppression abolished these cycle-dependent effects. These results establish progesterone's ability to rapidly and dynamically shape medial temporal lobe morphology over unprecedented time-scales.

Sex-specific associations between testosterone, androgen receptor sensitivity, and amygdala volumes in adolescents

Megan Herting[1], Claire Campbell[2], Bonnie Nagel[3], J.M. Tyszka[4]
[1]USC, [2]Preventive Medicine and Pediatrics, [3]OHSU, [4]California Institute of Technology

BACKGROUND AND AIM: Previous studies have reported sex differences and a potential role of testosterone in total amygdala development. However, our understanding of how testosterone and genetic differences in androgen sensitivity may relate to heterogeneous subnuclei within the amygdala remains unknown. **METHODS:** We examined the associations between free testosterone (FT), genetic differences in androgen receptor (AR) sensitivity, and amygdala subnuclei volumes in 220 adolescents, ages 10-17. Generalized additive mixed models were used to assess the relationship between amygdala subregion volumes and FT, age, and their interaction, and AR sensitivity. **RESULTS:** Sex-specific differences were found for age-by-FT associations. In females, age-by-FT interaction was found only for the left amygdala transition area, whereas males showed a significant age-by-FT effect for the right lateral amygdala, amygdala transition area, corticomedial, and left central and basolateral ventral and paralaminar subdivisions. AR-by-FT associations were present in the amygdalostriatal transition area in males only. **CONCLUSIONS:** These findings suggest different androgen-related mechanisms may underlie amygdala subregion volumes in adolescent males and females. Further research is needed to investigate whether sex-specific differences related to testosterone and AR sensitivity in amygdalar volumes relate to social and emotional behavioral outcomes across development.

Good news and bad news: The effects of estrogens on cognition and neuroplasticity during aging

Liisa Galea[1]
[1]University of British Columbia

BACKGROUND: Women have a greater lifetime risk for Alzheimer's disease (AD), but not other dementias, than men. Greater longevity in women does not fully explain this sex difference as severity of AD and cognitive decline with AD is greater in women than in men. Estrogens can be neuroprotective and hormone therapies (HTs) are used to combat cognitive decline in post-menopausal women. HTs differ in their composition of estrogens. Estradiol is the most potent estrogen and the predominant of the estrogens in younger women, while estrone is a weaker estrogen and the predominant of the estrogens in postmenopausal women. Meta-analyses indicate that estradiol-based HTs are beneficial, while estrone-based HTs can be detrimental to cognition. My talk will focus on how these different estrogens affect hippocampus-dependent neuroplasticity and cognition and how reproductive experience (pregnancy and mothering) can moderate these effects during aging. **METHODS:** Young adult or middle-aged ovariectomized or sham Sprague-Dawley rats are given various doses of acute or chronic estrogens, given a DNA synthesis marker such as bromodeoxuridine (BrdU) to assess neurogenesis (BrdU+/mature neuronal proteins), and run on a variety of hippocampus-dependent tasks such as the spatial working reference memory radial arm maze, Morris water maze, and tests of pattern separation. **RESULTS:** Estradiol facilitates hippocampus-dependent learning and memory, while estrone has more limited and often impairing effects on hippocampus-dependent learning and memory. Chronic estradiol, but not estrone, significantly increases neurogenesis in young adult female rats and new data indicates estradiol can increase neurogenesis dependent on strategy use. Finally, reproductive experience modulates the ability of the hippocampus to respond to estrogens in middle age, such that an estrone-based HT improved learning in nulliparous but impaired learning in primiparous middle-aged rats. Thus, previous parity alters the hippocampus to respond to estrogens in older female rodents, perhaps via changes in inflammation with aging with previous reproductive experience. **CONCLUSIONS:** These findings have implications for the treatment of age-related neurodegenerative disorders in women. Funding from CIHR (PJT-148662) and previously from Pacific Alzheimer's Research Foundation, Alzheimer Society of BC.

Childhood trauma, accelerated pubertal development and psychopathology in adolescence: The role of corticolimbic development

Natalie Colich[1], Nicholas Allen[2], Elizabeth Shirtcliff[3], Katie McLaughlin[1]
[1]Harvard University, [2]University of Oregon, [3]Iowa State University

BACKGROUND: Evidence suggests that threat-related early life adversity (ELA), but not deprivation, may accelerate pubertal development (Colich, Rosen, et al., 2019). Accelerated pubertal development may be a mechanism through which threat-related ELA confers risk for psychopathology in adolescence (Colich, Platt, et al., 2019). Given evidence for an effect of accelerated pubertal timing on neural responses to emotional stimuli (Whittle et al., 2015), we explore whether altered fMRI response to emotional stimuli, as a result of accelerated pubertal development, may explain the link between threat-related ELA and adolescent psychopathology. **METHODS:** A sample of 227 youth ages 10-13 were assessed for exposure to ELA and internalizing/externalizing symptoms. Pubertal stage was assessed using participants' self-report Tanner staging, as well as salivary levels of adrenal and gonadal hormones including DHEA, testosterone and estradiol. A subset of participants (n=149) also performed an emotional face viewing task while undergoing MRI scanning. **RESULTS:** We observed a significant indirect effect of threat-related ELA and externalizing symptoms through higher Tanner Stage scores, after controlling for age and sex (B=0.17, SE=0.08, 95% CI 0.04, 0.35), indicating that pubertal timing mediates the association between ELA and externalizing symptoms in this sample. We then examined whether accelerated pubertal development was associated with neural response to fear faces. We found a significant association between greater Tanner Stage (controlling for age) and decreased activation in the amygdala (L: B=-0.25, $p<0.01$; R: B=-0.22, $p<0.01$), hippocampus (L:B=-0.18, $p=0.01$; R:B=-0.19, $p<0.01$) and fusiform cortex (B=-0.16, $p<0.05$). However, there was no association between brain activation in these regions and externalizing symptoms.

Blitz Talks #1

Prior discrimination and current affective context modulate Black individuals' neural representations of White faces

Gabriella Alvarez[1], Kristen Lindquist[1], Keely Muscatell[1]
[1]University of North Carolina, Chapel Hill

BACKGROUND AND AIM: While understanding the antecedents and consequences of discrimination among Black Americans has gained widespread attention, very few studies have elucidated the neurobiological pathways by which experiences of discrimination become embedded in the brain and influence how Black individuals navigate the social world. In this project, we utilize a predictive brain framework to examine how prior experiences of discrimination and affective context interact to influence neural responses to ambiguous outgroup stimuli. We hypothesized that prior discrimination would modulate neural responses to White faces, depending on affective context (negative primes vs. neutral primes). **METHODS:** We examined neural reactivity to affective images and neutral faces in an affective misattribution paradigm in a sample of Black Americans (N=38; 26 female; M age 48, SD=11.7) with varying levels of exposure to discrimination. Whole-brain activation analyses and gPPI connectivity analyses were conducted to examine whether patterns of activity differed to White faces following negative primes versus White faces following neutral primes, as a function of discrimination exposure. **RESULTS:** Results revealed a negative association between discrimination and activity in an MPFC cluster. There was a positive association between discrimination and connectivity between the amygdala and clusters in the ACC, DLPFC, posterior insula, and somatosensory areas. There was also a positive association between discrimination and connectivity between the salience and default mode networks. **CONCLUSIONS:** These results suggest that prior experiences of discrimination influence how Black individuals integrate affective primes to respond to White faces in regions implicated in detecting salience and threat, and among regions and networks suspected to help regulate and make meaning of those associations.

Doctor trustworthiness reduces pain and its neural correlates in virtual medical interactions

Steven Anderson[1], Morgan Gianola[1], Natalia Medina[1], Jenna Perry[1], Tor Wager[2], Elizabeth Reynolds Losin[1]
[1]University of Miami, [2]Dartmouth College

BACKGROUND AND AIM: A patient's trust in their doctor, or the feeling that the doctor will do what is best for them, is a key component of the doctor-patient relationship and is associated with improved patient health outcomes. In a previous behavioral study using simulated clinical interactions (Losin, Anderson, & Wager, 2017), we found that patient feelings of trust toward their clinician predicted reductions in evoked pain in response to painful heat stimulations. In the present study, we investigated the brain mechanisms of this effect. **METHODS:** We utilized a previously developed stimulus set of computer-generated faces reliably judged as high or low in perceived trustworthiness (Oosterhof & Todorov, 2008) and superimposed them on doctor bodies. During fMRI, participants (N = 42) underwent a series of virtual medical interactions with these doctors during which they received painful heat stimulation as an analogue of a painful medical procedure. **RESULTS:** Participants reported higher trust in and lower pain unpleasantness with doctors who were higher in facial trustworthiness. Participants exhibited reductions in pain-related brain activity with doctors higher in facial trustworthiness using a multivariate neuromarker sensitive and specific to nociceptive pain, the Neurologic Pain Signature (NPS) (Wager et al., 2013). In contrast, doctor trustworthiness did not influence responses to a multivariate neuromarker of extranociceptive influences on pain, the Stimulus Intensity Independent Pain Signature (SIIPS) (Woo et al., 2017). **CONCLUSIONS:** Our findings suggest that doctor trustworthiness may directly impact brain systems related to nociception. Enhancing doctor trustworthiness in clinical settings may thus be a worthwhile target of medical education efforts. **ACKNOWLEDGEMENTS AND FUNDING:** The authors wish to thank Mary Christodoulou for her assistance with data analysis. This research was supported by University of Miami College of Arts and Sciences institutional startup funds.

Social Relationship Strength Modulates the Interpersonal Similarity of Brain Representations of Group Members

Taylor Guthrie[1], Robert Chavez[1]
[1]University of Oregon

Within our societies, humans form cooperative groups with diverse levels of relationship quality among individual group members. In establishing relationships with others, we use attitudes and beliefs about group members and the group as a whole to establish relationships with particular members of our groups. However, it is poorly understood how brain responses to group members facilitate relationship quality between pairs of individuals. We address this here using a round-robin interpersonal perception paradigm in which each participant was both a perceiver and target for every other member of their group, in a set of 20 unique groups of between 5 and 6 members (total N = 113). Using functional magnetic resonance imaging, we show that measures of social relationship strength modulate the similarity between pairs of participants' brain responses when perceiving other members of their group, in regions of the brain implicated in social cognition. These results provide evidence for a brain mechanism serving interpersonal relationship strength among group members.

A multi-layer network neuroscience investigation of the psychological state of flow

Richard Huskey[1], Justin Keene[2], Shelby Wilcox[3], Xuanjun Gong[1], Robyn Adams[3], Christina Najera[2]
[1]University of California, Davis, [2]Texas Tech University, [3]Michigan State University

Flow is a positively valenced psychological state characterized by high levels of intrinsic reward during goal-directed behavior. Flow occurs when there is a high level of task difficulty as well as when an individual has a high level of ability at the task. Empirical evidence shows that, when task difficulty and individual ability are both high, participants self-report the highest levels of flow and behavioral studies show that flow requires high levels of attention. Neurally, flow is associated with increased functional connectivity between fronto-parietal control and subcortical reward networks. Network neuroscience results show that flow is characterized by a brain-network topology that is energetically efficient and studies using tDCS demonstrate that default mode network down-regulation is causally implicated in the flow experience. However, little is known about the network dynamics that underpin flow, or how the network topology that characterizes flow experiences emerges over time. In this fMRI study (n=35), we use multi-layer network analyses to address this gap (see GitHub: https://github.com/cogcommscience-lab/flow-dynamic). We apply a multi-layer community detection algorithm to investigate node flexibility - how many times a node changes community - in the network. We show that nodes in the fronto-parietal control network are characterized by a high level of flexibility. By comparison, subcortical reward network nodes exhibit relatively low flexibility during task. Moreover, we show that the flow condition is associated with high modularity. These results provide initial support for the Synchronization Theory of Flow while also implicating potential boundary conditions and theoretical updates.

Intolerance to uncertainty modulates neural synchrony between political partisans

Jeroen van Baar[1], David Halpern[2], Oriel FeldmanHall[1]
[1]Brown University, [2]University of Pennsylvania

Political partisans see the world through an ideologically biased lens. What drives political polarization? It has been posited that polarization arises because holding extreme political views satisfies a need for certain and stable beliefs about the world. We examined the relationship between uncertainty tolerance and political polarization using brain-to-brain synchrony analysis, which measured committed liberals' and conservatives' subjective interpretation of a continuous political narrative. Participants (N=44) watched a political debate while undergoing fMRI. Shared ideology between participants increased neural synchrony in many brain areas including key regions of the valuation and theory-of-mind networks (e.g. temporoparietal junction). The degree of neural synchrony was modulated by uncertainty aversion: Uncertainty-intolerant individuals experienced greater brain-to-brain synchrony with politically like-minded peers and lower synchrony with political opponents. This effect was observed for liberals and conservatives alike. Moreover, increasing neural synchrony between committed partisans predicted subsequent polarized attitude formation about the debate after the scanning session. These results suggest that uncertainty attitudes gate the shared neural processing of political narratives, thereby fueling polarized attitude formation about hot-button issues.

Symposium #3: Neural Computations Underlying Social Perception

A domain-general neural mechanism of flexible social perception

Jonathan Freeman[1]
[1]New York University

Recent behavioral studies suggest that context and learned social-conceptual knowledge (e.g., stereotypes, emotion concepts, person knowledge) serve as implicit expectations that guide initial social perception. This can be 'adaptive' (e.g., when context is used to resolve ambiguous emotion) or 'maladaptive' (e.g., when stereotypical expectations bias face perception to conform to those expectations). We have proposed a model whereby such flexible social perception relies on interplay between the fusiform gyrus (FG) and orbitofrontal cortex (OFC). Five fMRI studies support this view. Multi-voxel representations of faces' group memberships (Study 1) and emotion (Study 2) in the FG and OFC partly reflected participants' unique social-conceptual associations. For instance, the extent to which a participant believed anger and fear were more conceptually similar predicted increased neural-pattern similarity between angry and fearful faces and a greater tendency to perceive these faces as visually more similar. Such expectation-driven impacts were also found for expectations triggered by more immediate contexts, such as when participants' knowledge about a target's emotional state affected representations of facial emotion (Study 3) or when a social context (e.g., White or Black person) affected representations of stereotypically associated objects (e.g., tool vs. gun) in that context (Study 4). Finally, backward masking was used to functionally isolate the FG from the OFC, and this reduced FG-OFC functional connectivity predicted a 'debiasing' effect in FG multi-voxel representations for masked stimuli despite the FG retaining the ability to still process the masked stimuli (Study 5). Together, the findings suggest that, for better or for worse, FG-OFC interactions during real-time perception distort the representational structure of other people's faces (or the objects related to them) more in line with one's social expectations.

A neuro-computational account of arbitration between imitation and emulation during human observational learning

Caroline Charpentier[1]
[1]California Institute of Technology

BACKGROUND AND AIM: In observational learning (OL), organisms learn from observing the behavior of others. There are at least two distinct strategies for OL: imitation, which involves repeating other agents' previous actions, and emulation, which proceeds from inferring their goals and intentions. Despite the prevalence of observational learning in humans and other social animals, a fundamental question remains unaddressed: how does the brain decide which strategy to use depending on the situation? **METHODS:** Here we developed a novel computational model in which arbitration between the strategies is determined by the predictive reliability, such that control over behavior is adaptively weighted toward the strategy with the most reliable prediction. To test the theory, we designed a novel behavioral task in which our experimental manipulations produced dissociable effects on the reliability of the two strategies. Participants performed this task while undergoing fMRI in two independent studies (the second a pre-registered replication of the first). **RESULTS:** Behavior manifested patterns consistent with both emulation and imitation and flexibly changed between the two strategies as expected from the theory. Computational modelling revealed that behavior was best described by an arbitration model, in which the reliability of the emulation strategy determined the relative weights allocated to behavior for each strategy. Emulation reliability - the model's arbitration signal - was encoded in the ventrolateral prefrontal cortex, temporoparietal junction and rostral cingulate cortex. **CONCLUSIONS:** Being replicated across two fMRI studies, these findings illuminate the mechanistic computations by which the brain decides to learn by imitation or emulation when observing others.

Generalization of social value across contexts

Leor Hackel[1], Peter Mende-Siedlecki[2], Karin Foerde[3], David Amodio[4]
[1]University of Southern California, [2]University of Delaware, [3]Columbia University Medical Center, [4]New York University

BACKGROUND AND AIM: We learn about other people through interactions in different contexts: a colleague who offers poor advice in the office may be fun at a party. Yet, to navigate the social world, people often must apply past learning to novel contexts. In a series of behavioral (combined N = 187) and functional MRI (N = 35) experiments, we tested the hypothesis that people generalize social value using trait knowledge acquired during cross-context interactions. **METHODS:** Participants played an economic game in which they made iterative choices to "hire" partners who answered verbal and math GRE questions to win points worth money. Partners were associated with different levels of competence in verbal and math domains. In a subsequent test phase, participants made decisions in novel contexts (e.g., physics or history). **RESULTS:** Computational modeling indicated that participants learned to value different partners in different settings, forming context-specific impressions of a partner's competence. Competence prediction errors during learning were associated with BOLD signal in ventral striatum--a region strongly linked to value-based learning--in addition to regions previously associated with social impression updating (ventro-lateral prefrontal cortex, inferior parietal lobule). Critically, when choosing partners in novel contexts, participants generalized value based on the conceptual similarity of abilities required in novel and original contexts. During choice, activity in dorsal anterior cingulate cortex--a region previously found to correspond to value representations during choice--scaled with this generalization gradient. **CONCLUSIONS:** Altogether, these findings reveal a process whereby people form context-specific impressions and use conceptual trait knowledge to generalize social value in novel contexts.

Social interaction perception in natural vision

Leyla Isik[1]
[1]Johns Hopkins University

Humans perceive the world in rich social detail. We effortlessly recognize not only objects and faces, but also when people are engaged in a social interaction. The ability to perceive others' social interactions was critical to our ancestors, and remains important for tasks from walking down a busy street to functioning at work. We recently identified a region that selectively represents others' social interactions in the posterior superior temporal sulcus (pSTS) using controlled experiments with simple stimuli. However, it is unclear how social interactions are processed in the real world where they co-vary with many other sensory and social features. In this talk I will discuss new working using naturalistic video paradigms and novel machine learning analyses to understand how humans process social interactions in natural settings. We find that social interactions guide behavioral judgements and are selectively processed in the brain, even after controlling for the effects of other visual and social information. Finally, I will discuss the computational implications of this social interaction selectivity and how we can develop artificial systems that share this core human ability.

Friday, April 30

Symposium #4: Reasoning about the Self & Others

A value-based framework for understanding cooperation

Jay Van Bavel[1]
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Understanding the roots of human cooperation, a social phenomena embedded in pressing issues including climate change and social conflict, requires an interdisciplinary perspective. We propose a unifying value-based framework for understanding cooperation, integrating neuroeconomic models of decision making with psychological variables involved in cooperation. We propose that the ventromedial prefrontal cortex serves as a neural integration hub for value computation during cooperative decisions, receiving inputs from various neuro-cognitive processes such as attention, memory and learning. Next, we describe findings on social factors that shape the value of cooperation. Our approach advances theoretical debates about cooperation by highlighting how previous findings are accommodated within a general value-based framework.

Yes, and: The building blocks of enjoyable conversation

Adrienne Wood[1], Jennie Lipson[1], Shelly Zhang[1], Quinn Hirschi[1]
[1]University of Virginia

BACKGROUND AND AIM: Conversation is difficult. People make it easier by linguistically and emotionally matching each other, which enables mutual understanding and rapport-building. But people derive pleasure from increasing knowledge and experiencing new things, so perfect alignment would hardly make for enjoyable conversation. We propose conversation (like improv) is best when people functionally say "yes, and" to each other. With each turn, a speaker agrees with their partner's appraisal (alignment) and contributes their own new information (surprisal). We broke conversation down to its basic components to examine how people approach the competing tasks of alignment and surprisal when talking to a stranger. In Study 1 we explored whether people avoid saying novel and surprising things to strangers, sacrificing enjoyment for the sake of being understood. In Study 2, we quantified the relationship between a different form of alignment--linguistic emotional tone matching--and enjoyment. **METHODS:** In Study 1 (preregistered), 50 pairs of participants completed a joint word association task together over Zoom without talking to each other beforehand, engaging in a "proto-conversation" as relative strangers. To see whether participants make less surprising (but more understandable) word associations with new acquaintances, we compared the surprisingness of word association chains generated by dyads in a proto-conversation and by individual members of each dyad. In Studies 2a and 2b (preregistered, total N = 392), participants wrote paragraph-length messages to each other. We quantified the linguistic emotional tone of their messages using LIWC. Across experiments, participants reported how much they enjoyed talking to their study partners. **RESULTS:** Study 1 participants tended to make less surprising word associations with their partner than alone, b = -.023, SE = .006, t(49.00) = -4.15, p = .0001. But the dyads that made more surprising word associations together liked each other more, b = .023, SE = .009, t(342) = 2.486, p = .013. Thus previously unacquainted participants tended err on the side of understandability rather than novelty, but when they loosened this constrain, they enjoyed themselves more. In Studies 2a and 2b, high self-monitors (people who tend to adjust their behavior to the social context) linguistically matched the emotional tone of their partners more when they liked them (Study 2b interaction term: b = -0.04, SE = 0.02, t(175.63)= -2.50, p =.013). People with the capacity to match their conversation partner's emotions will do so specifically if they are enjoying the conversation. **CONCLUSIONS:** Together these studies suggest interpersonal liking is associated with reduced semantic matching (verbal surprisal) but increased emotional tone matching (emotional alignment). Conversation is best when we say "yes, and" to each other: when we have something new to say and our partner feels the same way as we do about it.

The contribution of different information channels to different facets of empathy

Anat Perry[1]
[1]Hebrew University of Jerusalem

BACKGROUND AND AIM: Humans often depend on empathy, broadly defined as the ability to understand others' thoughts and feelings. Empathy encompasses a cognitive dimension, understanding another person's internal states, as well as an affective dimension, sharing the other person's emotional states. For both processes, we may rely on auditory and visual cues to extract different kinds of information. In order to better differentiate the roles of the auditory and visual channels in social communication, we've created a modified version of the Empathic Accuracy Task, a naturalistic, ecological task and stimuli set that would enable examining different features of the empathic response. **METHODS:** Participants ("targets") were videotaped describing affective autobiographical events, while we recorded their skin conductance and heart rate measures. Soon after being recorded, targets watched the videos of themselves and used a scale to continuously rate how positive or negative they had felt when telling the story. We now use these stimuli in a variety of paradigms, asking different participants to watch the same videos and, using an identical scale, continuously rate how they believe the targets felt at each moment. Time-series correlations between perceiver inferences and target ratings serve as a quantitative measure of interpersonal understanding (empathic accuracy, a more cognitive measure). Asking perceivers to rate their own affective response, as well as correlating the

targets' and perceivers' physiological measures, indicate affective synchrony, or experience-sharing. I will present a set of behavioral, psychophysiological, EEG, and lesion data that give new insight on the role of the auditory and visual channels in empathy and social communication. **RESULTS:** Using different variations of this task, we have now shown that hearing the target tell the story is significantly more important for empathic accuracy than seeing the target. However, seeing the other contributes to heart-rate synchrony, a proxy for experience-sharing. Moreover, we found that both heart-rate synchrony and EEG mu suppression correlate with empathic accuracy, suggesting that these cognitive and affective processes are often linked. I will also present preliminary evidence that while hearing alone is indeed enough to accurately understand the emotional state of the other, seeing each other may contribute to the affective experience, specifically to greater feelings of togetherness, trust, empathy and a sense of being listened to. Conclusions: Using a broad set of research techniques, I will elucidate the different roles that auditory and visual cues play in social communication, and specifically in empathy. These findings add to the theoretical scientific debate regarding the role of facial expressions in social interactions, and may have practical implications during a pandemic, when video communication is heavily utilized, and social distancing is necessary.

Functional selectivity for naturalistic social interaction perception in the superior temporal sulcus

Haemy Lee Masson[1], Leyla Isik[1]
[1]Johns Hopkins University

The ability to perceive dynamic social interactions is a crucial skill that helps us navigate the social world. Previous studies have revealed brain selectivity for social interactions in the posterior superior temporal sulcus (pSTS). As these studies have mostly relied on simple artificial stimuli, it remains largely unknown to what extent social interaction selectivity exists in the real world. A few studies have adopted a naturalist movie viewing paradigm to address this question, but none have measured the unique variance explained by social interactions beyond that explained by the co-varying factors (such as faces and voices) in natural movies. The current study utilizes machine learning-based fMRI analyses and computer vision techniques to uncover the brain mechanisms uniquely underlying naturalistic social interaction perception. We analyzed two publicly available fMRI datasets, collected while participants watched two different commercial movies in the MRI scanner. By performing voxel-wise encoding and variance partitioning analyses, we find that socio-affective features - consisting of an agent speaking, social interactions, theory of mind, perceived valence, and arousal - independently contribute to predicting withheld brain responses in the STS and the dorsal medial prefrontal cortex. Importantly, the STS and the precuneus show unique selectivity for scenes containing other's social interactions, even after the effects of all other sensory and social features, such as faces, an agent speaking, and theory of mind, have been controlled for. This unique selectivity generalized across both sets of movie data despite being collected from different MRI field strengths, movie genres, subjects, and labs. Together, these findings suggest that social interaction perception recruits dedicated neural circuits during natural viewing and is an essential dimension of social understanding.

Symposium #5: Affective Neuroscience & Psychopathology

Neural reinstatement reveals dissociable organization of long-term fear and extinction memories in healthy adults and PTSD

Joseph Dunsmoor[1],
[1]University of Texas-Austin

BACKGROUND AND AIM: Fear extinction is the foundation for exposure therapy, the most effective evidence-based treatment for anxiety and stress disorders. Consequently, advances in our understanding of how fear and extinction memories are represented in the human brain has clinical implications for improving treatment. Neurophysiological research shows dissociable regions in the medial prefrontal cortex separately code memories of fear and extinction in rodents. Whether such an organization exists in the human brain is unclear. Here, we combined knowledge on the neuroscience of fear and extinction with technical approaches to the study of human memory to isolate separate and stable long-term fear and extinction memory, and compared these representations between healthy adults (N = 24) and individuals with PTSD symptoms (N = 24). **METHODS:** Subjects first learned to associate non-repeating visual exemplars from a semantic category (animals or tools) with a shock (CS+) or no shock (CS-), followed by extinction to unique category exemplars. The next day participants saw each exemplar again in a test of long-term recognition memory. We used multivariate representational similarity of encoding-retrieval overlap to investigate selective coding of CS+ vs. CS- items as a function of when the item was encoded (fear or extinction). **RESULTS:** Healthy adults showed double dissociation between neural reinstatement of fear and extinction memory in the dorsomedial PFC and ventromedial PFC, respectively. These regions correspond to the prelimbic and infralimbic cortices shown in animal studies to separately code fear and extinction memory. By contrast, PTSD subjects displayed reinstatement of both fear and extinction memory in the dmPFC, and no reinstatement of extinction memory in the vmPFC, consistent with an extinction deficit associated with this disorder. **CONCLUSIONS:** This is new evidence that long-term fear and extinction memories are separately represented in dissociable medial PFC regions in the human brain. This organization is likely adaptive, as it allows long-term storage of competing memory of fear and safety. Disorganized neural allocation of extinction memory to the dmPFC in PTSD might explain extinction retention deficits that characterize this disorder.

How affective neuroscience brought us to intolerance of uncertainty

Carien van Reekum[1], Jayne Morriss[1]
[1]University of Reading

Emotion regulation and threat extinction are thought to share some neural systems which are considered key in reducing negative affect. Whilst the neural circuitry involved in reappraisal has been widely studied using variants of a task developed based upon cognitive-behavioural interventions, such tasks lack control over the processes invoked. As such, we reverted to threat extinction as a main probe for key affect systems. Given the nature of the task, we decided to take along measures of individual differences in intolerance of uncertainty (IU) in our first study of threat extinction. This choice was the start of a programme of research led by J.M. on intolerance of uncertainty, a transdiagnostic risk factor in emotional disorders and tendency to find uncertainty distressing. In this talk, we will provide an overview of our findings suggesting that IU is associated with compromised threat extinction, and - as a nod to our background in reappraisal - how such compromised extinction can be overcome. We will end with a few suggestions on how basic affective neuroscience research in IU can further contribute to the diagnosis and treatment of anxiety disorders.

Neural indicators of food cue reactivity, regulation, and valuation and their associations with body composition and daily eating behavior

Richard Lopez[1], Danielle Cosme[2]
[1]Bard College, [2]University of Pennsylvania

BACKGROUND AND AIM: Exposure to food cues activates the brain's reward system and undermines efforts to regulate impulses to eat. During explicit regulation, lateral prefrontal cortex activates and modulates activity in reward regions and decreases food cravings. However, it is unclear the extent to which between-person differences in recruitment of regions associated with reward processing, subjective valuation, and regulation during food cue exposure--absent instructions to regulate--predict body composition and daily eating behaviors. **METHODS:** In this preregistered study, we pooled data from five fMRI samples (N = 262) to examine whether regions associated with reward, valuation, and regulation, as well as whole-brain pattern expression indexing these processes, were recruited during food cue exposure and associated with body composition and real-world eating behavior. **RESULTS:** Regression models for a single a priori analytic path indicated that univariate and multivariate measures of reward and valuation were associated with individual differences in BMI and enactment of daily food cravings. Specification curve analyses further revealed reliable associations between univariate and multivariate neural indicators of reactivity, regulation, and valuation, and all outcomes. **CONCLUSIONS:** These findings highlight the utility of these methods to elucidate brain-behavior associations and suggest that multiple processes are implicated in proximal and distal markers of eating behavior.

Positivity effect in aging: evidence for initial positivity in response to emotional ambiguity from amygdala habituation

Nathan Petro[1], Ruby Basyouni[2], Maital Neta[3]
[1]University of Nebraska-Lincoln, [2]University of California, Los Angeles, [3]University of Nebraska, Lincoln

Older compared to younger adults show greater amygdala activity to positive emotions, and are more likely to interpret emotionally ambiguous stimuli (e.g., surprised faces) as positive. Indeed, surprised faces are ambiguous in that they may predict outcomes that are either positive (e.g., an unexpected gift) or negative (e.g., witnessing a car crash). While some evidence suggests that this age-related positivity effect results from a relatively slow top-down emotion regulatory mechanisms, others suggest it emerges during early, bottom-up processing. Relatedly, the amygdala is a key node in rapid, bottom-up processing and patterns of amygdala activity over time (e.g., habituation) can shed light on the mechanisms underlying the positivity effect. For example, whereas sustained activation of the amygdala over time promotes learning when the relevance of a stimulus is uncertain, amygdala activity habituates over time as stimuli are deemed inconsequential. The role of these amygdala activity patterns in the age-related positivity effect, however, has not been explored. Younger (N=51; 17-30 years) and older (N=43; 60-88 years) adults first rated the valence of surprised, angry, and happy expressions, which enabled a characterization of each person's valence bias (i.e., tendency to interpret surprised faces as positive or negative). A week later, they freely viewed blocks of surprised and neutral expressions across two runs in an MRI. Amygdala habituation was quantified as the change in surprise > neutral activity from run 1 to run 2. Older compared to younger adults rated the ambiguous surprised faces as more positive. Only in older adults, a more positive valence bias was related to greater habituation. While a positive bias in younger adults was associated with slower reaction times, consistent with an initial negativity hypothesis, older adults showed faster ratings of positivity. Together, we propose that there may be a switch to a primacy of positivity in aging.

Blitz Talks #2

Maximizing the benefits of gamified mobile attention bias modification via tDCS

Tracy Dennis-Tiwary [1], Sarah Myruski[1], Hyein Cho[1], Marom Bikson[2]
[1]Hunter College, [2]City College

Attention bias (AB), or exaggerated, selective processing of threat, is a neurocognitive mechanism in anxiety. Computer-based attention bias modification (ABM) is designed to systematically reduce AB, but gaps in understanding of underlying mechanisms and effective delivery systems abound. A neuromodulation technique, transcranial current stimulus (tDCS) applied to the pre-frontal cortex (PFC), has been shown to enhance the effects of ABM, presumably through bolstering top-down cognitive control. Yet, the evidence base is limited and has not been generalized to low-barrier delivery systems such as mobile applications. First, we present results of randomized placebo-controlled trials of a gamified ABM mobile application. In studies with college students, the app reduced anxiety, stress reactivity, and AB in a single session (Dennis & O'Toole; Dennis-Tiwary et al., 2016). In a trial including pregnant women who used the app for 30-40 minutes per week for one month, stress reactivity measured via salivary cortisol and subjective anxiety were reduced. Findings demonstrate that the app is an effective delivery system for ABM. Next, we report findings from a study testing whether active versus sham tDCS over the PFC augmented the beneficial effects of the ABM app (N = 38). Outcomes were AB measured via an RT-based assay, respiratory sinus arrhythmia (RSA) suppression during a stressor, and subjective anxiety. ABM alone reduced anxiety, whereas adding tDCS reduced AB and increased stress resilience measured via RSA suppression. Findings lay the groundwork for more targeted examination of ABM mechanisms and advance the development of more personalized and low-barrier treatments for anxiety.

Mapping the self: A network approach to understanding behavioral and neural representations of self-concept structure

Jacob Elder[1], Bernice Cheung[2], Tyler Davis[3], Brent Hughes[1]
[1]University of California, Riverside, [2]University of Oregon, [3]Texas Tech

People typically develop a coherent sense of self despite possessing multifaceted self-concepts. Here, we quantify the complexity of the self-concept as a network of interrelated traits, rather than as isolated features. We employ network methods to construct a trait network from semantic relationships, and draw on network-features to understand how people reason about the self. For instance, how does trait centrality--the degree to which the coherence of other traits in the network depends upon a target trait--influence self-evaluations? To construct the network, 167 participants nominated which traits depend on target traits for semantic meaning. Subsequently, 45 participants underwent functional MRI while evaluating themselves on traits in the network. Findings extend literature on neural representations of self in several important ways. Trait centrality predicted self-evaluations, such that participants rated themselves more consistently (trait evaluations more similar to trait neighbors) and favorably (more descriptive on positive and less descriptive on negative) on more central traits. We find that vmPFC - a region previously implicated in self-evaluation - processes the centrality of traits within the network. Furthermore, we demonstrate an indirect effect of centrality on self-evaluations via vmPFC response, such that vMPFC may play a role in integrating trait centrality to guide self-representation. Additionally, pairwise trait similarity was associated with the distance between pairs of self-evaluations as well as the similarity of activation patterns across the brain in an RSA searchlight procedure. These findings lay the foundation for a computational theory of how individuals holistically represent and navigate their self-concept.

Computational principles of subjective value construction

Kiyohito Iigaya[1], Sanghyun Yi[1], Iman Wahle[1], Sandy Tanwisuth[1], Aniek Fransen[1], John O'Doherty[1]
[1]Caltech

BACKGROUND AND AIM: It is an open question how humans flexibly construct the value of stimuli, even for stimuli never encountered before. While great progress has been made toward understanding how the brain adjusts the value of stimuli through reinforcement-learning, little is known about how stimulus value arises in the brain in the first place. Here, we propose and provide evidence that the brain constructs the value of a novel stimulus by extracting and assembling sensory and affective features. Notably, because those features are shared across a broad range of stimuli, we show that a simple linear regression model with common features can work as a single neural mechanism to construct the value across stimulus domains. **METHODS:** Large-scale online behavioral experiments (N>1900), in-depth fMRI experiments (20 sessions x 6 participants), computational modeling (computer vision, linear regression, deep convolutional neural network). **RESULTS:** In large-scale behavioral experiments with human participants, we show that a simple model of feature abstraction and linear summation can predict the subjective value of paintings, photographs, as well as shopping items whose values change according to different goals. The model shows a remarkable generalization across stimulus types and participants, e.g., when trained on liking ratings for photographs (e.g., pets, landscapes, advertisements), the model successfully predicts a completely different set of art painting ratings (e.g., pieces of cubism, impressionism), or when trained on clothing items for one gender (e.g., women's dress), the model successfully predicts ratings in the other gender (e.g., men's shoes) across contexts. Also, we show that these general features emerge through image recognition training in an artificial deep convolutional neural network, without explicit training on the features, suggesting that features relevant for value computation arise through natural experience (e.g., development). Furthermore, using fMRI, we found evidence that the brain actually performs such feature-based value computation

hierarchically, by transforming low-level visual features into high-level abstract features which in turn are transformed into valuation. **CONCLUSION:** We conclude the feature-based value computation is a general neural principle enabling us to make flexible and reliable value computations for a wide range of stimuli.

Reward supports higher-order reorganization of episodic memory via consolidation

Vishnu Murty[1]
[1]Temple University

Background: Individuals have better memory for high versus low reward events, which is often interpreted as high reward events being stamped in to memory. However, recent work shows that valuable items undergo systems-level consolidation, which is known to facilitate the formation of concepts. Behavioral research has yet to capture how reward motivation may facilitate more conceptual features of episodic memory. Methods: Participants underwent a rewarded free recall paradigm, in which they encoded high versus low reward events in an intermixed fashion. Participants than underwent recall after a 24-hour delay. Free recall data was scored for accuracy and conceptual organization, and simulated using a computational model of free recall. Results: Participants recalled more high versus low reward items ($p<0.01$), without any significant influence of delay. Further, individuals showed greater conceptual organization of free recall following consolidation, such that high reward items became more clustered in free recall after a delay ($p<0.01$). Model simulations revealed that these results can be simulated by binding items to a reward context during encoding, and biasing the replay of high reward items during consolidation. Discussion: These findings show that while motivation may facilitate accuracy both immediately and at a delay, rewarded information becomes more organized around a reward concept after a period of consolidation.

Socially shared down-regulation of prefrontal control predicts intergroup hostility

Jiaxin Yang[1], Hejing Zhang[1], Jun Ni[1], Yina Ma[1]
[1]Beijing Normal University

Individuals immersed in groups sometimes lose their individuality, take risks they would normally avoid and approach outsiders with unprovoked hostility. In this study, we identified within-group neural synchronization in the right dorsolateral prefrontal cortex (rDLPFC) and the right temporoparietal junction (rTPJ) as a candidate mechanism underlying intergroup hostility. We organized 546 individuals into 91 three-versus-three-person intergroup competitions, induced in-group bonding or no-bonding control manipulation and measured neural activity and within-group synchronization using functional near-infrared spectroscopy. After in-group bonding (versus control), individuals gave more money to in-group members than to out-group members and contributed more money to outcompete their rivals. In-group bonding decreased rDLPFC activity and increased functional connectivity between the rDLPFC and the rTPJ. Especially during the out-group attack, in-group bonding also increased within-group synchronization in both the rDLPFC and the rTPJ, and within-group rDLPFC synchronization positively correlated with intergroup hostility. Within-group synchronized reduction in prefrontal activity might explain how in-group bonding leads to impulsive and collective hostility toward outsiders.

Saturday, May 1

Blitz Talks #3

Dog fMRI reveals impulsivity-dependent neural reward response and motor inhibition

Attila Andics[1], Anna Gábor[1], Nóra Bunford[1], Márta Gácsi[1]
[1]Eötvös Loránd University (ELTE)

Impulsivity, a manifestation of disinhibition, is associated with individual differences in reward processing and motor control in humans, including at the neural level. Animal model research may provide additional insight into the specific nature of these relationships. The domestic dog is a viable model for studying several aspects of human behaviour and cognition, including impulsivity, due to similarities in evolutionary processes that shaped the behavior of the two species. To identify possible associations between dogs' impulsivity, reward processing and motor inhibition, we explored the relationship between their owner-rated hyperactivity-impulsivity scores (reflecting difficulties with behavioural and motor inhibition), their reward-related brain responses and head micromovements. During awake fMRI, dogs were presented with praising and neutral speech delivered by their owner or a control person. Findings indicated that in dogs, greater impulsivity was associated with (1) greater brain response in the left caudate nucleus, involved in reward processing, to the owner's praise compared to a control person's praise, (2) greater deactivation in the presplenial gyrus, involved in motor control, in response to the owner's praise compared to other conditions, and (3) greater micromovements during scanning, independently of condition. These results suggest that for more impulsive dogs, verbal praise may be more rewarding, and that they may need to recruit more motoneural resources for a comparable behavioural performance. Head micromovements provide an objective index of hyperactivity-impulsivity, and the dog is a plausible model to investigate the neural underpinnings of this trait.

Alexithymia predicts timecourse and entropy of gaze to emotions in autism

Helio Cuve[1], Santiago Castiello[1], Brook Shiferaw[2], Caroline Catmur[1], Geoff Bird[1]
[1]University Of Oxford, [2]Swinburne University of Technology

BACKGROUND: Atypical eye gaze is considered a key diagnostic marker of autism, and thought to underlie impairments in emotion processing from faces. Evidence for atypical visual exploration of emotional faces is, however, equivocal. We propose that, where observed, atypical visual exploration of emotional facial expressions is due to alexithymia, a distinct but frequently co-occurring condition (Bird & Cook 2013). We argue that methodological limitations of past studies, including the failure to capture the spatiotemporal dynamics of gaze behaviour, may miss potential differences with respect to the temporal patterns of gaze. **METHODS:** This eye-tracking study tested the alexithymia hypothesis using a number of recent methodological advances to study eye gaze during several emotion processing tasks (emotion recognition, intensity judgements, free gaze, cued viewing), in 25 IQ-matched, adults with, and 45 without, autism. A multilevel polynomial modelling strategy was used to describe the spatiotemporal dynamics of gaze to emotional facial expressions. Entropy metrics were also used assess task and stimuli related priors effects in modulating gaze behaviour, beyond traditional gaze metrics. **RESULTS:** Converging evidence from traditional and novel methods revealed that atypical eye gaze to dynamic emotional expressions, is best predicted by alexithymia in both autistic and non-autistic individuals. Alexithymia models outperformed diagnosis and autistic traits models in accounting for how eye gaze evolved overtime, capturing the non-linear changes expected in gaze behaviour. Contrary to prevailing theories of social attention in autism, which suggest that atypical eye gaze reflects atypical orienting mechanisms, non-parametric time-series clustering indicated significant effects of alexithymia that persisted across the entire viewing window, with very few significant periods in which effects of autism were observed. Information theoretic metrics also revealed differential effects of task on gaze patterns as a function of alexithymia which predicted increased entropy (increased randomness) on conditions designed to induce confirmatory and predictable visual exploration of faces. **DISCUSSION:** Consistent with recent Bayesian accounts of autistic perception (Pelicano & Burr, 2013), both timecourse and entropy analysis of eye gaze to emotional expressions, suggest that alexithymia is related to reduced influence of task and stimuli priors. These findings highlight potential underlying visual processing mechanisms of atypical emotion processing in alexithymia and autism. They echo growing calls for the need to account for the effects of alexithymia when studying emotion and social attention in autism. The results of this study may also go some way towards explaining previous inconsistencies in the literature, and offer model for studying the gaze patterns of atypical groups.

Investigating neural dynamics during real-time conversations with fMRI hyperscanning

Lily Tsoi[1], Diana Tamir[1]
[1]Princeton University

Social interactions are the touchstone of human sociality. Yet, we know very little about the cognitive and neural processes that support naturalistic social interactions. One main challenge in using fMRI to study real dyadic interactions is that most facilities can only scan one brain at a time. Here we overcome this challenge with hyperscanning and investigate the neural dynamics of dyads engaging in real-time conversations. In this study, we recruit pairs of friends and strangers to examine how social interactions may give rise to social connection. All dyads engage in a structured conversation while simultaneously being scanned in adjacent rooms. In the Conversation condition, dyads take turns responding naturalistically to topic prompts; in the Read condition, dyads take turns reading from real conversations gathered from previous participants. Analyses test if friends and strangers differentially exhibit two types of neural dynamics: neural synchrony and prediction. We measure neural synchrony by calculating inter-subject correlations (ISC) across brain networks implicated in social cognition, memory, and reward, as well as control primary sensory cortices; we measure neural prediction by assessing ISC along a range of temporal offsets. Ongoing data collection and analyses thus far demonstrate the feasibility of studying dyadic interactions with hyperscanning. This work offers a promising new direction for studying naturalistic social interaction.

The link between autistic-like traits and neural representations of social interactions is moderated by GABA signalling

Johannes Schultz[1], Carolina Beckenkamp[2], Torge Dellert[2], Ann-Kathrin Kreuder[1], Dirk Scheele[1], Mari Babasiz[1], Laura Remmersmann[1], Rüdiger Stirnberg[3], Tony Stöcker[3], René Hurlemann[4]
[1]University of Bonn, [2]University of Muenster, [3]German Center for Neurodegenerative Diseases (DZNE), [4]University of Oldenburg

BACKGROUND AND AIM: Detecting social agents and recognizing their interactions are fundamental social-cognitive processes. The capacity for interpreting social interactions is influenced by interindividual differences such as autistic-like traits and preliminary evidence indicates that abnormalities in GABA signalling may underly symptoms of autism spectrum disorder. Here, we used ultra-high field 7T fMRI and experimentally probed GABA signalling via administration of the benzodiazepine Lorazepam to investigate how the neural representations of social interactions vary among healthy participants as a function of autistic-like traits and GABA. **METHODS:** In a parallel group, double-blind, randomized trial, 63 healthy men received 1 mg Lorazepam or placebo. They were scanned while performing a detection task on dynamic point-light displays of biological motion depicting friendly, unfriendly, and emotionally neutral social interactions. Neural representations were assessed using multivariate representation similarity regression analysis of whole-brain BOLD fMRI data. **RESULTS:** Detection and recognition of social interactions varied as a function of autistic-like attention switching traits, but not between treatments. Lorazepam increased the negative association between autistic-like attention switching traits and representations of the emotional valence of the social

interactions in the superior temporal gyrus, lingual gyrus, and cerebellum. **CONCLUSIONS:** These data suggest that the variation as a function of autistic-like traits in the neural representations of social cues relies on GABA-dependent neural circuits. As such, our findings provide further support for the notion that GABA signalling is implicated in cognitive functions affected in autism spectrum disorder.

Symposium #6: Open Science Practices in Social & Affective Neuroscience

Candidate gene studies have taught us little about trait genetics but a lot about the fallibility of the scientific process

Matthew Keller[1]
[1]University of Colorado at Boulder

The candidate gene (CG) approach has been used for 30 years to investigate the influence of specific polymorphisms in genes thought a-priori to be related to complex traits. Thousands of such studies have been and continue to be conducted, most reporting significant associations. In the last 15 years, a much different approach, the genome-wide association study (GWAS), has been used to investigate nearly all common genetic polymorphisms across the genome at once. Using sample sizes orders of magnitude larger than typical CG studies, GWASs have made tens of thousands of reliable discoveries, but the effect sizes are typically much smaller than those detected in CG studies, and specific CG hypotheses have failed to replicate when directly interrogated in GWAS data. What might explain these apparent contradictions? It is possible that CG studies measure traits with higher precision or that they investigate less complex "endophenotypes," but neither explanation holds up under scrutiny. Rather, CG studies suffer from many factors--publication bias, inconsistent methodological practices, low priors, and low power--that increase the false positive rate in any field. We argue that the many positive findings using the CG approach are largely false positives and are a humbling reminder of the fallibility of the scientific process as currently practiced. The CG approach has been abandoned in mainstream genetics; it is time to do likewise in neuroscience.

Putting the social in social neuroscience: Collaborating to increase replicability

Kate Mills[1]
[1]University of Oregon

Collaborations across laboratories and institutions has played a key role in addressing the replication crisis in psychology. Collaborating on research projects increases the diversity of perspectives on a given topic, and helps identify the factors that could underlie discrepancies in findings. Despite the many reasons why collaborations are beneficial to science, there are also barriers to engaging in research collaborations. This talk will discuss how early career scientists can make the most of research collaborations to improve the replicability and robustness of social neuroscience findings, drawing from examples in developmental cognitive neuroscience.

Pooling resources to enhance rigour in affective neuroscience research: Insights from ERPs and anxiety

Blair Saunders[1]
[1]University of Dundee

BACKGROUND AND AIM: Recent years have witnessed calls for increased rigour and credibility in the cognitive and behavioural sciences. Many procedures exist to increase rigour, and among the most important is the need to increase statistical power. Achieving sufficient statistical power, however, is a considerable challenge for resource intensive methodologies (e.g., neuroscience), particularly for between-subjects designs. In this talk, I will provide a non-technical overview and evaluation of open science methods that could be adopted to increase statistical power to address hypotheses in affective neuroscience using both retrospective and prospective meta-analyses **METHODS:** We contrast post hoc statistical procedures that can be used to correct for publication bias in the primary literature, as well as detailing methods that can be used to conduct prospective preregistered meta-analyses that could be combined with a team science approaches. **RESULTS:** Using the example of anxiety and error-related brain activity, we indicate that traditional meta-analyses, even when including statistical bias-correction methods, are often unable to confirm or dis-confirm established hypotheses. **CONCLUSIONS:** We suggest that many existing retrospective meta-analyses are exploratory in nature, providing a range of plausible effect sizes without necessarily having the ability to confirm existing hypotheses. We suggest that small and large scale registered prospective meta-analyses might provide more robust inferences in ongoing affective neuroscience research.

A role for community-driven methods development in naturalistic neuroscience

Elizabeth DuPre[1]
[1]McGill University

Naturalistic neuroscience features high-dimensional signals for both brain and behavior, as brain-mapping tools are paired with rich measures of emotional and social interactions. Mapping reliable signals in these high-dimensional spaces generally requires robust analytic methods; as such, naturalistic neuroscience research is driven in large-part by methodological advances. In this talk, I will argue that community-driven data sharing and methods development provide necessary structure for creating robust tools and reliable theoretical inferences. Opportunities and challenges for naturalistic neuroscience in the era of "deep data" will also be discussed.

Symposium #7: Connections within brains and across organisms

Measuring and modeling collective memory

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From families to nations what binds individuals in social groups is, to a large degree, their shared beliefs, norms, and memories. Collectively shared memories are a result of communication among individuals leading to community-wide synchronization. Over the past years we have used graph theory, computational modeling, and behavioral experiments in lab-created networks to investigate how how conversations shape collective memories. I will discuss the logic, methodology, and outcomes of the studies. The confluence of computational methods and social psychology experiments in our approach offers a powerful framework for analyzing social structures and enabling social change.

Building a shared conceptual space

Arjen Stolk[1]
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Intuitively, humans understand one another because they share the same set of communicative signals such as words and gestures. However, that intuition neglects the extreme flexibility with which we employ our communicative signals in everyday social interaction. Neither can it account for our evolutionarily anomalous ability to instantly reach joint meaning of new signals in the first place. In this talk, I will present neuroscientific evidence converging on the notion that human communicators share not signals but a fleeting conceptual space. This shared conceptual space provides context for selecting and interpreting communicative signals that can be mutually understood. The shared conceptual space is jointly coordinated and updated during social interaction, and that coordinated updating is altered in individuals diagnosed with Autism Spectrum Disorder. Finally, I will present ongoing work demonstrating how empirical studies of social interaction can be combined with intracranial recordings in neurosurgical patients to yield rare mechanistic insights into our core interactional abilities.

Dissecting the neural mechanisms of social homeostasis

Gillian Matthews[1], Mackenzie Lemieux[1], Christopher Lee[1], Elizabeth Brewer[2], Matilde Borio[1], Alba Lopez Moraga[2], Enzo Peroni[2], Anna Palle Lopez[2], Raymundo Miranda[1], Laurel Keyes[1], Nancy Padilla[1], Eyal Kimchi[2], Romy Wichman[1], Kay Tye[1]
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BACKGROUND AND AIM: Neural circuits which motivate social approach are essential in maintaining social connections and preventing isolation. However, the identity, interconnectivity, and functional encoding of social information within motivational neural circuits remains poorly understood. Our work has focused on dorsal raphe nucleus (DRN) dopamine (DAT) neurons (DRN-DAT) in mice, which we previously implicated in mediating a 'loneliness-like' state and providing the motivational drive to seek social interaction. **METHODS:** We combined projection-specific optogenetic manipulations, mRNA expression analyses, ex vivo electrophysiology, and in vivo single-cell calcium imaging in mice to elucidate how these neurons orchestrate their behavioral effects via multiple downstream projections. **RESULTS:** We find that three prominent DRN-DAT projections - to the bed nucleus of the stria terminalis (BNST), central amygdala (CeA), and posterior basolateral amygdala (BLP) - play separable roles in modulating behavior, despite substantial collateralization. These downstream regions showed diverse receptor expression patterns, and photostimulation of DRN-DAT terminals was able to modulate downstream activity in a cell-type-specific manner. Examining single-cell activity in the CeA revealed distinct functional neuronal ensembles that switched their response to social contact during DRN-DAT photostimulation. **CONCLUSION:** Our data indicate that DRN-DAT input to the CeA biases behavior towards sociability by shifting the downstream neuronal representation of social stimuli.

Characteristics of individual differences in functional brain networks

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[1]Northwestern University

The brain is organized into large-scale systems or networks, which can be measured using functional connectivity MRI. Studies of large groups have established a robust picture of the typical organization of networks in the human brain. However, recent work suggests that network organization varies significantly across individuals. In my talk, I will discuss our work using precision MRI (based on extended data acquisition from single participants) to identify and characterize reliable individual differences in the systems-level organization of the human brain. We find that some brain locations (network 'variants') show profound differences ($r<0.3$) from the typical network pattern. Variants are ubiquitous, stable over time and states, and associated with systematic changes in function. Variants come in multiple forms, including shifts in the borders between functional systems and ectopic islands of altered networks that are far from their typical location. This work suggests that individual differences are common and integral components of brain system organization, which must be addressed to expand our understanding of typical and atypical brain function.

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Thursday, April 29 1:00 - 2:00pm PDT

Poster Session 2
Friday, April 30 2:45 - 3:45pm PDT

Poster Session 3
Saturday, May 1 7:15 - 8:15am PDT

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

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B Intergroup Processes
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SANS Conference Posters

Titles, Authors and Affiliations

Poster Session #1

Thursday, April 29, 2021 | 1:00 - 2:00pm PDT

A - Decision-Making

1-A-4 Emotional impact of responsibility for negative social outcomes is related to insula activity

Johannes Schultz[1], Maria Gädeke[1], Tom Willems[1], Omar Ahmed[1], Bernd Weber[1], René Hurlemann[2]

[1]University of Bonn, [2]University of Oldenburg

1-A-5 Differential neurocognitive functioning and personality traits in underage drinking

Gabriela Rivarola Montejano[1], Angelina Pilatti[1], Ricardo Pautassi[1]

[1]National University of Cordoba, Argentina

B - Intergroup Processes

1-B-40 Intergroup biases shape neural representations of self-other trade-offs

Suraiya Allidina[1], William Cunningham[1]

[1]University of Toronto

1-B-41 The neural underpinnings of intergroup social cognition: An fMRI meta-analysis

Carrington Merritt[1], Jennifer MacCormack[2], Andrea Stein[3], Kristen Lindquist[1], Keely Muscatell[1]

[1]University of North Carolina at Chapel Hill, [2]University of Pittsburgh, [3]University of Wisconsin-Madison

1-B-42 Neural mediators of sex differences in pain

Elizabeth Losin[1], Stephan Geuter[2], Tor Wager[3]

[1]University of Miami, [2]Johns Hopkins, [3]Dartmouth College

1-B-43 Effects of language context and cultural orientation on pain responses among Spanish-English bilinguals

Morgan Gianola[1], Maria Llabre[1], Elizabeth Losin[1]

[1]University of Miami

1-B-44 Target gender moderates racial bias in pain perception and treatment

Azaadeh Goharzad[1], Alexis Drain[1], Jingrun Lin[2], Peter Mende-Siedlecki[1]

[1]University of Delaware, [2]University of Virginia

1-B-45 Cooperation and ingroup positivity bias in judging facial expressions of emotion: Perceptual processing and post-perceptual judgments

Jelka Stojanov[1], Brian Parkinson[1]

[1]University of Oxford

1-B-46 Asymmetries in probabilistic category learning: On the stickiness of stereotypes

Yrian Derreumaux[1], Jacob Elder[1], Brent Hughes[1]

[1]University of California, Riverside

1-B-47 Do leaders of homogeneous groups feel guiltier over group-based transgressions?: An fMRI study

Zhiai Li[1], Hongbo Yu[2], Yongdi Zhou[1], Xiaolin Zhou[3]

[1]Shenzhen university, [2]University of California Santa Barbara, [3]Peking University

1-B-48 Doctor trustworthiness reduces pain and its neural correlates in virtual medical interactions

Steven Anderson[1], Morgan Gianola[1], Natalia Medina[1], Jenna Perry[1], Tor Wager[2], Elizabeth Reynolds Losin[1]

[1]University of Miami, [2]Dartmouth College

1-B-49 Social relationship strength modulates the interpersonal similarity of brain representations of group members

Taylor Guthrie[1], Robert Chavez[1]

[1]University of Oregon

1-B-50 Neural responses to anticipating vs. encoding minimal ingroup and outgroup faces

Youngki Hong[1], Matthew Mayes[1], Anudhi Munasinghe[1], Kyle Ratner[1]

[1]University of California Santa Barbara

1-B-51 Multiple neural routes for motivated reasoning in political partisans

Nir Jacoby[1], Jacob Parelman[2], Emily Falk[2], Emile Bruneau[2], Kevin Ochsner[1]

[1]Columbia University, [2]University of Pennsylvania

1-B-52 Threat and moral-emotional language drive neural divergence between conservatives and liberals during viewing of political videos

Yuan Chang Leong[1], Janice Chen[2], Robb Willer[3], Jamil Zaki[3]

[1]University of California, Berkeley, [2]Johns Hopkins University, [3]Stanford University

1-B-53 The dimensional structure of social relationship knowledge

Haroon Popal[1], Yin Wang[2], Mark Thornton[3], Ingrid Olson[1]

[1]Temple University, [2]Beijing Normal University, [3]Dartmouth College

1-B-54 Why criticizing one's morality may backfire: Self-report and ERP findings on the emotional and attentional responses to receiving negative social feedback

Inga Rösler[1], Félice van Nunspeet[2], Naomi Ellemers[2]

[1]University of Amsterdam, [2]Utrecht University

1-B-55 How are animate and inanimate categories differentiated in a pre-trained artificial neural network?

Abhijit Suresh[1], McKell R. Carter[1]

[1]University of Colorado Boulder

1-B-56 Intolerance to uncertainty modulates neural synchrony between political partisans

Jeroen van Baar[1], David Halpern[2], Oriel FeldmanHall[1]

[1]Brown University, [2]University of Pennsylvania

C - Basic Affect/Emotion

1-C-57 Freezing is associated with higher amygdala metabolism in female adolescent monkeys

Lillian Campos[1], Dan Holley[1], Yizi Zhang[2], John Capitanio[1], Andrew Fox[1]

[1]University of California, Davis, [2]Duke University

1-C-58 Physiological arousal pattern analysis: connecting moment-by-moment subjective experience with neuro- and peripheral physiological responding with the new EMAP database

Hedwig Eisenbarth[1], Matt Oxner[1], Harisu Abdullahi Shehu[1], Amy Walsh[2], Will Browne[1], Bing Xue[1]

[1]Victoria University of Wellington, [2]Karolinska Institutet

1-C-59 Neural correlates of the health benefits of gratitude

Laura Hazlett[1], Mona Moieni[1], Michael Irwin[1], Kate Byrne Haltom[1], Ivana Jevtic[1], Meghan Meyer[2], Elizabeth Breen[1], Steven Cole[1], Naomi Eisenberger[1]

[1]University of California, Los Angeles, [2]Dartmouth College

1-C-60 Associations between anticipatory threat responding, brain structure and puberty in Latina youth

Lucus Hodge[1], Jordan Mullins[1], Kalina Michalska[1]

[1]University of California, Riverside

1-C-61 A multi-layer network neuroscience investigation of the psychological state of flow

Richard Huskey[1], Justin Keene[2], Shelby Wilcox[3], Xuanjun Gong[1], Robyn Adams[3], Christina Najera[2]

[1]University of California, Davis, [2]Texas Tech University, [3]Michigan State University

1-C-62 Individual differences in anxious temperament relate to differences in brain morphometrics

Jessi Kane[1]

[1]University of Louisville

1-C-63 When self comes to a wandering mind: Brain representations and affective dynamics of spontaneous thought

Byeol Kim[1], Jessica Andrews-Hanna[2], Jihoon Han[1], Eunjin Lee[1], Choong-Wan Woo[1]

[1]Sungkyunkwan University, [2]University of Arizona

1-C-64 Free association-based dynamic signature of trait affectivity

Eunjin Lee[1], Byeol Kim[1], Jihoon Han[1], Sung-Ha Lee[2], Suhwan Gim[1], Incheol Choi[2], Choong-Wan Woo[1]

[1]Sungkyunkwan University, [2]Seoul National University

1-C-65 Interoceptive awareness: The bridge connecting the body to emotion

Kyle Logie[1], Norman Farb[1]

[1]University of Toronto

1-C-66 Ability to differentiate emotions buffers adolescents from the impact of stress

Erik Nook[1], John Flournoy[1], Alexandra Rodman[1], Patrick Mair[1], Katie McLaughlin[1]

[1]Harvard University

1-C-68 Dissociable signatures of dynamic autonomic activity are present during emotions and at rest

Lorenzo Pasquini[1], Fatemeh Noohibezanjani[1], Christina Veziris[1], Eena Kosik[1], Alex Lee[1], Jesse Brown[1], Sarah Holley[2], Bruce Miller[1], Manish Saggar[3], William Seeley[1], Virginia Sturm[1]

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1-C-69 The role of emotions in true and false autobiographical constructions

Ranchal Sabharwal[1], Alisha Holland[1]

[1]Teachers College Columbia University

1-C-70 7 Tesla fMRI replication and extension of the allostatic-interoceptive system in the resting brain

Tara Srirangarajan[1], Jiahe Zhang[2], Danlei Chen[2], Karen Quigley[2], Lawrence Wald[3], Tor Wager[4], Ajay Satpute[2], Lisa Feldman Barrett[2], Marta Biancardi[3]

[1]Stanford University, [2]Northeastern University, [3]Harvard Medical School, [4]Dartmouth College

1-C-71 Talking about fright club: Physiological and emotional arousal guide metacognition for naturalistic experiences

Joanne Stasiak[1], Chelsea Helion[1], Vishnu Murty[1], William Mitchell[1], Samantha Reisman[1], David Gregory[1]

[1]Temple University

1-C-73 Exploring how trait frontal activity and emotion states influence bio-markers of inhibition

Jordan Wylie[1], Justin Storbeck[2]

[1]The City University of New York, [2]Queens College

1-C-74 Affective information processing after insulectomy and temporal lobectomy in patients with epilepsy

Daphné Citherlet[1], Olivier Boucher[1], Victoria Gravel[1], Frédérique Roy-Côté[1], Dang Khoa Nguyen[2]

[1]University of Montreal, [2]Centre Hospitalier de l'Université de Montréal

1-C-75 Threat neurocircuitry predicts the development of anxiety and depression symptoms in a longitudinal study

Yujia Peng[1], Jeffrey Knotts[1], Katherine Young[2], Susan Bookheimer[1], Robin Nusslock[3], Richard Zinbarg[4], Michelle Craske[1]

[1]University of California, Los Angeles, [2]King's College London, [3]Northwestern University, [4]Northwestern University; The Family Institut

1-C-76 Influences of reward motivation on behavioral and neural memory processes across age

Alexandra Cohen[1], Morgan Glover[1], Xinxu Shen[1], Kristen Avallone[1], Camille Phaneuf[1], Lila Davachi[2], Catherine Hartley[1]

[1]New York University, [2]Columbia University

1-C-77 Neural representations of extinguished threat stimuli differ by age and social context

Dana Glenn[1], Megan Peters[2], Daniel Pine[3], Kalina Michalska[1]

[1]University of California, Riverside, [2]University of California, Irvine, [3]National Institute of Mental Health

1-C-78 Do You Feel How I Feel?: Developmental differences in affective neural representations

William Mitchell[1], Lindsey Tepfer[2], Nicole Henninger[1], Vishnu Murty[1], Chelsea Helion[1], Susan Perlman[3]

[1]Temple University, [2]Dartmouth College, [3]Washington University of St. Louis

1-C-79 Heightened parasympathetic tone predicts increased affective empathy in children with developmental dyslexia

Eleanor Palser[1], Nathaniel Morris[1], Ashlin Roy[1], Sarah Holley[2], Christina Veziris[1], Christa Watson[1], Jessica Deleon[1], Zachary Miller[1], Bruce Miller[1], Maria-Luisa Gorno-Tempini[1], Virginia Sturm[1]

[1]University of California San Francisco, [2]San Francisco State

1-C-80 Reading your emotions in my physiology? Reliable emotion interpretations in absence of a robust physiological resonance

Julia Folz[1], Donatella Fiacchino[1], Milica Nikolic[2], Henk van Steenbergen[1], Mariska Kret[1]

[1]Leiden University, [2]University of Amsterdam

1-C-81 Emotion in music-induced synesthesia

Cathy Lebeau[1], François Richer[1]

[1]UQÀM

1-C-82 Emotion dynamics are reflected in time-varying patterns of brain activation in cortical midline and subcortical regions

Matthew Sachs[1], Samantha Cohen[1], Kevin Ochsner[1], Christopher Baldassano[1]

[1]Columbia University

1-C-83 Behavioral, physiological, and neural signatures of surprise during naturalistic sports viewing

James Antony[1], Thomas Hartshorne[1], Ken Pomeroy[2], Todd Gureckis[3], Uri Hasson[1], Samuel McDougle[4], Kenneth Norman[1]

[1]Princeton University, [2]The Forecast Factory, LLC, [3]New York University, [4]Yale University

1-C-84 Affective value boosts neural signals of reward

James Cavanagh[1], Trevor Jackson[1], Samantha Nagel[1], Garima Singh[1], Chris Pirrune[1], Darin Brown[2]

[1]University of New Mexico, [2]Pitzer College

1-C-85 Prior discrimination and current affective context modulate Black individuals' neural representations of White faces

Gabriella Alvarez[1], Kristen Lindquist[1], Keely Muscatell[1]

[1]University of North Carolina Chapel Hill

1-C-86 Interactive effects of social context and emotions on a shared viewing experience

Sarah Dziura[1], Junaid Merchant[1], Deena Shariq[1], Adnan Rashid[2], Diana Alkire[1], Dustin Moraczewski[3], Elizabeth Redcay[1]

[1]University of Maryland, College Park, [2]Georgetown University, [3]National Institutes of Health

1-C-87 Inter-subject similarity in multi-voxel response pattern trajectories reflects similarities in preferences and personality

Ryan Hyon[1], Karina López[1], Elisa Baek[1], Mason Porter[1], Carolyn Parkinson[1]

[1]University of California, Los Angeles

1-C-88 Is motherhood a moderator of empathy for pain? An fMRI study

Irene Plank[1], Catherine Hindi Attar[2], Isabel Dziobek[3], Felix Bermpohl[2]

[1]Berlin School of Mind and Brain; Einstein Center for Neurosciences, [2]Charité - Universitätsmedizin Berlin, [3]Berlin School of Mind and Brain

1-C-89 The psychophysiology of guilt

Chloe Stewart[1], Elizabeth Finger[1]

[1]University of Western Ontario

1-C-90 Development and validation of a neuro-biologically informed measure of basic affect in social support

Lane Beckes[1], Rachel Gardetto[1], Sydney Ruggles[1], Christina Wiebmer[1], Sarah Jernberg[1], Madison Rodatz[1], Carlie Heaton[1], Daiyana Young[1], Sage Beckes[1]

[1]Bradley University

1-C-91 Extinction of fear and stability of anxiety: Findings using realistic stimuli

Sharon Chen[1], Tanaz Molapour[1], Virginia Fedrigo[2], Colin Camerer[1], Dean Mobbs[1]

[1]Caltech, [2]London School of Economics

1-C-92 Altered static and dynamic resting functional connectivity underlie enduring maternal grief for the loss of her child

Sarah Kark[1], Joren Adams[1], Mithra Sathishkumar[1], Liv McMillan[1], Steven Granger[1], Tallie Baram[1], Michael Yassa[1]

[1]University of California, Irvine

E - Clinical Disorders

1-E-108 The role of safety learning and cue saliency on anxiety-related overgeneralized fear

Hyein Cho[1], Boyang Fan[1], Qin Lin[1], Tracy Dennis-Tiwary[1]

[1]Hunter College

F - Social Cognition

1-F-125 Biological correlates of grandmaternal caregiving

James Rilling[1], Amber Gonzalez[1], Lynnet Richey[1], Minwoo Lee[1]

[1]Emory University

1-F-126 Differentiating the roles of social brain regions in processing third-person perspective social interaction

Qi Liang[1], Zhi-Xin Nie[1], Yu Liang[1], Shu-Guang Kuai[1]

[1]East China Normal University

G – Learning

1-G-199 The striatal reward response reflects goal updating

Ian Ballard[1], Mark D'Esposito[1]

[1]University of California, Berkeley

1-G-200 A multi-brain mechanism for observational threat learning

Yafeng Pan[1], Mikkel Vinding[1], Daniel Lundqvist[1], Andreas Olsson[1]

[1]Karolinska Institutet

1-G-201 Machine learning as an automated approach to scoring free recall of naturalistic stimuli

Xinxu Shen[1], Eliza Meketon[1], David Smith[1], Vishnu Murty[1]

[1]Temple University

1-G-202 The influence of reward-motivated memories on learning across development

Camille Phaneuf[1], Alexandra Cohen[1], Gail Rosenbaum[1], Morgan Glover[2], Kristen Avallone[1], Xinxu (Karen) Shen[3], Catherine Hartley[1]

[1]New York University, [2]Wayne State University, [3]Temple University

H – Development

1-H-72 Sex specific risk of child maladaptive behavior from in-utero exposure to natural disaster-related stress

Christine L Ginalis[1], Johnny A Lopez[1], Yoko Nomura[2]

[1]Queens College & The Graduate Center, CUNY, [2]The Graduate Center, CUNY

1-H-203 Assessing neural maturity and social cognitive development with inter-subject synchronization

Amalia McDonald[1], Jessica Connelly[1], James Morris[1]

[1]University of Virginia

1-H-204 Attention bias and neural correlates of arousal in school-aged children

Mariya Chernenok[1], Jessica Burris[2], Susan Rivera[1], Lindsay Bowman[1]

[1]University of California-Davis, [2]Rutgers University

1-H-205 Hippocampal CA subfield structure tracks perceived family dynamics in a normative developmental sample

Eliya Ben-Asher[1], Christine Coughlin[1], Hannah Roome[1], Nicole Varga[1], Alison Preston[1]

[1]University of Texas at Austin

1-H-206 Probing neural mechanisms underlying sensory processing as a link between early experience and affective development

Adriana Sofia Méndez Leal[1], João Guassi Moreira[1], Yael Waizman[1], Natalie Saragosa-Harris[1], Emilia Ninova[1], Jennifer Silvers[1]

[1]University of California, Los Angeles

1-H-207 Synergistic effects of trauma on oxytocin receptor gene expression in human placenta

Patricia Pehme[1], Yoko Nomura[1]

[1]The Graduate Center, CUNY

I - Emotion Perception / Communication

1-I-208 Mu rhythm suppression over sensorimotor regions is associated with greater empathic accuracy

Shir Genzer[1], Desmond Ong[2], Jamil Zaki[3], Anat Perry[1]

[1]The Hebrew University of Jerusalem, [2]National University of Singapore, [3]Stanford University

K - Prosocial Behaviour

1-K-220 Neural patterns of positive and negatively valenced social media charity appeals

Elizabeth Beard[1], Nicole Henninger[1], Logan Bennett[1], Chelsea Sposit[1], Mariah Goldsmith[1], Joan Nicholson[1], Vinod Venkatraman[1]

[1]Temple University

1-K-221 Ageing disrupts reinforcement learning whilst learning to help others is preserved

Jo Cutler[1], Marco Wittmann[2], Ayat Abdurahman[3], Luca Hargitai[2], Daniel Drew[2], Masud Husain[2], Patricia Lockwood[1]

[1]The University of Birmingham, [2]The University of Oxford, [3]The University of Cambridge

1-K-222 The neurodevelopment of prosocial behavior in adolescence

Lee Lazar[1], Maira Karan[1]

[1]University of California, Los Angeles

1-K-223 Threat increases cooperation

Maria Lojowska[1], Zsombor Méder[1], Jörg Gross[1], Carsten K.W. de Dreu[2]

[1]Leiden University, [2]Leiden University and University of Amsterdam

1-K-224 Skin conductance response to conditioned threat cues predicts children's later cooperation during an iterated Prisoner's Dilemma Game

Jordan Mullins[1], Dana Glenn[1], Meia Chita-Tegmark[2], Peter Blake[3], Kalina Michalska[1]

[1]University of California, Riverside, [2]Tufts University, [3]Boston University

1-K-225 Do you lead or Do you follow? Neurophysiological correlates of leaders and followers in a purely cooperative decision-making task

Unai Vicente[1], Josep Marco-Pallarés[1], Alberto Ara[1]

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1-K-226 Testosterone reduces generosity through cortical and subcortical mechanisms

Jianxin Ou[1]

[1]Shenzhen University, China

M - Stress

1-M-231 The effects of depression and perceived stress on behavioral pattern separation

Daniel Grupe[1], Nate Vack[1], Dan Fitch[1], Richard Davidson[1]

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Poster Session #2

Friday, April 30, 2021 | 2:45 - 3:45pm PDT

A - Decision-Making

2-A-10 Computational principles of subjective value construction

Kiyohito Iigaya[1], Sanghyun Yi[1], Iman Wahle[1], Sandy Tanwisuth[1], Aniek Fransen[1], John O'Doherty[1]

[1]Caltech

2-A-11 Dissociable roles of medial prefrontal cortex subregions in conformity to social hierarchy under public eyes

Daeeun Kim[1], Juyoung Kim[1], Hackjin Kim[1]

[1]Korea University

2-A-12 Pavlovian bias interferes with instrumental learning to aversive outcomes during adolescence

Ian O'Shea[1], Vishnu Murty[2], Juliet Davidow[1], Alexander Millner[3]

[1]Northeastern University, [2]Temple University, [3]Harvard University

2-A-13 Identity-specific representation of social rewards in orbitofrontal cortex

James Thompson[1], Eslam Hassan[1], Lindsay Shaffer[1]

[1]George Mason University

2-A-14 Are you sure about that? Alexithymia and decision-making under uncertainty

Nathan Torunsky[1], Iris Vilares[1]

[1]University of Minnesota - Twin Cities

2-A-15 Consumer Influence: The relationship between self-construal, gender and neural processes associated with conforming to consumer recommendations

Arina Tveleneva[1], Christin Scholz[2], Emily Falk[3], Matthew Brook O'Donnell[3], Christopher Cascio[1]

[1]University of Wisconsin-Madison, [2]University of Amsterdam, [3]University of Pennsylvania

2-A-16 Socially shared down-regulation of prefrontal control predicts intergroup hostility

Jiaxin Yang[1], Hejing Zhang[1], Jun Ni[1], Yina Ma[1]

[1]Beijing Normal University

2-A-17 The Face value of Feedback: Facial behavior is shaped by goals and punishment in interactive dyads

Jonathan Yi[1], Philip Pärnamets[1], Andreas Olsson[1]

[1]Karolinska Institutet

2-A-18 Turning feelings into action: Affective valence temporally precedes value

Ian Roberts[1], Azadeh HajiHosseini[1], Cendri Hutcherson[1]

[1]University of Toronto

2-A-19 To be honest: modelling the impact of social norms and antisocial traits on dishonesty

Anastasia Shuster[1], Madeline O'Brien[1], Sarah Banker[1], Vincenzo Fiore[1], Soojung Na[1], Xiaosi Gu[1]

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2-A-20 Neural adaptability and the development of risky decision-making

Joao Guassi Moreira[1], Adriana Mendez-Leal[1], Yael Waizman[1], Natalie Saragosa-Harris[1], Emilia Ninova[1], Jennifer Silvers[1]

[1]University of California, Los Angeles

2-A-21 Adolescent reward related activity to alcohol cues is associated with past alcohol use and predicts intentions and willingness to use alcohol

Allison Londeree[1], Dylan Wagner[1], Christopher Browning[1], Bethany Boettner[1], Baldwin Way[1]

[1]The Ohio State University

2-A-22 Understanding the roles of novelty and uncertainty in exploration across development

Rebecca Martin[1], Catherine Hartley[1]

[1]New York University

2-A-23 The development of corticostriatal connectivity and goal-directed learning across adolescence

Gail Rosenbaum[1], Pablo Ripolles[1], Catherine Hartley[1]

[1]New York University

2-A-24 The impact of threat expectation on the behavior and neural mechanisms of perceptual decision making

Nadia Haddara[1], Dobromir Rahnev[1]

[1]Georgia Tech

2-A-25 Reward supports higher-order reorganization of episodic memory via consolidation

Vishnu Murty[1]

[1]Temple University

2-A-26 Social discounting in extraordinary, real-world altruists and in individuals who completed Metta meditation training

Shawn Rhoads[1], Katherine O'Connell[1], Kathryn Berluti[1], Montana Ploe[1], Hannah Elizabeth[1], Abigail Marsh[1]

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2-A-27 When your outcomes become my rewards: Individual differences in the neural representation of others' outcomes drives prosociality (or antisociality)

Anthony Romyn[1], Nathan Arbuckle[2], William Cunningham[1]

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2-A-28 Neural correlates of individual differences in moral judgment

Frederic Hopp[1], Jacob Fisher[2], Ori Amir[3], Rene Weber[1]

[1]University of California, Santa Barbara, [2]University of Illinois, Urbana-Champaign, [3]N/A

2-A-29 A preference for conformity in moral and monetary gambling

Sherry Yueyi Jiang[1], Arseny Ryazanov[1], Piotr Winkielman[1]

[1]University of California San Diego

2-A-30 Neural mechanisms tracking peer susceptibility to social drinking

Mia Jovanova[1], Ovidia Stanoi[2], Christin Scholz[3], David Lydon-Staley[4], Bruce Dore[5], Yoona Kang[1], Dani Cosme[1], Peter Mucha[6], Danielle Bassett[1], Kevin Ochsner[2], Emily Falk[1]

[1]University of Pennsylvania, [2]Columbia University, [3]University of Amsterdam, [4]Annenb

2-A-31 Neural representations of others' traits during social decision-making

Kenji Kobayashi[1], Dilara Berkay[1], Joseph Kable[1], Ming Hsu[2], Adrianna Jenkins[1]

[1]University of Pennsylvania, [2]University of California, Berkeley

2-A-33 Reduced body ownership increases dishonesty: Evidence from an immersive virtual reality study

Marina Scattolin[1], Maria Panasiti[2], Riccardo Villa[1], Salvatore Aglioti[1]

[1]Sapienza University & CLNS@Sapienza Italian Institute of Technology; IRCCS Santa Lucia Foundation, [2]Sapienza University; IRCCS Santa Lucia Foundation

2-A-6 Arousal modulates dynamic decision parameters of attention in risky choice

Abdelaziz Alsharawy[1], Xiaomeng Zhang[1], Sheryl Ball[1], Alec Smith[1]

[1]Virginia Tech

2-A-7 How optimism bias relates to tolerance of uncertainty in decision making

Darla Bonagura[1], Alexandra Mellis[2], Anna Konova[1]

[1]Rutgers University, [2]New York University

2-A-8 Neural mechanisms underlying economic inequality-induced increases in risk-taking

Samantha Brosso[1], Jason Hannay[1], Saif Mehyar[2], Keith Payne[1], Keely Muscatell[1]

[1]University of North Carolina at Chapel Hill, [2]Duke University

2-A-9 Rationalizing vs. Mentalizing: The role of probabilistic reasoning in competitive decision making

Yibei Chen[1], Sungbin Youk[1], Paola Pinti[2], Paula Wang[1], Rene Weber[1]

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D - Emotion Regulation

2-D-100 The effects of mindfulness, empathy, and altruism on emotional reactivity

Emerald Saldyt[1], Esmeralda Lopez[1], Katie Feldt[1], David Albeck[1]

[1]University of Colorado, Denver

2-D-101 Connecting cognition, cardiology, and chromosomes: Cognitive reappraisal impacts the relationship between heart rate variability and telomere length in CD8+CD28- cells

Anoushka Shahane[1], Angie LeRoy[1], Bryan Denny[1], Christopher Fagundes[1]

[1]Rice University

2-D-102 Dynamic functional connectivity underlying modulation of negative emotion associated with affective empathy

Teodora Stoica[1]

[1]University of Louisville

2-D-103 Decoding moment-to-moment interoceptive attention using fMRI BOLD signals

Zoey Zuo[1], Gunes Sevinc[2], Cynthia Price[3], Norman Farb[4]

[1]University of Toronto Scarborough, [2]Massachusetts General Hospital & Harvard Medical School, [3]School of Nursing & Osher Center for Integrative Medicine, University of Washington, [4]University of Toron

2-D-104 Transcranial direct current stimulation over prefrontal cortex in depression modulates cortical excitability in emotion regulation regions as measured by concurrent functional magnetic resonance imaging

Evangelia Chrysikou[1], Erik Wing[2], Wessel van Dam[1]

[1]Drexel University, [2]Minneapolis VA Health Care System

2-D-105 Does early adversity alter neural responses to ambiguous stimuli?

Natalie Saragosa-Harris[1], João Guassi Moreira[1], Adriana Méndez Leal[1], Yael Waizman[1], Emilia Ninova[1], Jennifer Silvers[1]

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2-D-106 An affective neuroscience model of boosting resilience in adults

Golnaz Tabibnia[1]

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2-D-96 Dual mechanisms of cognitive control in emotion regulation: Temporal differences in effort and efficacy of reappraisal use across age

Elizabeth Alwan[1], Clara DeFontes[1], Parker Longwell[1], Irina Orlovsky[1], Bruna Martins-Klein[1]

[1]University of Massachusetts Amherst

2-D-97 Behavioral and neural effects of choice on appetitive self-regulation: An experimental test of self-determination theory

Danielle Cosme[1], Arian Mobasser[2], Garrett Ross[3], Dasa Zeithamova[2], Elliot Berkman[2], Jennifer Pfeifer[2]

[1]University of Pennsylvania, [2]University of Oregon, [3]University of Florida

2-D-98 Psychological distancing usage uniquely predicts reduced perceived stress during the COVID-19 pandemic

Eva Dicker[1], Jenna Jones[1], Bryan Denny[1]

[1]Rice University

2-D-99 Related neural networks underlie suppression of emotion, memory, motor processes as identified by data-driven analysis

Karisa Hunt[1], Brendan Depue[1]

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E - Clinical Disorders

2-E-109 Sudden gains and losses predict efficacy of attention bias modification

Hyein Cho[1], Yue Li[2], Samantha Denefrio[1], Tracy Dennis-Tiwary[1]

[1]Hunter College, [2]Teachers College

2-E-110 Sex differences in the underlying neural correlates associated with symptoms of Generalized Anxiety Disorder (GAD)

Devyn Cotter[1], Anisa Azad[1], Megan Herting[1]

[1]University of Southern California

2-E-111 Maximizing the benefits of gamified mobile attention bias modification via tDCS

Tracy Dennis-Tiwary [1], Sarah Myruski[1], Hyein Cho[1], Marom Bikson[2]

[1]Hunter College, [2]City College

2-E-112 Prosocial learning and decision-making in young adults with alcohol use disorder

Simon Jangard[1], Björn Lindström[2], Lotfi Khemiri[1], Nitya Jayaram-Lindström[1], Andreas Olsson[1]

[1]Karolinska Institutet, [2]VU Amsterdam

2-E-113 Lack of latent structure across levels of measurement of positive and negative valence processing in mood and anxiety disorders

JD Knotts[1], Yujia Peng[1], Charles Taylor[3], Michelle Craske[1], Murray Stein[3], Susan Bookheimer[1], Katherine Young[4], Alan Simmons[5], Yeh Hung-Wen[6], Julian Ruiz[1], Martin Paulus[6]

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2-E-114 Event-related potential responses to peer acceptance and rejection and their behavioral and psychiatric correlates

Brent Rappaport[1], Autumn Kujawa[2], Danielle Kelly[1], Samantha Pegg[2], Joan Luby[1], Deanna Barch[1]

[1]Washington University in St. Louis, [2]Vanderbilt University

2-E-115 Reduced multi-voxel pattern similarity of vicarious neural pain responses in psychopathy

Kathryn Berluti[1], Katherine O'Connell[1], Shawn Rhoads[1], Kristin Brethel-Haurwitz[2], Elise Cardinale[3], Kruti Vekaria[4], Emily Robertson[5], John VanMeter[1], Abigail Marsh[1]

[1]Georgetown University, [2]University of Pennsylvania, [3]National Institute of Mental Health

2-E-116 Emotion recognition impairments and social well-being after right-hemisphere stroke

Katherine O'Connell[1], Abigail Marsh[1], Anna Greenwald[2]

[1]Georgetown University, [2]Georgetown University Medical Center

2-E-117 A neurocomputational account of the mechanisms underlying face perception biases in depression

Fabian Soto[1], Rochelle Stewart[2], S. Sanaz Hosseini[1], Jason Hays[1], Christopher Beevers[1]

[1]Florida International University, [2]University of Texas at Austin

2-E-118 A neurocomputational model of hippocampal field CA1 during context fear conditioning

Sanjay Narasiwodeyar[1], Fabian Soto[1]

[1]Florida International University

2-E-119 Cognitive and perceptual load have opposing effects on brain network efficiency and task performance in ADHD

Jacob Fisher[1], Frederic Hopp[2], René Weber[2]

[1]University of Illinois, Urbana-Champaign, [2]University of California, Santa Barbara

2-E-120 Social cognitive performance in schizophrenia spectrum disorders compared with autism spectrum disorder: A systematic review, meta-analysis, and meta-regression

Lindsay Oliver[1], Iska Moxon-Emre[1], Meng-Chuan Lai[1], Laura Grennan[1], Aristotle Voineskos[1], Stephanie Ameis[1]

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2-E-121 Broken mirrors or STORMy interactions? An investigation of mirror system (dys)function in ASD

Jellina Prinsen[1], Kaat Alaerts[1]

[1]KU Leuven

2-E-122 Hippocampal threat reactivity interacts with defensive behaviors to predict PTSD symptomatology

Busra Tanriverdi[1], David Gregory[1], Timothy Ely[2], Nathaniel Harnett[3], Sanna van Rooij[2], Lauren Lebois[3], Tanja Jovanovic[4], Kerry Ressler[3], Jennifer Stevens[2], Vishnu Murty[1]

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F - Social Cognition

2-F-127 Mapping the self: A network approach to understanding behavioral and neural representations of self-concept structure

Jacob Elder[1], Bernice Cheung[2], Tyler Davis[3], Brent Hughes[1]

[1]University of California, Riverside, [2]University of Oregon, [3]Texas Tech

2-F-128 Prospective, longitudinal subcortical grey matter volume change in first-time fathers across two samples

Darby Saxbe[1], Magdalena Martínez-García[2], Maria Paternina-Die[2], Ines Noguero Soler[2], Hannah Khoddam[1], Sarah Stoycos[1], Elseline Hoekzema[3], Oscar Vilarroya[4], Susana Carmona Cañabate[2]

[1]University of Southern California, [2]Instituto de Investigación Sanitaria

I - Emotion Perception / Communication

2-I-209 The contributions of emotion content and personal experience to shared neural dynamics during empathy

Shannon Burns[1], Lianne Barnes[2], Matthew Lieberman[3]

[1]University of Pennsylvania, [2]University of Nevada Las Vegas, [3]University of California, Los Angeles

2-I-210 Autistic traits, altruism, and emotional processing

Jeremiah Hartzell[1], Emerald Saldyt[1], David Albeck[1]

[1]University of Colorado, Denver

2-I-211 Neural circuity underlying individual differences in context-dependent facial emotion reading

Kun Il Kim[1], Nuri Kim[1], Wi Hoon Jung[2], Hackjin Kim[1]

[1]Korea University, [2]Daegu University

2-I-212 Neural signatures differentiating self-relevance and valence predict receptivity and adherence to health messages

Bradley Mattan[1], Nicole Cooper[1], Christin Scholz[2], Yoona Kang[1], Emily Falk[1]

[1]University of Pennsylvania, [2]University of Amsterdam

2-I-213 Interoceptive predictive coding and emotion perception: Precise predictions increase the biasing effect of own pain on perception of another's pain

Leora Sevi[1], Mirta Stantic[1], Jennifer Murphy[2], Michel-Pierre Coll[3], Caroline Catmur[4], Geoffrey Bird[1]

[1]University of Oxford, [2]University of London, [3]McGill University, [4]King's College London

2-I-214 Clicking in conversation: Short gaps between turns signal social connection

Emma Templeton[1], Luke Chang[1], Thalia Wheatley[1]

[1]Dartmouth College

2-I-215 Modal and supramodal representations of emotion inference

Marianne Reddan[1], Desmond Ong[2], Alison Mattek[3], Isabella Kahhale[4], Jamil Zaki[1]

[1]Stanford University, [2]National University of Singapore, [3]University of Oregon, [4]University of Pittsburgh

J - Network Science

2-J-218 Fronto-parietal and reward networks are integrated during the psychological state of flow

Xuanjun Gong[1], Richard Huskey[1]

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2-J-219 Does healthy body come with a healthy brain? An exploration with the functional connectivity of the whole-brain network

Qinggang Yu[1], Shinobu Kitayama[1]

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Poster Session #3

Saturday, May 1, 2021 | 7:15 - 8:15am PDT

A - Decision-Making

3-A-35 Defensive freezing and its relation to approach-avoidance decision-making under threat

Felix Klaassen[1], Leslie Held[1], Bernd Figner[2], Jill O'Reilly[3], Floris Klumpers[1], Lycia de Voogd[1], Karin Roelofs[1]

[1]Donders Institute, Radboud University, [2]Behavioural Science Institute, Radboud University, [3]University of Oxford

3-A-36 Asymmetries in moral decision making: psychological and neural processes underlying unequal allocation of reward and harm to self and others

Benjamin Welborn[1], Matthias Gobel[2], Lukas Volz[3]

[1]University of East Anglia, [2]University of Exeter, [3]University of Cologne

3-A-37 Endogenous cortisol predicts gender-specific leading behaviors during intergroup conflict

Jiaxin Yang[1], Hejing Zhang[1], Jun Ni[1], Yina Ma[1]

[1]Beijing Normal University

3-A-38 Sex differences in economic decision-making: estradiol has opposing effects on fairness sensitivity in women and men

Marie Coenjaerts[1], Frederike Pape[1], Virginia Santoso[1], Franziska Grau[1], Birgit Stoffel-Wagner[2], Alexandra Philipsen[2], Johannes Schultz[2], René Hurlemann[3], Dirk Scheele[2]

[1]University Hospital Bonn, [2]University of Bonn, [3]University of Oldenburg

3-A-39 The powerful are driven to pursue rewards

Enru Lin[1], Petra Schmid[1]

[1]ETH Zurich

C - Basic Affect/Emotion

3-C-93 Expectancy and attention bias in phylogenetic vs. ontogenetic stimuli

Elinor Abado[1], Tatjana Aue[2], Jan De Houwer[3], Hadas Okon-Singer[1]

[1]University of Haifa, [2]University of Bern, [3]Ghent University

3-C-94 Modulation of activity of the sympathetic nervous system by mortality salience

Guo Zheng[1], Tianyu Gao[1], Yue Pu[1], Lihan Chen[1], Shuchang He[1], Shihui Han[1]

[1]Peking University

3-C-95 Threat imminence facilitates care-motivated helping in dangerous contexts

Joana Vieira[1], Erik Enström[1], Andreas Olsson[1]

[1]Karolinska Institutet

D - Emotion Regulation

3-D-107 Dog fMRI reveals impulsivity-dependent neural reward response and motor inhibition

Attila Andics[1], Anna Gábor[1], Nóra Bunford[1], Márta Gácsi[1]

[1]Eötvös Loránd University (ELTE)

E - Clinical Disorders

3-E-124 Biased distance estimation in social anxiety disorder: A new avenue for understanding avoidance behavior

Nur Givon-Benjio[1]

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F - Social Cognition

3-F-129 Empathy moderates neural correlates associated with conformity

Paul Hangsan Ahn[1], Sara Konrath[2], Matthew O'Donnell[3], Emily Falk[3], Christopher Cascio[1]

[1]University of Wisconsin-Madison, [2]Indiana University & Purdue University Indianapolis, [3]University of Pennsylvania

3-F-130 An investigation of the underlying neural mechanisms of social anxiety and intolerance of uncertainty

Alisha Arora[1], Tessa Clarkson[1], Yi Yang[1], Johanna Jarcho[1]

[1]Temple University

3-F-131 Social contexts alter task-appropriate neural reconfiguration during problem-solving

Robert Backer[1], Mengting Liu[2], Chad Forbes[1]

[1]University of Delaware, [2]University of Southern California

3-F-132 Lonely individuals process the world in idiosyncratic ways

Elisa Baek[1], Ryan Hyon[1], Karina Lopez[1], Mason Porter[1], Carolyn Parkinson[1]

[1]University of California, Los Angeles

3-F-133 Disentangling neural activation to self and others using structural connectivity

Youri Benadjaoud[1], Taylor Guthrie[1], Robert Chavez[1]

[1]University of Oregon

3-F-134 Modeling social attention with functional connectivity in the human brain

Samantha Brindley[1], Meghan Puglia[1], James Morris[1]

[1]University of Virginia

3-F-135 Narrative transportation is associated with greater similarity in brain states over time during naturalistic viewing

Timothy Broom[1], Dylan Wagner[1]

[1]The Ohio State University

3-F-136 Addressing valuation and decision-making confounds in studies of self-referential processing

Samantha Chavez[1], Theresa Cheng[1], Jennifer Pfeifer[1], Michelle Byrne[2]

[1]University of Oregon, [2]Monash University

3-F-137 Valence modulates self/other neural recapitulation during interpersonal perception

Faith Collins[1], Taylor Guthrie[1], Moriah Stendel[1], Robert Chavez[1]

[1]University of Oregon

3-F-138 Peer perceptions of neuroticism and their influence on friendship and the brain

Ryan Conaghan[1], Taylor Guthrie[1], Moriah Stendel[1], Robert Chavez[1]

[1]University of Oregon

3-F-139 Hyperscanning: A valid method to study neural inter-brain underpinnings of social interaction

Artur Czeszumski[1], Peter König[1]

[1]University of Osnabrück

3-F-140 Dissociating neural sensitivity to target identity and mental state content type during inferences about other minds: An ALE meta-analysis

Ana Defendini[1], Adrianna Jenkins[1]

[1]University of Pennsylvania

3-F-141 Comparing functional connectivity while shifting attention in physical space and social knowledge

Meng Du[1], Ruby Basyouni[1], Carolyn Parkinson[1]

[1]University of California, Los Angeles

3-F-142 The effect of language-induced emotions in moral decision making in autism

Sol Fittipaldi[1], Joaquin Migeot[2], Matías Cadaveira[3], Agustín Ibáñez[1], Sandra Báez[4]

[1]Universidad de San Andrés, [2]Universidad Adolfo Ibáñez, [3]Casa Abanico, [4]Universidad de los Andes

3-F-143 The irony of racial colorblindness: Behavioral and psychophysiological measures of attentional bias to black and white male stimuli

Alejandro Heredia Cedillo[1], Andre Oliver[2], Avi Ben-Zeev[1], Mark Geisler[1]

[1]San Francisco State University, [2]City University New York

3-F-144 Political views shape the brain response to political content

Noa Katabi[1], Hadas Simon[1], Inbal Ravreby[1], Sharon Yakim[1], May Blechman[1], Noam Edelshtein[1], Yaara Yeshurun[1]

[1]Tel-Aviv University

3-F-145 Neural representation in MPFC reveals hidden selfish motivation in white lies
Juyoung Kim[1], Hackjin Kim[1]
[1]Korea University

3-F-146 A common oxytocin receptor gene (OXTR) polymorphism modulates the neural response to social misalignment
Minwoo Lee[1], Adriana Lori[1], Nicole Langford[1], James Rilling[1]
[1]Emory University

3-F-147 Social cerebellum in goal-directed navigation
Meijia Li[1], Frank Van Overwalle[1]
[1]Vrije Universiteit Brussel

3-F-148 The neural bases underlying the impact of other's experience on individual's risk-taking behavior
Shuang Li[1], Jialin Xu[1], Xue Weng[1], Zhiyuan Liu[2]
[1]East China Normal University, [2]Shaanxi Normal University

3-F-149 Role of the medial prefrontal cortex in forming impression and guiding social interaction based on other's social behavior
Gahyun Lim[1], Hackjin Kim[1]
[1]Korea University

3-F-150 The degree of intimacy in social comparison modulates the neural responses to regret
Sijia Liu[1], Yubin Sun[1], Xue Weng[1], Zhiyuan Liu[2]
[1]East China Normal University, [2]Shaanxi Normal University

3-F-151 Through the looking glass: Distinguishing neural correlates of relational and non-relational self and person perception
Elizabeth Long[1], Nathan Wheeler[1], William Cunningham[1]
[1]University of Toronto

3-F-152 The posterior cerebellum supports implicit learning of true and false belief sequences
Qianying Ma[1], Frank Van Overwalle[1]
[1]Vrije Universiteit Brussel

3-F-153 Does autobiographical memory play a causal role in empathy
Federica Meconi[1]
[1]University of Birmingham

3-F-154 Unique cerebello-cerebral effective and structural connectivity in mentalizing
Athanasia Metoki[1], Yin Wang[2], Ingrid Olson[3]
[1]Temple University, Department of Psychology, [2]Beijing Normal University, [3]Temple University

3-F-155 Associative and inferential computational accounts of reversal learning in social and impersonal contexts as a function of pre-existing paranoia
Joseph Barnby[2], Vaughan Bell[2], Mitul Mehta[2], Michael Moutoussis[1]
[1]University College London, [2]Institute of Psychiatry, Psychology & Neuroscience, King's College London

3-F-156 Social bonding modulates top-down neural alignment of inter-status synchrony
Jun Ni[1], Jiaxin Yang[1], Hejing Zhang[1], Yina Ma[1]
[1]Beijing Normal University

3-F-157 The brain basis of self: A meta-analytic review
Michael Parrish[1], Jessica Quach[1], Nancy Gomez Juarez[1], Matthew Lieberman[1], Naomi Eisenberger[1]
[1]University of California, Los Angeles

3-F-158 The posterior cerebellum and inconsistent trait implications when learning the sequence of actions
Min Pu[1], Qianying Ma[1], Elien Heleven[1], Naem Haihambo[1], Frank Van Overwalle[1]
[1]Vrije Universiteit Brussel

3-F-159 Human face-selective cortex does not distinguish between members of a racial outgroup
Niv Reggev[1], Kirstan Brodie[2], Mina Cikara[2], Jason Mitchell[2]
[1]Ben Gurion University, [2]Harvard University

3-F-161 Probing the connection between facial mimicry and visual processing of emotional faces
Arianna Schiano Lomoriello[1], Antonio Maffei[2], Sabrina Brigadoi[3], Chiara Cantoni[4], Paola Sessa[3]
[1]DTU, [2]University of Padova, [3]Università of Padova, [4]Rome Sapienza

3-F-162 Self-esteem modulates self/other neural pattern correspondence during interpersonal perception
Moriah Stendel[1], Taylor Guthrie[1], Robert Chavez[1]
[1]University of Oregon

3-F-163 Neural and emotional response to political tweets interferes with subsequent cognitive performance
Sarah Tashjian[1], Adriana Galván[2]
[1]California Institute of Technology, [2]University of California, Los Angeles

3-F-164 Investigating the neural pattern structure of facial age & gender
Monica Thieu[1], Kevin Ochsner[1]
[1]Columbia University

3-F-165 Universal dimensions characterize how people understand others' minds across modern and historical cultures

Mark Thornton[1], Sarah Wolf[2], Brian Reilly[3], Edward Slingerland[4], Diana Tamir[5]

[1]Dartmouth College, [2]Jewish Theological Seminary, [3]Fordham University, [4]University of British Columbia, [5]Princeton University

3-F-166 Investigating neural dynamics during real-time conversations with fMRI hyperscanning

Lily Tsoi[1], Diana Tamir[1]

[1]Princeton University

3-F-167 Cerebellar Crus II is specialized for social mentalizing and emotional self-experiences: A meta-analysis

Frank Van Overwalle[1], Qianying Ma[1], Elien Heleven[1]

[1]Vrije Universiteit Brussel

3-F-168 Neural encoding of new social network structures

Miriam Weaverdyck[1], Meng Du[1], Pratishta Natarajan[1], John Andrew Chwe[2], Carolyn Parkinson[1]

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3-F-169 Neural correlates underlying understanding emotional words in late childhood

Peiwen Yeh[1], Chia-Ying Lee[2], Chung-Hsin Chiang[1]

[1]Kaohsiung Medical University, [2]Academia Sinica

3-F-170 Neural and social correlates of attitudinal brokerage: using complete social networks of two entire villages

Yoosik Youm[1], Junsol Kim[1]

[1]Yonsei University

3-F-171 Grateful to Robin Hood? Moral evaluation of benefactor's behavior modulates the experience and neural processing of gratitude

Li Zhang[1], Hongbo Yu[2], Xiaolin Zhou[3]

[1]Shanghai University of Sport, [2]University of California Santa Barbara, [3]Peking University

3-F-172 A bivariate latent change score model of individual differences and developmental changes in perspective-taking in adolescent girls

Victoria Guazzelli Williamson[1], Marjolein Barendse[1], Samantha Chavez[1], John Flournoy[2], Kathryn Mills[1], Theresa Cheng[1], Danielle Cosme[3], Michelle Byrne[4], Jennifer Pfeifer[1]

[1]University of Oregon, [2]Harvard University, [3]University of Pennsylvania, [4]Monash Un

3-F-173 Neural differences in being right versus being rewarded: Effects of age and memory across development

Camille Johnston[1], Megan Quarmley[1], Yvette Karvay[2], Brady Nelson[3], Chelsea Helion[1], Vishnu Murty[1], Johanna Jarcho[1]

[1]Temple University, [2]Fordham University, [3]Stony Brook University

3-F-174 Neural sensitivity to social status and adolescent social functioning

Nathan Jorgensen[1], Natasha Duell[1], Mitchell Prinstein[1], Kristen Lindquist[1], Eva Telzer[1]

[1]University of North Carolina at Chapel Hill

3-F-175 Does social feedback valence change the underlying processes associated with conformity?

Matt Minich[1], Matthew O'Donnell[2], Emily Falk[2], Christopher Cascio[1]

[1]University of Wisconsin-Madison, [2]University of Pennsylvania

3-F-176 Physical effort exertion for peer feedback reveals evolving social motivations from adolescence to young adulthood

Alexandra Rodman[1], Katherine Powers[1], Erik Kastman[1], Katherine Kabotyanski[1], Abigail Stark[1], Patrick Mair[1], Leah Somerville[1]

[1]Harvard University

3-F-177 The link between autistic-like traits and neural representations of social interactions is moderated by GABA signalling

Johannes Schultz[1], Carolina Beckenkamp[2], Torge Dellert[2], Ann-Kathrin Kreuder[1], Dirk Scheele[1], Mari Babasiz[1], Laura Remmersmann[1], Rüdiger Stirnberg[3], Tony Stöcker[3], René Hurlemann[4]

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3-F-178 Context guides the neural representation of facial emotion categories

Jeffrey Brooks[1], Ryan Stolier[2], Jonathan Freeman[1]

[1]New York University, [2]Columbia University

3-F-179 Facial and neural mechanisms during interactive disclosure of biographical information

Roser Cañigueral[1], Xian Zhang[2], J. Adam Noah[2], Ilias Tachtsidis[1], Antonia Hamilton[1], Joy Hirsch[2]

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3-F-180 The paradoxical role of emotional intensity in the perception of vocal affect

Natalie Holz[1], Pauline Larrouy-Maestri[1], David Poeppel[2]

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3-F-181 Developmental change in neural response to vocal emotional information in adolescence

Michele Morningstar[1], Whitney Mattson[2], Connor Grannis[2], Roberto French[2], Andy Hung[2], Eric Nelson[2]

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3-F-182 Towards an EEG biomarker of stimulus significance

Harald Schupp[1]

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Kristin Shumaker[1], Matthew O'Donnell[1], Melis Cakar[2], Emily Falk[1], Yoona Kang[1]

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3-F-184 Social sharing of positive autobiographical memories changes how we remember the past

Megan Speer[1], Fernanda Bonda[2], Christine Garcia[2], Vivien Garcia[2], Kevin Ochsner[1], Mauricio Delgado[2]

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3-F-185 The neural mechanisms underlying the influence of self affective states on empathic responses

Zhilin Su[1], Ming-Tsung Tseng[1]

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Rene Weber[1], Frederic Hopp[1], Jacob Fisher[2], Yibei Chen[1]

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Sophie Wohltjen[1], Thalia Wheatley[1]

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Ian Frazier[1], Damian Stanley[2]

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Kirsty Griffiths[1], Jason Stretton[2], Tim Dalgleish[1]

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3-F-190 How do we learn what others think of us? Neural correlates of memory for social feedback

Sasha Brietzke[1], Klara Barbarossa[1], Meghan Meyer[1]

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3-F-191 Being the gatekeeper: How neural encoding of information is affected durng sharing decisions

Hang Yee Chan[1], Christin Scholz[1], Elisa Baek[2], Matthew O'Donnell[3], Emily Falk[3]

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3-F-192 Parallel networks dissociate social from episodic functions across distributed cortical regions within individuals

Lauren DiNicola[1], Rodrigo Braga[2], Randy Buckner[1]

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Eshin Jolly[1], Luke Chang[1]

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Laetitia Mwilambwe-Tshilobo[1], Nathan Spreng[1]

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Ovidia Stanoi[1], Eun Lee[2], Megan Speer[1], Mia Jovanova[3], Xie He[4], Danielle Bassett[3], Peter Mucha[4], Emily Falk[3], Kevin Ochsner[1]

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3-F-196 The surprising role of the mind at rest in remembering others? disclosures and providing support

Eleanor Collier[1], Meghan Meyer[2]

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3-F-197 Loneliness and the social brain: how perceived social isolation impairs human interactions

Jana Lieberz[1], Simone Shamay-Tsoory[2], Nira Saporta[2], Timo Esser[1], Ekaterina Kuskova[1], Birgit Stoffel-Wagner[1], René Hurlemann[3], Dirk Scheele[1]

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3-F-198 Coordinate-based meta-analysis of social interaction

Junaid Merchant[1], Sophia Glaros[1], Stephanie Moy[1], Elizabeth Redcay[1]

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Giovanni Vecchiato[1], Paolo Presti[2], Stefano Lenzi[1], Davide Ruzzon[3], Pietro Avanzini[1], Fausto Caruana[1]

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3-I-217 Dynamics of stress and loneliness: longitudinal assessment of changes in neural emotion processing

Mitjan Morr[1], Jana Lieberz[1], Michael Dobbelstein[1], Alexandra Philipsen[1], René Hurlemann[2], Dirk Scheele[2]

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Sebastian Speer[1], Ale Smidts[1], Maarten Boksem[1]

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Elissar Andari[1], Andrew Cotton[1], Joseph Cubells[2], James Rilling[2], Larry Young[2]

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Helio Cuve[1], Santiago Castiello[1], Brook Shiferaw[2], Caroline Catmur[1], Geoff Bird[1]

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Kelsi King[1], Annie Ilsley[1], Jaime Castrellon[1], David Zald[2], Gregory Samanez-Larkin[1]

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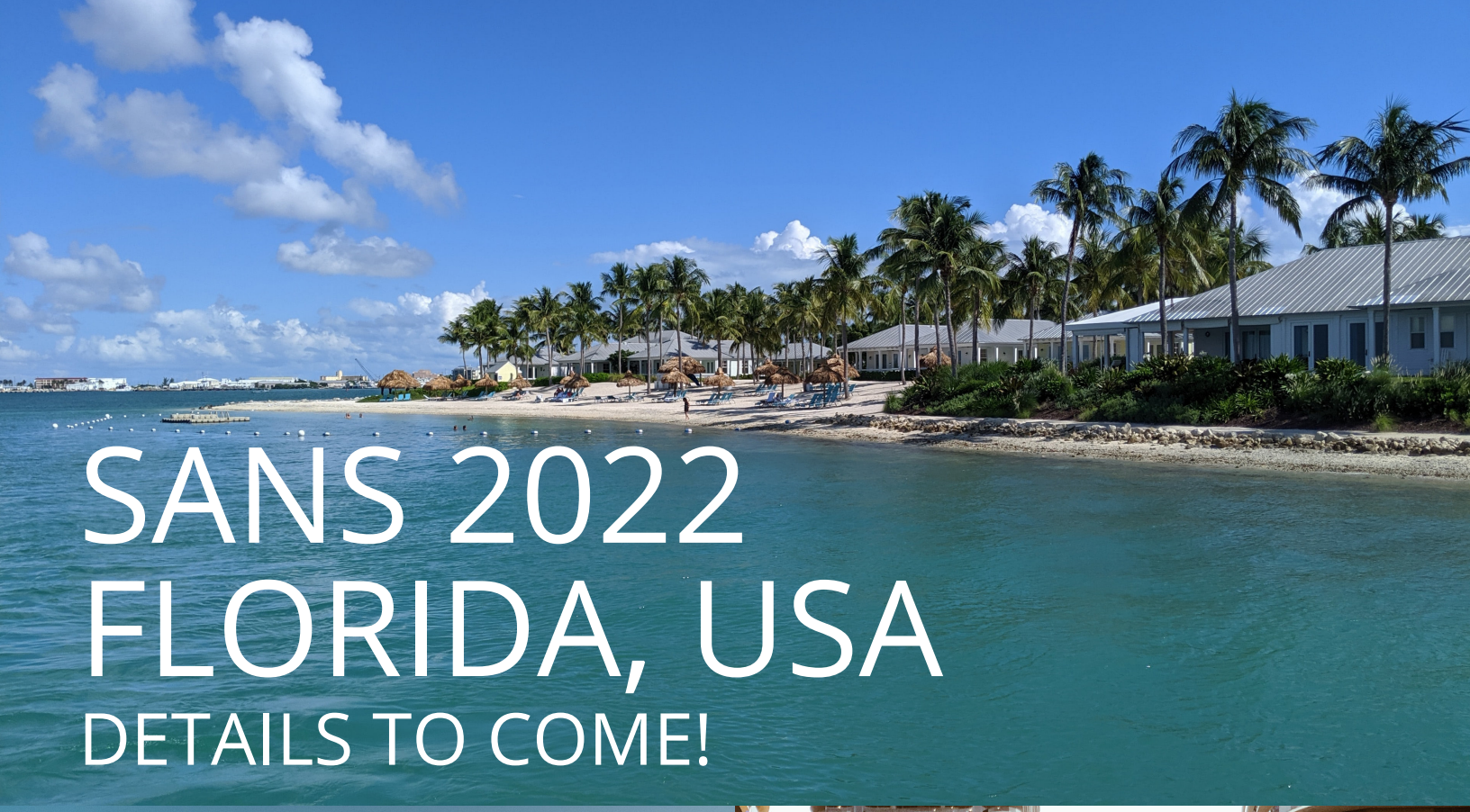

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