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

Date:
March 22, 2019

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

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
Oral Session 1, chair: John F. Houde, Dept. of Otolaryngology ? Head and Neck Surgery, UCSF

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Opening remarks

John F. Houde, Dept. of Otolaryngology ? Head and Neck Surgery, UCSF, San Francisco, CA

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

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

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 in Alzheimer’s disease

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

4. Vikram Ramanarayanan
   Educational Testing Service Research & Development, San Francisco, CA
   Dept. of Otolaryngology - Head and Neck Surgery, UCSF, San Francisco, CA
   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

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**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*  
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*  
Self-monitoring in L1 and L2: a magnetoencephalography study

12:39 pm  
Lunch (1 hour)
Oral Session 4, chair: Hardik Kothare, Program in Bioengineering, UCSF, San Francisco, CA and UC Berkeley, Berkeley, CA

1:42 pm
Florencia Assaneo
Dept. of Psychology, New York University, New York, NY
Spontaneous synchronization to speech reveals neural mechanisms facilitating language learning

2:00 pm
Virginie van Wassenhove
CEA, DRF/Joliot, NeuroSpin; INSERM, U992, Cognitive Neuroimaging
Segmenting ambiguous speech [22]

2:16 pm
Coffee/Poster Session 3 (30 min)

8. Ayoub Daliri
Dept. of Speech and Hearing Science, Arizona State University, Tempe, AZ
Relationship between speech motor adaptation and relevance of auditory errors

9. Hardik Kothare
Program in Bioengineering, UCSF, San Francisco, CA and UC Berkeley, Berkeley, CA
Neural correlates of aberrant vocal motor control in Adductor Spasmodic Dysphonia

10. Kevin Reilly
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

Oral Session 5, chair: Valentina Borghesani, Dept. of Neurology, UCSF, San Francisco, CA

2:54 pm
David Ostry
Dept. of Psychology, McGill University, Montreal, Canada
Haskins Laboratories, New Haven, CT
Somatosensory cortex participates in the consolidation of motor memory
3:12 pm

**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

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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 [30]

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 [31]

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**Oral Session 6, chair:** Srikantan S. Nagarajan [4], *Dept. of Radiology, UCSF*

4:06 pm

**Daniel Lametti**

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

One-sided Interference Between Speech Production and Visuomotor Learning

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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.
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

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Concluding remarks

Srikantan S. Nagarajan, *Dept. of Radiology, Dept. of Otolaryngology ? Head and Neck Surgery, UCSF, San Francisco, CA*

Contact Us
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[22] http://speechneuro.ucsf.edu/segmenting-ambiguous-speech
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