UCONN | UNIVERSITY OF CONNECTICUT

CONNECTICUT INSTITUTE FOR THE BRAIN AND COGNITIVE SCIENCES

Meet-and-Speak Event

Tuesday, May 8th, 2018 at the Alumni Center

9:00 AM *Breakfast, Coffee and Networking – 20 minutes*

9:20 AM **Opening Remarks**

9:30 AM **Gerry Altmann,** Director, CT Institute for the Brain and Cognitive Sciences
Welcome to the Institute

9:40 AM **Adam Lepley,** Kinesiology
Neuroplastic changes following musculoskeletal injury: Origin for motor impairments

9:57 AM **Ed Large,** Psychological Sciences
Characterization of neural & electrophysiological correlates of pitch perception

10:14 AM **Akiko Nishiyama,** Physiology & Neurobiology
Exploring the role of NG2 glial cells in the mouse brain network

10:31 AM **Jim Magnuson,** Psychological Sciences
Modeling human speech recognition: Insights from deep learning

10:45 AM *Coffee Break and Networking – 20 minutes*

11:05 AM **James Dixon,** Psychological Sciences
From swarming to team dynamics: Towards a physical account of collective behavior

11:22 AM **Michael O'Neil,** Molecular and Cellular Biology
X-linked imprinted genes in Maternal Immune Activated (MIA) mice: A model for ASD

11:39 AM **John Salamone,** Psychological Sciences
Inflammation effects on effort-based decision making: Relevance for depression

12:00 PM *Lunch and Networking - 1 hour and 15 minutes*

Graduate Student Data Blitz

1:15 PM **Andre Lindsey,** Speech, Language & Hearing Sciences
Priming disrupted processes

1:27 PM **Ashley Parker,** Speech, Language & Hearing Sciences
Auditory processing skills in children with Specific Language Impairment: Is the problem actually auditory?

1:39 PM **Jessica Contreras,** Psychological Sciences
Impact of language modality on number cognition development

1:51 PM **Alexandria Battison,** Physiology & Neurobiology
Over the brainbow: Investigating connectivity of neocortical interneurons

2:03 PM **Ashley Dhaim,** Psychological Sciences
The role of joint action in development

2:30 PM *Poster Session / Open Forum – 1 Hour*

5PM **Keynote, Konover Auditorium - Holly Fitch, Professor of Psychological Sciences presents:** *Auditory processing in genetically engineered mouse models: Implications for human language*

Meet-and-Speak Event

Wednesday, May 9th, 2018 at the Alumni Center

9:00 AM *Breakfast, Coffee and Networking – 20 minutes*

9:20 AM **Gerry Altmann**, Psychological Sciences
The science of understanding

9:40 AM **David Martinelli,** UCHC Neuroscience
The function of synaptic adhesion proteins at outer hair cells of the cochlea

9:57 AM **Ephraim Traktenberg,** UCHC Neuroscience
Effects of extra-axonal tissue remodeling on experimental regeneration of CNS axons

10:14 AM **Min Tang-Schomer,** UCHC Neuroscience, Jackson Labs
Probing the brain's growth and function outside the body

10:31 AM **Marie Coppola,** Psychological Sciences
CEDAR: Community engagement in Deafness and Autism research

10:45 AM *Coffee Break and Networking – 20 minutes*

11:05 AM **Bernard Grela,** Speech, Language and Hearing Sciences
Conceptual organization in language impairment

11:22 AM **Roeland Hancock,** Psychological Sciences
Neuroimaging of the genetic architecture of language processing

11:39 AM **Chris Heffner,** Postdoc in Speech, Language and Hearing Sciences and **Lauren Powers,** Child Research Recruitment Coordinator at UConn KIDS
A day at the museum: Behavioral science at the CSC

12:00 PM *Lunch and Networking - 1 hour and 15 minutes*

Graduate Student Data Blitz

1:15 PM **Ryan Troha,** Psychological Sciences
Observational learning of a foraging scenario in rats

1:27 PM **Jenelle Salisbury,** Philosophy
The unity of consciousness and the first-person perspective

1:39 PM **Peter Perrino,** Psychological Sciences
Developing a novel rule learning paradigm for mice

1:51 PM **Ryosuke Hattori,** Linguistics
Children's acquisition of degree expressions

2:03 PM **Monica Ly,** Psychological Sciences
Diffusion tensor imaging in university athletes with concussion

2:30 PM *Poster Session / Open Forum – 1 Hour*

5PM **Keynote, Konover Auditorium** - **Dianne Newbury, Professor of Biological and Medical Sciences at Oxford Brookes University presents:** Genetic contributions to auditory processing disorder

Keynote Speakers

to be held at 5pm, Konover Auditorium
Refreshments will be served.

May 8th: R. Holly Fitch & Peter Perrino (BNS, Dept. of Psychological Sciences; IBACS; NBL; SLAC)

Auditory processing in genetically engineered mouse models: implications for human language

Basic research on human language and disorders of language has been historically limited by a dearth of suitable rodent models. While the use of genetically engineered rodents has recently led to exciting advancements in the understanding of gene-behavior associations in disorders like schizophrenia, anxiety, and depression, comparable insights into language-specific disabilities (e.g., dyslexia, specific language impairment) are lacking.

In this talk I will present background data on our use of genetically engineered mouse models to effectively capture intermediate phenotypes relevant to language, specifically using mice with mutations in dyslexia and ASD-risk genes.

In the second half of the talk I will focus on our results from a mouse model of Usher Syndrome. This knock-out model revealed an unexpected subtle auditory processing phenotype in the heterozygous carrier state that may relate to subtle disruptions in language in affected humans.

Findings will dovetail into a subsequent talk by Dr. Dianne Newbury (Wed May 9, 2018), in which she will discuss how gene-behavior insight from sources including basic rodent research can inform epidemiological and clinical study of the relationships between neurodevelopment traits in humans.

May 9th: *Dianne Newbury, Professor of Biological and Medical Sciences at Oxford Brookes University, UK*

Genetic contributions to auditory processing disorder

Developmental language disorder (DLD) is a common childhood condition which has lifelong consequences for affected children. We have little understanding of the mechanisms underlying the risk of language disorders but it is clear that they are likely to involve complex networks of genetic, neurological and environmental factors which show considerable overlaps with other neurodevelopmental disorders. In this talk, I will describe our recent investigations of the genetic overlaps between auditory processing disorder and speech and language outcomes. We performed whole genome sequencing of a family affected by a severe auditory processing disorder and characterised the identified genetic effects within a large population cohort. Collaborative studies of mouse models led by the Murine Behavioral Neurogenetics Facility allowed us to hypothesise a new model of the biological pathways involved in auditory processing and language disorders. Ongoing investigations of these pathways will provide a better understanding of the molecular mechanisms underlying neurodevelopmental disorders.

Dianne Newbury is a molecular geneticist who studies genetic contributions to childhood neurodevelopmental disorders. Her investigations specifically focus around developmental language disorders and their relationship to other neurodevelopmental difficulties, such as dyslexia. Dianne has a lab at Oxford Brookes University and her research is currently funded by the Leverhulme Trust and the ESRC.