**Nineteenth Biennial**

**Conference on Motor Speech:**

###### Motor Speech Disorders

**&**

**Speech Motor Control**

Feb 22 – 25, 2018
Savannah, Georgia

### Motor Speech Disorders

Co-Conference Chair: Kathryn Yorkston, Ph.D.

Program Chair: Kristie Spencer, Ph.D.

#### Speech Motor Control

Co-Conference Chair: Jordan Green, Ph.D.

Program Chair Michael Hammer, Ph.D.

Publications: Christopher Dromey, Ph.D.

Conference Management: Mark Hakel, Ph. D.

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**Continuing Education Units (CEUs)**

This program is offered for 2.05 CE hours (various levels; professional area).

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###### THURSDAY, FEBRUARY 22, 2018

**7:30 AM Registration and Continental Breakfast**

**8:00 Welcome**

**8:30 Models**

Quantitatively Assessing the DIVA Model with Neuroimaging

 F. Guenther, A. Daliri, A. Nieto-Castanon, J. Tourville

Intelligibility of monosyllabic words produced by an acoustically-driven model of the vocal tract

 B. Story, K. Bunton, H. Vorperian

Trait Related Internal Modeling Deficits in People Who Stutter During Spontaneous Fluency

 D. Jenson, T. Saltuklaroglu, K. Reilly, A. Harkrider, D. Thornton

A primer on clinical-speech applications of deep learning

 V. Berisha, J. Liss, M. Tu

**9:50 Break**

**10:10 AM Feedback and Perturbation Paradigms**

Manipulating prosody: speech-acoustic responses to vocal feedback perturbations prior to phrasal prominence

A. Hilger, J. Cole, C. Larson

Compensation and adaptation to vowel perturbation in children aged 4 to 9

S. Cheung, K. Thompson, K. Quinn de Launay, Y. Yunusova, D. Beal

A hierarchical task-based control model of speech incorporating sensory feedback

B. Parrell, V. Ramanarayanan, S. Nagarajan, J. Houde

**11:30 AM Lunch**

1:00 PM Special Session 1:

Faster than a blink of an eye: fast feedback processing for voluntary control

S. Scott

**2:15 PM Break**

**2:30 PM Speech and Cognition in Parkinson Disease**

Pausing during semi-structured speech and relationship to cognition in PD

K. Smith

Altered resting-state functional connectivity of basal ganglia nuclei related to speech impairment in Parkinson’s disease

J. Manes, K. Tjaden, T. Parrish, T. Simuni, A. Roberts, J. Greenlee, D. Corcos, A. Kurani

ERP differences to Pitch-Shifted Voice Feedback in Parkinson’s Disease

E. Park, S. Fruehholz, J. Ahn, M. Parulekar, F. Gupta, H. Azmi, S. Kim, A. Sarkar, L. Tank, C. Larson, S. Patel

**3:30 PM Poster Session**

Movement direction-specific articulatory dysfunction in individuals with dysarthria secondary to ALS

J. Lee

Using Speech Resynthesis to Identify Acoustic Variables Explaining the Clear Speech Intelligibility Benefit

K. Tjaden, A. Kain, G. Wilding

Bidirectional interference between simulated driving and speaking

C. Dromey, K. Simmons

Measuring third-party disability in family members of individuals with PD

H. Mach, K. Yorkston, C. Baylor

Motor induced suppression of the N100 ERP during motor-imagery while controlling a speech synthesizer brain-computer interface

J. Brumberg, K. Pitt

Perception of syllable segregation in untrained and trained listeners

P. McCabe, E. Murray, T. Brown, M. Swayze, D. Thomas, C. Madill

Contextual Interference and the Role of Phonetic Similarity

E. Kee, K. Meigh

Effect of sentence length on intelligibility and speech motor performance in ALS

K. Allison, Y. Yunusova, J. Green

BULBAR AMYOTROPHIC LATERAL SCLEROSIS: Beyond the motor system

S. Shellikeri, M. Myers, J. Keith, S. Black, L. Zinman, Y. Yunusova

Minimally detectable change and minimal clinically important difference of speech intelligibility and speaking rate for individuals with ALS

K. Stipancic, Y. Yunusova, J. Green

A model of speech development and disorders for diagnosis and treatment planning

H. Terband, B. Maassen, E. Maas

Neuromuscular control of vocal loudness in adults and children as a function of cue

A.Tam, J. Cummine, A. Reed, B. Tucker, C. Boliek

Changes in chest wall intermuscular coherence and speech breathing kinematics during speech and non-speech tasks following LSVT LOUD in children with dysarthria secondary to cerebral palsy

M. Ho, A. Reed, B. Mager, H. Gynane, R. Bakhtiari, C. Fox, C. Boliek

Emergence and Refinement of Respiratory Chest Wall Intermuscular Coherence Associated with Speech and Non-speech tasks in Younger and Older Children

D. Bremmekamp, J. Cummine, A. Reed, H. Gynane, N. Mahe, C. Boliek

Efficacy and acceptance of a low-cost Lombard-response device for PD

S. Adams, N. Kumar, P. Rizek, A. Hong, J. Zhang, A. Abeyesekera, C. Mancinelli, T. Knowles, M. Jog

Sensorimotor impairment of speech production and motor control in post-stroke aphasia: Evidence from behavioral and neurophysiological biomarkers

R. Behroozmand, L. Phillip, K. Joharikhatoonabad, L. Bonilha, C. Rorden, G. Hickok, J. Fridriksson

Typical listeners' recognition of monosyllabic words carrying Cantonese contour lexical tones prodcued by speakers with PD

K. Yuen, J. Huen, L. Kwan

Effects of levodopa on voice quality in PD

D. Cushnie-Sparrow, S. Adams, A. Abeyesekera, M. Pieterman, G. Gilmore, M. Jog

Investigating Orofacial Sensorimotor Control in Adults with and without Attention-Deficit/Hyperactivity Disorder (ADHD)

N. Etter, F. Cadely, C. Dahm, K. Neely

The Effects of Transcranial Direct Current Stimulation on Overt Object Naming in Healthy Younger and Older Adults

V. Cheung, M. Edgson, F. Fead, B. Tucker, M. Warren, A. Reed, N. Bhat, G. Crosby, J. Cummine, C. Boliek

Extending lingual complexity measures to speech development and disorders

H. Campbell, T. McAllister

Comparing visual-analog scale ratings and orthographic transcription estimates of intelligibility

N. Enos, D. Abur, C. Stepp

5:30 PM Reception and Dinner

**FRIDAY, FEBRUARY 23, 2018**

**7:30 AM Continental Breakfast**

**8:30 AM Poster Session**

Feasibility of using Automatic Speech Recognition (ASR) software for treatment in patients with AOS and aphasia

K. Ballard, N. Etter, S. Shen, P. Monroe, C. Tien Tan

The influence of postvocalic context on glides' formantic transitions in dysarthric speakers

 V. Martel Sauvageau, L. Girard

Determining the Associations between Neonatal Salivary FOXP2 levels, Oral Feeding and Early Vocalizations

 E. Zimmerman, R. Barolome, J. Maron

Empirical Evaluation of Communication Interfaces Optimized for Individuals with Motor Speech Disorders

 G. Cler, J. Vojtech, K. Kolin, J. Noordzij, C. Stepp

Is timing really everything? Acoustic measures of temporal accuracy in children with and without speech sound disorders

A. Van Zelst, E. Maas

Preliminary steps to validate Audapter, a software application for online tracking of children's formants

 S. Cheung, K. Thompson, S. Orlandi, Y. Yunusova, D. Beal

A Longitudinal Study of Speech Rate Development between 24 to 36 Months

 T. Loucks, A. Tendera, M. Rispoli

Treatment of lexical stress, segmentation, and sound distortions in childhood apraxia of speech

 H. Miller, A. Plante, K. Ballard, D. Robin

Effect of voice treatment supplemented with transcranial magnetic stimulation of voice periodicity and intensity in PD

 M. Cannito, K. Schiller, B. Bydlinski, E. Buder, S. Narayana

Speaking with noninvasive positive pressure ventilation: A qualitative analysis

 D. Britton, J. Hoit, E. Pullen, J. Benditt, C. Baylor, K. Yorkston

The effects of intensive voice treatment on intelligibility in PD: A randomized controlled trial

 E. Levy, G. Moya-Gale, Y. Hwa Chang, K. Forrest, L. Ramig

Neural correlates of longitudinal changes in articulation rate across subtypes of primary progressive aphasia

 C. Cordella, M. Quimby, M. Brickhouse, B. Dickerson, J. Green

Relationship between formant transition and intelligibility in quiet versus noise in PD

 Y. Chiu, K. Forrest

Emotional dysprosody in speakers with hypokinetic dysarthria associated with Parkinson’s disease

 L. Kwan, M. Ng

Familiarization effects on intelligibility of dysarthric speech in older listeners with and without hearing loss

 K. Lansford, S. Borrie, S. Luhrsen, E. Ingvalson

Predicting optimal surface electromyographic augmentative and alternative communication device control in individuals with motor speech disorders

 J. Vojtech, G. Cler, S. Fager, C. Stepp

Examining the effect of PD on clear speech using utterance-level vowel space metrics

 J. Whitfield, D. Mehta, C. Walsh

Effect of overlapping tasks on vocal and manual response in PD

 A. Reif, D. Summers, A. Goberman

Spectral/Cepstral Analysis of Phonation in Parkinson's disease before and after Voice Treatment

 G. Alharbi, M. Cannito, E. Buder

Effects of clear speech on the silent interval duration in speakers with Parkinson disease

A. Gravelin, J. Whitfield

Not only a motor speech deficit: vowel-duration discrimination of children with CAS

 S. Ingram, V. Reed

Listener impressions of speakers with dysarthria secondary to cerebral palsy

 K. Connaghan, D. Reilly, R. Patel

Deviant coarticulation in children with CAS does not include hyperarticulation

 H. Terband

**10:00 AM Pediatric Motor Speech**

Treatment amount and intensity in childhood apraxia of speech

 E. Maas, C. Gildersleeve-Neumann, K. Jakielski, N. Kovacs, R. Stoeckel, H. Vradelis, M. Welsh, A. Van Zelst

Whole brain connectivity in childhood apraxia of speech and the effects of intervention

A. Chilosi, I. Podda, S. Fiori, K. Pannek, B. Franchi, P. Cipriani

Differentiating typical from atypical speech production using measures of intelligibility, speech rate and intelligible words per minute in 5 year old children with CP: A comparative anlaysis

 K. Hustad, A. Sakash, A. Broman, P. Rathouz

Clinical validation of the Computer Articulation Instrument (CAI)

B. Maassen, S. Diepeveen, L. van Haaften, H. Terband, L. van den Engel, B. de Swart

**11:20 AM Break**

**11:35 AM AOS Diagnosis and Treatment**

Prosodic and phonetic subtypes of Primary Progressive AOS

 R. Utianski, J. Duffy, H. Clark, E. Strand, H. Botha, C. Schwarz, M. Machulda, M. Senjem, A. Spychalla, C. Jack, R. Petersen, V. Lowe, J. Whitwell, K. Josephs

Effect of treatment intensity on outcomes of Sound Production Treatment for apraxia of speech

 J. Wambaugh, S. Wright, C. Nessler, E. Boss, S. Mauszycki, P. Doyle, W. Hula

Word-level prosodic measures and the differential diagnosis of apraxia of speech

 K. Haley, A. Jacks

**12:35 PM Afternoon free**

**SATURDAY, FEBRUARY 24, 2018**

**7:30 CONTINENTAL BREAKFAST**

**8:00 AM Poster Session**

The consequences of oromandibular dystonia on communicative participation: A qualitative study of the insider's experience

 A. Page, L. Siegel, C. Baylor, S. Adams, K. Yorkston

Perceptual consequences of speech cues in French-speaking children with dysarthria

 E. Levy, G. Moya-Gale, L. Romero-Gomez, Y. Hwa Chang, A. MacLeod, S. Majdalani, N. Della-Posta, C. Maillart

Examining the Relation between Infant Oromotor Behaviors and Maternal Prosody of Speech

 E. Zimmerman, D. Alu, K. Connaghan

Dysarthria profiles in hereditary ataxia

 M. Dawson, K. Spencer

Acoustic metrics of consonant inconsistencies and stress difficulties differentiate between children with and without CAS

 T. Macrae, K. Lansford, K. Jakielski

A multi-subsystem approach to predicting speech intelligibility in older adults

 J. McKinley, M. Kuruvilla-Dugdale, M. Dietrich

Effects of prosody on intelligibility, communication efficiency, and perceived naturalness of synthetic speech in AAC

 J. Vojtech, J. Noordzij, G. Cler, C. Stepp

Speech motor control in children with apraxia in a task of motoric complexity

 J. Case, M. Grigos

Effects of speaking task on bidirectional dual-task interference in individuals with Parkinson disease

 J. Whitfield, Z. Kriegel, M. Natal, A. Fullenkamp, D. Mehta, A. Gravelin

Surface EMG control of fundamental frequency modulation using submental muscles: Enhancing alaryngeal prosody

 K. Nagle, R. Dorward, C. Donoso, J. Heaton

Validity of phonetic and prosodic subtypes of PAOS using the ASRS-3

 E. Strand, H. Clark, J. Duffy, H. Hanley, R. Utianski, K. Josephs

Functional boundaries within the cortical speech motor control network

 J. Tourville, A. Nieto-Castanon, F. Guenther

Acquired AOS: Examining the relationship between treatment and generalization outcomes

 S. Mauszycki, C. Nessler, J. Wambaugh

Vowel error patterns in individuals with dysarthria secondary to ALS

 J. Lee, Y. Jung, H. Kim

Impact of Parkinson’s on Use of Meaningful Speech Automatisms

 A. Alvar, J. Huber, J. Yeon Lee

Impaired Responses to Time-shifting Perturbations in Adults Who Stutter during Rhythmic and Non-Rhythmic Speech

 S. Frankford, S. Cai, F. Guenther

How well does DDK task performance predict fluent speech articulation?

 F. Karlsson, M. Karlsson, L. Hartelius

What is the sound source in audible nasal emission?

 L. Oren, H. Hashemi HOsseinabad, A. Kummer, P. Willging, S. Boyce

Predicting disease-related changes in jaw contribution to tongue movement in ALS based on a diadochokinetic task

 P. Rong, K. Stipancic, J. Green

Effect of Cognitive Load on Speech Motor Performance in Healthy Younger and Older Adults

 M. MacPherson, N. Sadagopan, M. Kuruvilla-Dugdale

Correlation of Apraxia of Speech Rating Scale (ASRS) scores to ratings of intelligibility

 L. Bunker, D. Bailey, S. Mauszycki, J. Wambaugh

Acceleration of Tongue and Lip Movements of individuals with ALS

 K. Teplansky, J. Green, J. Wang, T. Campbell, Y. Yunusova

**9:30 AM AOS Models**

Testing hypotheses about the underlying deficit in AOS through computational modeling: Effects of noise masking on vowel production in the DIVA model

 H. Terband, J. Rodd, M. Planck, E. Maas

Neural correlates of prosodic measures in adults with aphasia and/or apraxia: A lesion-behavior mapping study

 A. Jacks, K. Haley, T. Harmon, M. Eshghi

Examining feedback and feedforward speech motor control in acquired apraxia of speech using auditory F0 and F1 perturbation

 K. Ballard, M. Halaki, P. Sowman, A. Kha, A. Daliri, D. Robin, F. Guenther, J. Tourville

**10:30 AM Break**

**10:45 AM Special Session:**

A decade of research into primary progressive apraxia of speech

K. Josephs

**12:15 PM Lunch**

**1:15 PM Poster Session**

The effect of manner of articulation and sequence complexity on articulatory movements following training

 K. Meigh, Y. Yunusova

Articulatory kinematics during stop closure in speakers with Parkinson’s disease: further data

 Y. Kim, A. Thompson, J. Berry, C. Kuo

Auditory-Motor Control of Vocal Vibrato

 R. Lester-Smith, L. Cherney, C. Larson

Acoustic and Aerodynamic Comparison of Vocal Dynamics in Parkinson’s Disease and Vocal Fold Atrophy

C. Dastolfo-Hromack, J. Gartner Schmidt, V. Young, A. Gillespie, T. Pirnia, M. Richardson, S. Shaiman

Perceptual analyses of apraxia of speech characteristics in nonfluent and fluent aphasia

 M. Cannito, K. Millard, M. Hough

Immediate Effects of Velopharyngeal Resistance Training (Continuous Positive Airway Pressure) on Vowel Articulation: Preliminary Acoustic Findings

 Y. Bae, S. D’Agostino, A. Woods

Systematic review of assessment strategies in pediatric motor speech disorders

 R. McCauley, E. Strand

Neural processing of perturbed voice auditory feedback in volitional vocal pitch changes

 J. Kim, C. Larson

Detection and correction of acoustically deviant speech in persons with aphasia

C. Niziolek, S. Kiran

Errors in targeted motor speech tasks contained in the Caterpillar passage

 J. Laures-Gore, S. Silverman, S. Russell, R. Patel

Examining distortion errors in persons with aphasia with and without AOS

 L. Bislick

Vowel space changes associated with auditory perturbations to multiple vowels

 K. Reilly, D. Jenson

Prosodicons: Adaptable Icons For Improving Prosody Through Literacy

 D. Reilly, K. Christopulos, K. Najarian, K. Hochberger, S. Haley, Y. Bolotovskaya, R. Patel

Effects of phonetic complexity on tongue motor performance in progressive dysarthria

 M. Kuruvilla-Dugdale, A. Mefferd

Decoding articulatory information from electrocorticography during speech production

 J. Brumberg, T. Biro

Dopaminergic medication changes speech-related sensory mechanisms in Parkinson's Disease

 M. Hammer, K. Foster

Dual-task interference on speech fluency during story retell for people with AOS

 T. Harmon, A. Jacks, K. Haley

The impact of Levodopa-induced dyskinesias on acoustic speech measures in PD

 E. Wang, C. Blodgett, L. Verhagen Metman

Impact of transcranial direct current stimulation on the speech of fluent participants

 P. Howell, N. Bashir

The role of auditory feedback for speech intensity regulation in PD

 A. Abeyesekera, S. Adams, A. Page, M. Jog

Deep Brain Stimulation of subthalamic nucleus versus globus pallidus interna for idiopathic PD: A comparative pilot speech outcome study

 K. Tjaden, J. Greenlee, D. Corcos

A perceptual learning paradigm to support production of a non-native vowel contrast

 H. Campbell, G. Go, S. Levi

Eye movements and prosody during reading in individuals with PD

 E. Park, F. Boutsen, J. Dvorak

**2:45 PM Novel Approaches**

Generalized adaptation to dysarthric speech

 S. Borrie, K. Lansford

Do individual differences predict learning outcomes in biofeedback training?

 J. Jingwen Li, S. Ayala, D. Shiller, T. McAllister Byun

Crowdsourced collection and analysis of spoken data

 R. Patel, M. Suen, G. Meltzner

**3:45 PM Break**

**4:00 PM Advances in Clinical Populations**

Changes in speech production and facial movement pre and post facial transplant

 M. Grigos, E. LeBlanc, C. Hagedorn, E. Rodriguez

Video-based facial tracking for the assessment of motor speech disorders: Application to ALS

 A. Bandini, J. Green, Y. Yunusova

Temporal differences in a quasi-speech task: A comparison of highly intelligible speakers with Multiple Sclerosis (MS) and neurologically intact speakers

 D. Matheron, K. Tjaden

Predictors of Speech Severity and Sentence Intelligibility for Speakers with Multiple Sclerosis

 L. Feenaughty

**SUNDAY, FEBRUARY 25, 2018**

**7:30 Continental Breakfast**

**8:00 AM Advances in Management of Parkinson Disease**

Clear Speech variants: An investigation of intelligibilty in Parkinson's Disease

 K. Tjaden, A. Kain, J. Lam, G. Wilding

Prosodic Profiles in Parkinson's Disease and the Therapeutic Effects of SpeechVive on Prosody in Parkinson's Disease

 B. Kiefer, M. Darling-White, C. Rountrey, C. Ludlow, S. Snyder, J. Huber

Tongue- and Jaw-Specific Displacement Changes in Response to Slow, Loud, and Clear Speech and their Acoustic Consequences in Talkers with Parkinson’s Disease

 A. Mefferd

**9:00 AM Break**

**9:15 AM Neural Stimulation**

Noninvasive Brain Stimulation Enhances Sub-phonemic Learning of Novel Consonant Clusters

 A. Buchwald, M. Steinberg Lowe, H. Calhoun, R. Wellner, S. Rimikis

Augmenting the Behavioral and Neurophysiological Effects of Voice Treatment by Adjuvant Transcranial Magnetic Stimulation

 S. Narayana, K. Schiller, B. Bydlinski, M. Le Doux, A. Choudhri, T. Jones, M. Cannito

Effect of an acute bout of expiratory threshold loading (ETL) and transcranial direct current stimulation (tDCS) on chest wall intermuscular coherence in healthy adults

 A. Reed, R. Bakhtiari, H. Gynane, A. Chang, C. Boliek

**10:20 AM Adjournment**