

IBIS Annual Meeting
October 24 and 25, 2022
Agenda

Zoom Link: <https://zoom.us/j/94768826599?pwd=VFlaU2RHVEpGbUZjY1drWXFpT1BuUT09>

Welcome to the 2022 IBIS Annual meeting. In past years, when this meeting has been in-person, we have included much time for discussion and small workgroups. Because we have shifted to a remote meeting, and Zoom meetings are not conducive to these activities, this year we are primarily focusing our time on data talks and start up of the ACE-adolescence grant and other projects. We will continue to set aside time on our regular Large Group calls for ongoing discussions.

We would also like to welcome our guests/outside presenters:

Karen Berman, NIMH Chief Clinical and Translational Neuroscience Branch

Susan Bookheimer, Joaquin Fuster Professor of Cognitive Neuroscience, Psychiatry and Biobehavioral Sciences, UCLA

Lisa Gilotty, NIMH Program Officer

Alice Kau, NICHD Program Officer

Shau-Ming Wei, NIMH Staff Scientist, Behavioral Endocrinology Branch

Peter Schmidt, NIMH Branch Chief, Behavioral Endocrinology Branch

Jeremy Veenstra-VanderWeele, Suzanne Crosby Murphy Professor of Developmental Neuropsychiatry and Director, Division of Child and Adolescent Psychiatry, Columbia, University

Monday, October 24
Morning Session
10:00-1:06 (ET)

10:00-10:05 Welcome - Joe Piven

New Data and Projects on IBIS Down Syndrome

10:05-10:50 Becca Grzadzinski, Kelly Botteron, Heather Hazlett,
Dea Garic, Martin Styner & Natasha Marrus 45 min

Update on Funded Projects Complementary to IBIS Parent Grants

10:51-11:06	Sleep grant	Annette Estes	15min
11:07-11:17	IPSC Studies	Jason Stein	10min
11:18-11:28	LENA Grant	Meghan Swanson	10min
11:30-11:40	Synchrony Grant	Whitney Guthrie	10 min

11:41-11:56	BREAK (15m)		
11:56-12:06	Barriers to Black Families in IBIS Grant	Kelly Caravella	10min
12:07-12:22	CSF studies	Mark Shen	15min
12:23-12:33	Sensory Responsiveness & Repetitive Behaviors Grant	Jason Wolff	10min
12:34-12:44	Translational Studies of Arousal	Becca Grzadzinski & Jose Rodriguez-Rommaguera	10min
12:45-12:55	IBIS as a Study of Families	Jessica Girault	10min
12:56-1:06	Ethical Social (ELSI) Studies of Autism	Kate MacDuffie	10min

Monday, October 24
Afternoon Session
2:00-5:00 (ET)

Launching the IBIS-Adolescent grant

2:00-2:15	Brief Overview of IBIS-ADOL Aims	Joe Piven & Casey Burrows	15min
2:16-2:46	Endocrine & Neurobiological Events in Puberty	Peter Schmidt & Karen Berman & Shau-Ming Wei	30min

IBIS-Adolescent Start up

2:47-3:02	Data Coordinating Center	Leigh MacIntyre	15min
3:03-3:48	Behavior Core	Annette Estes & Tanya St John	45min

3:49-4:05 BREAK (15m)

4:05-4:30	Imaging Core	Mark Shen Jed Elison Bob McKinstry Martin Styner John Pruett	25min
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4:31-4:41	Diversity, Equity, Inclusion Working Group	Steve Dager	10min
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Data Blitz (5m talk + 3m Discussion)

4:42-4:50	Language Development	Shruthi Ravi, UT Dallas	
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Session Wrap Up

4:51-5:00	Joe Piven		
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Tuesday, October 25

Afternoon Session

1:00-4:07 (ET)

Adolescent Reference Databases for Brain Imaging, to Shed Light on Diversity in the IBIS Sample

1:00-1:30	ABCD Study summary	Susan Bookheimer	30min
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1:31-1:41	John Gilmore/UNC study	Jessica Girault	10min
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New IBIS Analyses

1:42-1:52	Perivascular Space	Dea Garic	
1:53-2:03	Social Motivation	Natasha Marrus	
2:04-2:14	fcMRI	John Pruett	
2:15-2:25	Sex Differences	Casey Burrows	
2:26-2:36	Amygdala/Anxiety	Casey Burrows/Carolyn Lasch	
2:37-2:47	Executive Function	Tanya St John	

2:48-3:03 Break (15m)

3:03-3:23	Girault Lab Studies	Jessica Girault	
3:24-3:34	Measurement Invariance	Jed Elison	
3:35-3:45	Sensory/Repetitive Beh.	Jason Wolff	
3:46-3:56	CBCL	Meghan Swanson	
3:57-4:07	Long. Volume/Cort. Features	Heather Hazlett/Josh Rutsohn	

Additional Information

IBIS Workgroups

Analysis - Jessica Girault

Language – Meghan Swanson

Sex Differences – Tanya St. John

Trainee - TBD

Diagnostic Stability – Becca Grzadzinski/Tanya St. John

Diversity – Steve Dager

Down Syndrome – Becca Grzadzinski

IBIS Related Grants

IBIS-SA/ADOL

Brain and Behavior Study of Autism from Infancy through School Age (Piven/NICHD)

Brain and Behavior Study of ASD from Infancy through Adolescence (Piven/NICHD)

IBIS-DSSA (Hazlett/NICHD Supplement to IBIS-SA)

The influence of common genetic variation on brain overgrowth pathway (Stein/NIH)

Genetic Liability for Autism and Infant Brain and Behavioral Development (Girault/NIMH)

The experience of human subjects with brain organoid research (MacDuffie/NIMH)

Sleep, Brain Development, and Behavioral Correlates in a Longitudinal Cohort of Children at Risk for ASD (Estes/NICHD)

Investigating Air Pollution Effects on the Developing Brain and ASD (VOLK/NIEHS)

Metals Dysregulation, Brain Development, and Autism Spectrum Disorder (Volk/ NIEHS)

An ASD Enriched Risk (ASD-ER) ECHO Cohort (Volk/NIH(OD))

IBIS-Infants

MRI Based Presymptomatic Prediction of ASD (Piven & Pruett/NIMH)

IBIE-EP v24 Supplement (Piven & Pruett/NIMH)

A Longitudinal MRI Study Characterizing Very Early Brain Development in Infants with Down Syndrome (Botteron/NICHD)

Toward scalable biomarker-based prediction of ASD in high-risk infants (Shafali/NIH & Simons)

Caregiver Speech and Brain-Behavior Development in Infants At-Risk for ASD (Swanson/NICHD)

Blood Spot Collection to Enable Future Study of Environmental Exposures and Brain-Behavior Development in Two Unique, Longitudinal Cohorts of Infants at High Risk for Autism (Volk & Shen/NIH & CEHS)

Atypical Social Arousal as an Early Marker in ASD (Grzadzinski/UNC)

Computational analysis of interpersonal synchrony: A lens into the early emergence of autism (Guthrie & Tunc/Eagle Autism Challenge)

Meeting Presentations/Presenter Details

10/24 Morning Session			
New Data and Projects on IBIS Down Syndrome			
IBIS-DSSA Overview	Heather Hazlett	U of North Carolina	overview of IBIS-DSSA, status of grant now ended, subject numbers, etc.
DSSA brain volumes (sMRI) and	Becca Grzadzinski	U of North Carolina	prelim data on DSSA brain volumes (sMRI) and brain-bx trajectories
Infant DS data	Kelly Botteron	Washington U	prelim data on infant DS (e.g., data from IBIS-DS progress report), touch on comorbidities, etc.
	Natasha Marrus	Washington U	
Infant DS Imaging Data	Martin Styner	U of North Carolina	methods slides on DTI, longitudinal image segmentation for infant projects, image harmonization
CSF in DS (new KO1)	Dea Garic	U of North Carolina	share plans for her newly awarded KO1 regarding eaCSF in DS
Update on Funded Projects Complementary to IBIS Parent Grants			
Sleep Grant	Annette Estes	U of Washington - Seattle	Information on the IBIS Sleep study
IPSC Studies	Jason Stein	U of North Carolina	Description of IBIS-iPSC project, current recruitment, planned recruitment, organoid differentiation, and comparison of in vivo proliferation with in vivo brain growth
LENA Grant	Meghan Swanson	U of Texas - Dallas	LENA R01: I will give a brief overview of the aims of the grant and an update on data collection with an eye towards opportunity to improve collection rates
Synchrony	Whitney Guthrie	Children's Hospital of Philadelphia	I plan to present on the Infant Synchrony project. I'll provide an overview of the grant and its project aims, as well as details about our experimental paradigm. I'll also discuss our computer vision, methods and how we are using them to measure facial synchrony between infants and caregivers. Finally, I'll discuss our team's ongoing development of new computer vision methods that accurately capture infant faces, as most existing measures using adult faces.
Barriers to Black families in IBIS	Kelly Caravello		UNC Health Equity Award to Study Barriers to Black families in IBIS
CSF Studies	Mark Shen	U of North Carolina	Update on CSF studies in autism and associated genetic conditions.
Sensory Responsiveness/Repetitive Behaviors	Jason Wolff	University of Minnesota	update on some preliminary findings from direct sensory testing (mQST)
Translational Studies of Arousal	Becca Grzadzinski	U of North Carolina	Translational (human, mouse) Studies of Arousal
	Jose Rodriguez-Rommaguera	U of North Carolina	
IBIS as a Study of Families	Jessica Girault	U of North Carolina	Detailed information on Jessica's family studies.
Ethical Social (ELSI) Studies of Autism	Kate MacDuffie	U of Washington - Seattle	Update on IBIS ethics projects (parent attitudes towards predictive MRI, biospecimen donation, and clinical trial design)

10/24 Afternoon Session

Launching the IBIS-Adolescent grant

Brief Overview of IBIS-A Aims	Joe Piven	U of North Carolina	IBIS ADOL Aims
	Casey Burrows	University of Minnesota	
Endocrine and Neurobiological Events in Puberty	Peter Schmidt	NIMH	NIMH Longitudinal Study, Issues we should consider in IBIS-ADOL, discussion
	Karen Berman	NIMH	
	Shau-Ming Wei	NIMH	

IBIS-Adolescent Start up

Data Coordinating Center	Leigh MacIntyre	McGill	IBIS Database Updates
Behavior Core	Annette Estes	U of Washington - Seattle	BCC Adolescent Behavior Protocol
	Tanya St. John	U of Washington - Seattle	
	Mark Shen	U of North Carolina	
Imaging Core	Jed Elison	University of Minnesota	Imaging Adolescent MRI Protocol
	Martin Styner	U of North Carolina	
	John Pruett	Washington U	
	Steve Dager	U of Washington - Seattle	
Diversity, Equity, Inclusion Working Group	Steve Dager	U of Washington - Seattle	progress of the diversity working group

Data Blitz

language development	Shruthi Ravi	U of Texas - Dallas	Recently published manuscript on associations between early social communication skills and later language. Key findings presented.
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10/25 Afternoon Session

Adolescent Reference Databases for Brain Imaging, to Shed Light on Diversity in the IBIS Sample

ABCD Study summary	Susan Bookheimer	UCLA	description, data sharing, summary of key ABCD and other findings relevant to IBIS-A
John Gilmore/UNC study and reference database	Jessica Girault	U of North Carolina	
Perivascular spaces	Dea Garic	U of North Carolina	Perivascular spaces (PVS) and cerebrospinal fluid (CSF) are critical for neural waste clearance. Enlarged PVS (ePVS) are associated with neurological disorders and sleep problems, and excessive CSF volume is associated with autism spectrum disorder (ASD). However, clinical studies of the significance of PVS in children, particularly those with neurodevelopmental disorders, are lacking. In this study, we present findings that the presence of ePVS during infancy was associated with later ASD diagnosis, elevated EA-CSF volume, and sleep disturbances. Infants with ePVS should be examined for additional signs of abnormal glymphatic characteristics (i.e., EA-CSF volume), and should be monitored for early signs of ASD and potential long-term sleep problems. Further examination is needed to establish whether early ePVS is ASD-specific or an indication of early glymphatic system dysfunction that can put infants and children at risk for atypical brain development.
Social Motivation	Natasha Marrus	Washington U	
fcMRI	John Pruett	Washington U	
Sex Differences	Casey Burrows	University of Minnesota	
Amygdala/Anxiety	Casey Burrows	University of Minnesota	
	Carolyn Lasch	University of Minnesota	
Executive Function	Tanya St. John	U of Washington - Seattle	
Girault Lab Studies	Jessica Girault	U of North Carolina	(1) Amygdala-Visual Cortex functional connectivity project, (2) School-age functional connectivity project, (3) Latent Cognitive Trajectories & Brain Development Project, (4) White matter and language development in infancy
Measurement Invariance	Jed Elison	University of Minnesota	
Sensory/Repetitive Behaviors	Jason Wolff	University of Minnesota	recent/ongoing sensory and repetitive behavior projects from IBIS
CBCL	Meghan Swanson	U of Texas - Dallas	Preliminary results of CBCL school age data analyses including group differences, and latent class analysis in the HL-ASD
Longitudinal Volume/Cortical Features	Heather Hazlett	U of North Carolina	
	Josh Rutsohn	U of North Carolina	

Meeting Attendees

Name	Email Address	Affiliation	Position at Institution/with IBIS
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