The mission of the Simons Center for the Social Brain (SCSB) at MIT, now in its sixth year, is to understand the neural mechanisms underlying social cognition and behavior, and to translate this knowledge into better diagnosis and treatment of autism spectrum disorders (ASD). SCSB was founded in January 2012 with support from the Simons Foundation Autism Research Initiative (SFARI), and completed its first five-year phase of funding in December 2016. In January 2017, it was renewed for a second phase.

The impact of SCSB is manifest in many ways:

**Recent Publications**

From Limor Freifeld and Ed Boyden, in *PNAS*:  
**Expansion microscopy of zebrafish for neuroscience and developmental biology studies.**

From Yeong Shin Yim, Jun Huh, and Gloria Choi, in *Nature*:  
**Reversing behavioral abnormalities in mouse offspring exposed to maternal inflammation.**

From Gloria Choi and Jun Huh, in *Nature*:  
**Maternal gut bacteria promote neurodevelopmental abnormalities in mouse offspring.**

From Ev Fedorenko, in *Journal of Neuroscience*:  
**Domain-general brain regions do not track linguistic input as closely as language-selective regions.**
TARGETED PROJECT UPDATE: THE LANGUAGE PRAGMATICS PROJECT
UNDERSTANDING AUTISM FROM EVERY ANGLE

Understanding language entails more than simply decoding the literal meaning of each sentence: our interpretation is powerfully shaped by our guesses about the intent of the speaker, the linguistic and social context of the utterance, and our general world knowledge. This ability to go beyond the literal meaning is called “pragmatics”, and it is at the core of the communication deficit in autism.

Over the past three years, a team of five researchers have focused on understanding the nature of this deficit, its developmental trajectory, and its underlying neural mechanisms. Laura Schulz and Josh Tenenbaum, Professors of Cognitive Science in the Department of Brain and Cognitive Sciences have developed a computational model of how people infer costs of others’ actions and showed that this general ability to reason about others’ actions supports pragmatic inferences from early in life. Ted Gibson, Professor of Cognitive Science in the Department of Brain and Cognitive Sciences, developed and validated an extensive battery of tasks that can be used to assess pragmatic reasoning abilities, and identified specific components of pragmatics that are impaired in individuals with autism. And Ev Fedorenko, Assistant Professor at HMS and MGH, and Rebecca Saxe, Professor of Cognitive Neuroscience in the Department of Brain and Cognitive Sciences, have examined the contributions of three large-scale brain networks – the language network, the social network, and the executive-function network – to pragmatic reasoning using functional MRI.

They found that reduced lateralization of the language network is a robust neural marker of autism, present not only in individuals with autism, but also in neurotypical males and neurotypical individuals with high autistic trait load, in line with a continuum model of underlying genetic risk.

Sample stimuli from a battery of tasks developed by former postdoc Olessia Jouravlev to tap different aspects of pragmatic reasoning. Participants were shown pictures like this and asked to decide why the character says what he/she says, to test whether they understand the intention of the character in the critical cases of non-literal communication (e.g., that the girl wants water when she says "I am thirsty").

For other Targeted Projects, please visit: http://scsb.mit.edu/research/targeted-projects/

“We believe that the most novel research ideas and approaches come from collaborations, and even unusual collaborations, rather than within-lab research funded by usual mechanisms”

- Mriganka Sur, Director, Simons Center for the Social Brain.
UPCOMING EVENTS: SPRING 2018

LUNCH SERIES

- February 9, 2018 – **Ted Gibson, Ph.D.**
  Professor of Cognitive Science, Dept. of Brain & Cognitive Sciences, MIT

- February 16, 2018 – **Dara Manoach, Ph.D.**
  Professor of Psychology, Dept. of Psychiatry, MGH

- March 23, 2018 – **Siyuan Rao, Ph.D.**
  Simons Fellow, Polina Anikeeva Laboratory, MIT

- April 27, 2018 – **Julian Jara-Ettinger, Ph.D.**
  Assistant Professor, Dept. of Psychology, Yale University

- May 4, 2018 – **Sasha Krol, Ph.D.**
  Simons Fellow, Guoping Feng Laboratory, MIT

- June 1, 2018 – **Jeongtae Kwon, Ph.D.**
  Simons Fellow, Gloria Choi Laboratory, MIT

General Info:
Time: 12PM - 1PM
Location: SCSB Conference room, Building 46, Room 6011
43 Vassar Street
Cambridge, MA 02139

POSTDOCTORAL APPLICATIONS: SPRING 2018

We are pleased to announce the 2018 Round 1 funding opportunities for Postdoctoral Fellowships.

Postdoctoral Fellowships are intended for outstanding candidates with very recent PhDs who wish to conduct autism-related research at MIT under the mentorship of MIT faculty researchers. Applicants currently completing their PhD outside MIT, who wish to carry out postdoctoral research at MIT, are strongly encouraged to apply.

**Deadline:** Wednesday, February 28, 2018.

For information on how to apply and eligibility, please visit our website at: [http://scsb.mit.edu/funding/postdoctoral-fellowship-funding/](http://scsb.mit.edu/funding/postdoctoral-fellowship-funding/)
PARTICIPATE!

Researchers in the Department of Brain and Cognitive Sciences at MIT are exploring the neuroscience behind social cognition and behavior. Individuals and families can play an important role in making these discoveries by participating in research. Several research studies are actively recruiting volunteers with and without autism spectrum disorders. The Simons Center actively supports these projects.

For more information on how to participate in these studies, please email Recruitment Coordinator AJ Haskins or visit our website: http://scsb.mit.edu/research/participate/.

Supporting Autism Research at MIT

Gift of alumni/ae and friends to be used for supporting collaborative research on Autism and Neurodevelopmental Disorders at MIT:

Please visit https://giving.mit.edu/ to make a gift.

Simons Center for the Social Brain – Autism Research Fund 3836050