

NeuroAudiology Newsletter

Editor: Alyssa
Davidson, PhD, AuD,
CCC-A
Supervisor: Frank
Musiek, PhD, CCC-A

Looking to the Past to Move Forward

The NeuroAudiology Lab at the University of Arizona began a new series of projects, The History of Audiology: Diagnostics. Ubiquitous discussions among many audiologists for a number of years has been about the lack of attention, presentations, and articles to our rich history. In part, motivated by the Kaiser Permanente audiology group who requested Frank Musiek to speak on the topic, the NeuroAudiology lab has initiated a major research effort gathering

and synthesizing historical information on the field of audiology. Specifically, this effort will focus on diagnostic audiology, which has long been a rich heritage for our field. Seniors in our field are being contacted for input, as well as reviews of ground breaking articles, books and news accounts are being conducted. Also included in the historical account of diagnostic audiology will be, “behind the scenes” stories relayed by those who have experienced these sometimes eye opening discussions – not commonly known to most.

The “saga” of diagnostic audiology will focus on early leaders, tests and equipment and then move into the cochlear vs. retro-cochlear procedures, including immittance and OAEs. A section on auditory evoked potentials followed by central auditory disorders/ NeuroAudiology is being developed. So far, this research effort into our history has been intriguing, enlightening and enjoyable.

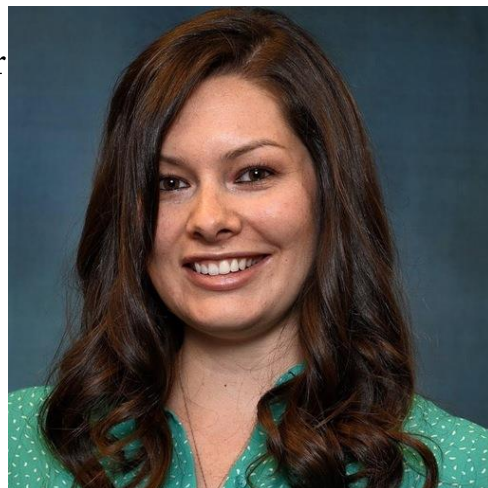
AUDIOLOGY TRIVIA

ANSWERS ON THE LAST PAGE

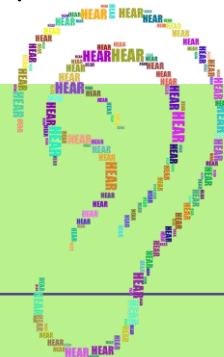
- 1) The first publication on Masking level differences (MLD) was in 1948 by which investigator?
a) Zwillocki, b) Carhart, c) Hirsh, d) Stevens
- 2) Who was the first president of the American Auditory Society (AAS)?
a) Downs, b) Wilbur, c) Katz, d) Glorig
- 3) In adults, what is the latency (ms) for MLR Pa wave using a moderate intensity click?
a) 15-20, b) 21-28, c) 29-35, d) 36-43

The Hearing Journeys Continue

It is with great excitement to announce that the editor of this newsletter, Alyssa Davidson, PhD, AuD, CCC-A (pictured right), has completed her postdoctoral fellowship at Northwestern University and accepted a Research Audiologist position at Walter Reed National Military Medical Center. Dr. Davidson will be working with well-known senior researchers such as Ken Grant, PhD and Doug Brungart, PhD. At Walter Reed, Dr. Davidson will continue to pursue her interests in NeuroAudiology, auditory processing, hearing health outcomes, and improving patient care.



Barrett St. George, PhD (pictured left), is a long-standing member of the NeuroAudiology lab, working with Dr. Frank Musiek. In July 2021, Dr. St. George successfully defended his PhD and now he will continue on to complete his Doctor of Audiology degree. Dr. St. George will complete his 4th year AuD externships in St. George, Utah...how appropriate! Congratulations, Barrett, the world needs more dedicated clinical researchers such as yourself!



NeuroAudiology/CAPD Corner



Topic: Common errors in the administration of the Frequency/Duration Pattern Tests. By: Frank Musiek

The frequency (pitch) and duration patterns tests are popular clinical tests for (at least in part) assessing temporal sequencing ability. Over the years, on various occasions, I have noticed these tests may not be administered in the manner for which they were designed. Therefore, we thought it would be appropriate to mention three of the most common errors we have noticed and what should be done instead. So here they are:

1- Reversals of a pattern are scored as correct. This is wrong! Early on, reversals were considered correct because the early research showed that most neurotypical persons have a small percentage of reversals, i.e. H-L-H instead of L-H-L. However, further investigations with neurologically involved patients convinced us that reversals had to be considered incorrect and that has been the recommendation for over 30 years.

2- The audiologist does not instruct the patient to guess on patterns. Everyone taking the test should be directed to guess if they are unsure of their perception of the pattern. This directive was used in collecting normative data and therefore should be utilized in the clinical directions for the test.

3- Provide instructions on the test from the control booth via intercom. Instructions and practice test items should be conducted face to face with the patient in the sound booth. Provide a visual example of the test item by vocalizing & moving your hand to designate high vs. low and have the patient say the test token. Then omit the visual cue and provide them only vocal representation. Once the patient understands the directives move into the control booth and provide practice items from the test. Certainly, many patients do not require face to face instructions – but if there is any doubt, move from the control booth to the sound booth to face the patient. Reinstruct as needed.

CAPD Corner Suggested Readings

- Musiek, F. (2002). The frequency pattern test. *The Hearing Journal*, 55(6), 58. (Test administration)
- Musiek, F. & Pinheiro, M. (1987). Frequency patterns in cochlear, brainstem, and cerebral lesions. *Audiology*, 26, 79-88.
- Musiek, F. (1994). Frequency (pitch) and duration pattern tests. *J Am Acad Audiol*, 5, 265-268.

Spring Lectures: Frank Musiek

- Dichotic inter-aural intensity training (DIID). Theoretical constructs & clinical aspects - Aristotle University, Athens Greece, March, 1 2022 (remote) (1 hr)
- Gaps in Noise Test: Findings in Neurologically Based Central Auditory Disorders' (Keynote address). World Congress of Audiology, Warsaw, Poland, April 10 -13 (in person or remote TBD) (30 min)
- CAPD: Recent issues. Arizona State University, Tempe, AZ (in person or remote TBD) (1 hr) and or Mayo Clinic, Scottsdale, AZ
- History of Audiology: Diagnostics, An overview. May 3, 2022, Kaiser Permanente Audiology Symposium, Oakland CA. (Remote) (3 ½ hrs)

Publication 40th Anniversary

This year marks the 40th anniversary of our paper on Charcot Marie Tooth Syndrome: Musiek, F.E., Weider, D. & Mueller, R. (1982). Audiological Findings in Charcot-Marie-Tooth Disease. *Arch. Otolaryn Head Neck Surg*, 108, 595-599. As best we can determine, this perhaps was the first paper reporting the association between CMT and neural auditory dysfunction as demonstrated by in depth diagnostic testing. In this case report, the middle-aged patient complained of severe problems in hearing speech. The patient showed a mild sensorineural hearing loss, absent ABR, elevated or absent acoustic reflexes, and poor performance bilaterally on central auditory tests including: dichotic listening, pattern perception, and filtered speech. Our referral to neurology yielded a definite diagnosis of CMT with hearing loss as the main symptom. CMT is now considered a part of ANSD.

AUDIOLOGY TRIVIA ANSWERS

- 1) The first publication on MLD in 1948 was (C) Ira Hirsh.
- 2) The first president of AAS was (D) Aram Glorig.
- 3) The MLR latency of the PA wave for a moderate intensity click in adults is (B) 21-29 milliseconds.

PAST NEWSLETTERS: All past newsletters can be found at: musiek.faculty.arizona.edu