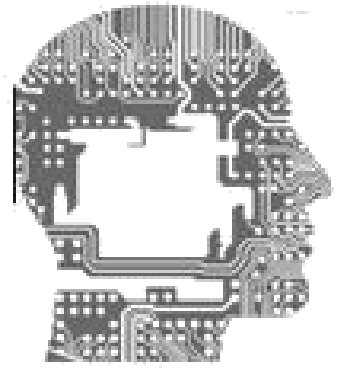
Meet the Masters

20TH ANNIVERSARY

Wednesday, **NOVEMBER 15, 2023**, 5-7 PM
Boston Convention Center



Artificial Intelligence and Computational Deglutology: State of the Science and Dreams For the Future of Swallowing

Artificial Intelligence/Machine learning methods are permeating all aspects of health and physiologic measurement — including swallowing. Powerful and promising tools are emerging, addressing all aspects of swallowing to assist SLPs in exploring associations between disease and swallowing events, muscle movements, sounds and sensor-measured signals. The application of these advanced, deep-learning techniques — including neural network development and testing, the evaluation of different sensor types, and the dissemination of commercialized products and smartphone apps — will be discussed and explored. The future of computational deglutology and the application of these tools into clinical practice will be presented.

Join us for this exciting look at the horizon of swallowing, including discussion of where we are now, how accurate the tools are, and where to find them. Our esteemed panel will also take a look at potential benefits and challenges, where the future of our field is headed…and perhaps the biggest question of all:

Will AI replace us as clinicians?

PROGRAM

5:00 pm	**Where are we:** Introduction and overview of movement toward advanced computer/AI driven or technology tools for the identification and monitoring of dysphagia **Giselle Carnaby, MPH,PhD, CCC-SLP. F-ASHA**
5:10 pm	**How accurate can they be:** The role of AI (ML/DL) models in accurately predicting events and movements of swallowing/breathing **Cara Donohue, PhD, CCC-SLP**
5:30 pm	**Where can I find them:** Systems that being commercialized (close to commercialization), and the niche they fill **Cagla Kantarcigil, PhD, CCC-SLP**
5:50 pm	**Where are we going:** Future steps in advanced swallow recognition and analysis **Ervin Sejdić, BESc., PhD**
6:10 pm	**Will it replace me:** dissemination of these technologies can fit into the clinical profile of swallowing and its application into real world settings **James Coyle, PhD, CCC-SLP, BCS-S, F-ASHA**
6:30 pm	**What are the benefits and drawbacks:** Pitfall and strengths of these approaches in their application **Faculty Panel**
6:50 pm	Q&A
7:00 pm	Adjourn

LEARNING OBJECTIVES: At the end of this course you will be able to

- Describe the movement toward advanced computer/AI driven or technology tools for the identification and monitoring of dysphagia
- Describe the role of AI(ML?DL) models in accurately predicting events and movements of swallowing/breathing
- Identify the pitfall and strengths of these approaches and their application
- Describe current systems being commercialized (close to commercialization), and the neiche they fill
- Describe the future steps in advanced swallow recognition and analysis
- Describe how dissemination of these technologies can fit into the clinical profile of swallowing and its application into real world settings

This **FREE** course is designed for Speech Language Pathologists and researchers seeking to learn about the advances in the field of advanced deep learning techniques for the measurement of swallowing and swallowing related processes. Participants will be presented with information regarding the latest updates in this area. Information surrounding the development and use of different sensor types, the dissemination of commercialized products using AI and machine learning and smartphone apps for swallowing evaluation and monitoring will be discussed. The future of computational deglutology and the application of these forms of tools into the clinic will be presented.

Register *today* to attend Meet The Masters
Wednesday, November 15, 2023, 5-7pm
by going to www.MTMSLP.com

FACULTY BIO INFORMATION

Giselle Carnaby, MPH, PhD, CCC-SLP. F-ASHA

University of Texas Health Science Center, San Antonio
Professor and Program Director, Health Sciences

An academic research career was not what Dr. Carnaby had envisioned for her future when she began practicing as an SLP, but, several years into practice, she found herself frustrated by questions she could not find answers for in the literature. A neurologist she met while working in an acute care hospital would become one of her mentors and encouraged Dr. Carnaby to pursue her MPH, a decision that launched a decades-long career steeped in interdisciplinary research and collaboration.

Cara Donohue, PhD, CCC-SLP

Vanderbilt University, School of Medicine
Assistant Professor in the Department of Hearing and Speech Sciences

Cara completed her doctoral studies in the Computational Deglutition Lab under the mentorship of Dr. Jim Coyle and her post-doctoral research fellowship in the Aerodigestive Research Core Laboratory at the University of Florida under the mentorship of Dr. Emily Plowman. Current research interests include instrumental methods of swallow screening and signal processing, respiratory interventions to improve cough and swallowing in patients with neurological/respiratory diseases, and principles of exercise training in dysphagia rehabilitation.

Cagla Kantarcigil, PhD, CCC-SLP

Ohio State University
Assistant Professor, Department of Speech and Hearing Science

Dr. Kantarcigil completed her PhD at Purdue University. Her areas of expertise include telehealth and wearable sensor technologies, which facilitate remote evaluation and treatment of swallowing disorders and allow clinicians to provide effective, accessible care. Dr. Kantarcigil is co-investigator for: Training swallowing initiation during expiration: Impact on safety and efficiency following treatment for oropharyngeal head and neck cancer.

Ervin Sejdić, BESc., PhD

Faculty, University of Toronto
Research Chair in Artificial Intelligence for Health Outcomes at Research & Innovation, North York General Hospital
Associate Professor, Edward S. Rogers Sr. Department of Electrical & Computer Engineering, University of Toronto

Dr. Sejdić's passion for discovery and innovation drives his constant endeavors to connect advances in engineering to society's most challenging problems. Hence, his research interests include biomedical signal processing, gait analysis, swallowing difficulties, advanced information systems in medicine, rehabilitation engineering, assistive technologies and anticipatory medical devices.

James Coyle, PhD, CCC-SLP, BCS-S, F-ASHA

University of Pittsburgh
Professor in Communication and Science Disorders, Otolaryngology and Electrical and Computer Engineering

Dr. Coyle is currently investigating noninvasive sensor-based technologies in the screening and diagnosis of oropharyngeal dysphagia.

ASHA CE APPROVED PROVIDER

American Board of Swallowing and Swallowing Disorders

Intermediate Level

.20 ASHA CEUs

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FACULTY DISCLOSURE INFORMATION

Dr. Giselle Carnaby
Financial—salary paid by University of Texas; Invention disclosure/patent for University of Florida/Carnaby: Automated Swallow Frequency Meter (UF 13402;TK 222106-8830; 2010)

Non-Financial—none

Dr. Cara Donohue
Financial—salary paid by Vanderbilt University

Non-Financial—ASHA SIG 13 Coordinating Committee; ASHA Adult Swallowing Convention Planning Member; DRS Member

Dr. Cagla Kantarcigil
Financial—salary paid by Ohio State University

Non-Financial—none

Dr. Ervin Sejdić
Financial—salary paid by University of Toronto; Stipend from North York General Hospital

Non-Financial—none

Dr. James Coyle
Financial—salary paid by University of Pittsburgh; speaker fees from Northern Speech Services; grant funding from NIH

Non-Financial—none

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