Symposium: Neural bases of speech production, 22nd March 2019

Date:
March 22, 2019

Location:
Byers Auditorium in Genentech Hall- UCSF Mission Bay Campus

Map [1]
Directions to the auditorium are here [2]

Organisers: Professor John Houde [3], Dept of OHNS & Professor Srikantan Nagarajan [4], Dept of Radiology

How does the neural circuitry of the brain create speech, and what are the constraints on this process? In the past several years, there has been exciting progress on many aspects of this topic, and at this symposium we will hear from many of the leaders in the field who are advancing it. In a full-day symposium, a series of sixteen speakers and fourteen poster presenters will show the latest findings on the neural control of speech output, how sensory feedback interacts with it, and how learning plays a role in the process.

Schedule:

8:45 am Coffee
9:00 am  
**Opening remarks**  
John F. Houde, Dept. of Otolaryngology ? Head and Neck Surgery, UCSF

9:05 am  
**Xing Tian**  
Division of Arts and Sciences, New York University Shanghai, Shanghai, China  
Shanghai Key Laboratory of Brain Functional Genomics (Ministry of Education), School of Psychology and Cognitive Science, East China Normal University, Shanghai, China  
NYU-ECNU Institute of Brain and Cognitive Science, New York University Shanghai, China  
The Dynamic and Task-dependent Representational Transformation between the Motor and Sensory Systems

9:23 am  
**Kristina Simonyan**  
Dept. of Otolaryngology, Harvard Medical School, Boston, MA  
Massachusetts Eye and Ear, Boston, MA  
Massachusetts General Hospital, Boston, MA  
Dynamic large-scale neural control of speech production [7]

9:41 am  
**Jaimie Henderson**  
Dept. of Neurosurgery, Wu Tsai Neurosciences Institute, Stanford University, Stanford, CA  
Neural ensemble activity in dorsal motor cortex during speech production
Coffee/Poster Session 1 (30 min)

1. Valentina Borghesani
   *Dept. of Neurology, UCSF, San Francisco, CA*
   The semantic variant of Primary Progressive Aphasia: a window into the spatiotemporal dynamics of language

2. Kamalini Ranasinghe
   *Dept. of Neurology, UCSF, San Francisco, CA*
   Neural correlates of abnormal sensorimotor integration during speaking

3. Leighton Hinkley
   *Dept. of Radiology, UCSF, San Francisco, CA*
   Cortical dynamics during speech preparation in primary progressive aphasia

4. Vikram Ramanarayanan
   The FACTS model: using state estimation and task-based feedback control to model the speech motor system

Oral Session 2, chair: Inez Raharjo
   *Program in Bioengineering, UCSF and UC Berkeley*

10:35 am

Donald Robin
   *Dept. of Communication Sciences and Disorders, College of Health and Human Services, The University of New Hampshire, Durham, NH*
   The Neural Control of Human Vocalization: Quantitative Meta-Analytic Modeling of Functional Brain Imaging Data

10:53 am

Hanjun Liu
   *Dept. of Rehabilitation Medicine, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China*
   Top-down Inhibitory Mechanisms Underlying Auditory-motor Control of Speech
11:11 am  
Roozbeh Behroozmand  
Dept. of Communication Disorders, University of South Carolina, Columbia, SC
Sensorimotor Impairment of Speech Auditory Feedback Processing in Post-Stroke Aphasia

11:27 am  
Coffee/Poster Session 2 (30 min)

5. Karuna Subramaniam  
Dept. of Psychiatry, UCSF, San Francisco, CA
Reality monitoring and Feedback Control of Speech Production are related through Self-Agency

6. Inez Raharjo  
Program in Bioengineering, UCSF, San Francisco, CA and UC Berkeley, Berkeley, CA
Altered Speech Responses to Transient, Unpredictable and Consistent Formant Perturbations

7. Matthias Franken  
Experimental Psychology Dept., Ghent University, Ghent, Belgium
The effect of passive sound attenuation in an altered auditory feedback paradigm

Oral Session 3, chair: Caroline Niziolek, Dept. of Communication Sciences and Disorders, University of Wisconsin

12:05 pm  
Benjamin Parrell  
Dept. of Communication Sciences and Disorders, University of Wisconsin-Madison, Madison, WI
Previous exposure to sensory feedback noise causes a decrease in online compensation for sensory perturbations in speech

12:23 pm  
Sarah Bakst  
Dept. of Communication Sciences and Disorders, University of Wisconsin-Madison, Madison, WI
Self-monitoring in L1 and L2: a magnetoencephalography study

12:39 pm  
Lunch (1 hour)
Oral Session 4, chair: Hardik Kothare\textsuperscript{[8]}, Program in Bioengineering, UCSF, San Francisco, CA and UC Berkeley, Berkeley, CA

1:42 pm

Florencia Assaneo

\textit{Dept. of Psychology, New York University, New York, NY}

Spontaneous synchronization to speech reveals neural mechanisms facilitating language learning \textsuperscript{[21]}

2:00 pm

Virginie van Wassenhove

\textit{CEA, DRF/Joliot, NeuroSpin; INSERM, U992, Cognitive Neuroimaging Unit, Université Paris-Saclay, Gif/Yvette, France}

Segmenting ambiguous speech \textsuperscript{[22]}

2:16 pm

Coffee/Poster Session 3 (30 min)

8. Ayoub Daliri

\textit{Dept. of Speech and Hearing Science, Arizona State University, Tempe, AZ}

Relationship between speech motor adaptation and relevance of auditory errors

9. Hardik Kothare

\textit{Program in Bioengineering, UCSF, San Francisco, CA and UC Berkeley, Berkeley, CA}

Neural correlates of aberrant vocal motor control in Adductor Spasmodic Dysphonia \textsuperscript{[23]}

10. Kevin Reilly

\textit{Dept. of Audiology and Speech Pathology, College of Health Professions, University of Tennessee Health Science Center, Knoxville, TN}

Parameterization of vowel acoustics during conversational speech in healthy and dysarthric speakers \textsuperscript{[24]}

Oral Session 5, chair: Valentina Borghesani \textsuperscript{[26]}, Dept. of Neurology, UCSF, San Francisco, CA

2:54 pm

David Ostry

\textit{Dept. of Psychology, McGill University, Montreal, Canada}

\textit{Haskins Laboratories, New Haven, CT}

Somatosensory cortex participates in the consolidation of motor memories \textsuperscript{[27]}
Douglas Shiller

School of Speech-Language Pathology & Audiology, Université de Montréal, Montreal, Canada

Speech adaptation to palatal perturbation: Evidence for sensorimotor reorganization across the workspace

3:28 pm

Coffee/Poster Session 4 (30 min)

11. Megan Thompson

Boston University, Boston, MA

Quantitative Assessment of Cognitive Models with Neuroimaging Data

12. Gopala Krishna Anumanchipalli

Dept. of Neurological Surgery, UCSF, San Francisco, CA

Speech Synthesis from neural decoding of spoken sentences

13. Nicole Neef

Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

Imagined and actual speaking disentangle involvement of motor and somatosensory cortices: Submillimeter resolution resolves the cortical organization of speech pronunciation

Oral Session 6, chair: Srikantan S. Nagarajan

4:06 pm

Daniel Lametti

Department of Psychology, Acadia University, Wolfville, Nova Scotia, Canada

One-sided Interference Between Speech Production and Visuomotor Learning

4:24 pm

Ludo Max

Dept. of Speech and Hearing Sciences, Dept. of Linguistics, and Dept. of Bioengineering, University of Washington, Seattle, WA

Adapting like a Seattleite in the snow: Updates on a few aspects of sensorimotor learning in speech production
Frank Guenther

Dept. of Speech, Language & Hearing Sciences, Dept. of Biomedical Engineering, Boston University, Boston, MA

A 3-parameter model for fitting and interpreting speech sensorimotor adaptation data

Concluding remarks

Srikantan S. Nagarajan, Dept. of Radiology, Dept. of Otolaryngology, UCSF, San Francisco, CA

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[22] http://speechneuro.ucsf.edu/segmenting-ambiguous-speech
[26] https://albalab.ucsf.edu/people/valeintina-borghesani-phd
[34] http://speechneuro.ucsf.edu/3-parameter-model-fitting-and-interpreting-speech-sensorimotor-adaptation-data