

Music Resonates with Communication Sciences and Disorders



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American Speech-Language-Hearing Association

ASHA is the **professional, scientific, and credentialing** association for more than **182,000** members and affiliates in the United States and internationally.



American Speech-Language-Hearing Association

Vision

*Making effective communication,
which is a human right,
accessible and achievable for all.*



American Speech-Language-Hearing Association



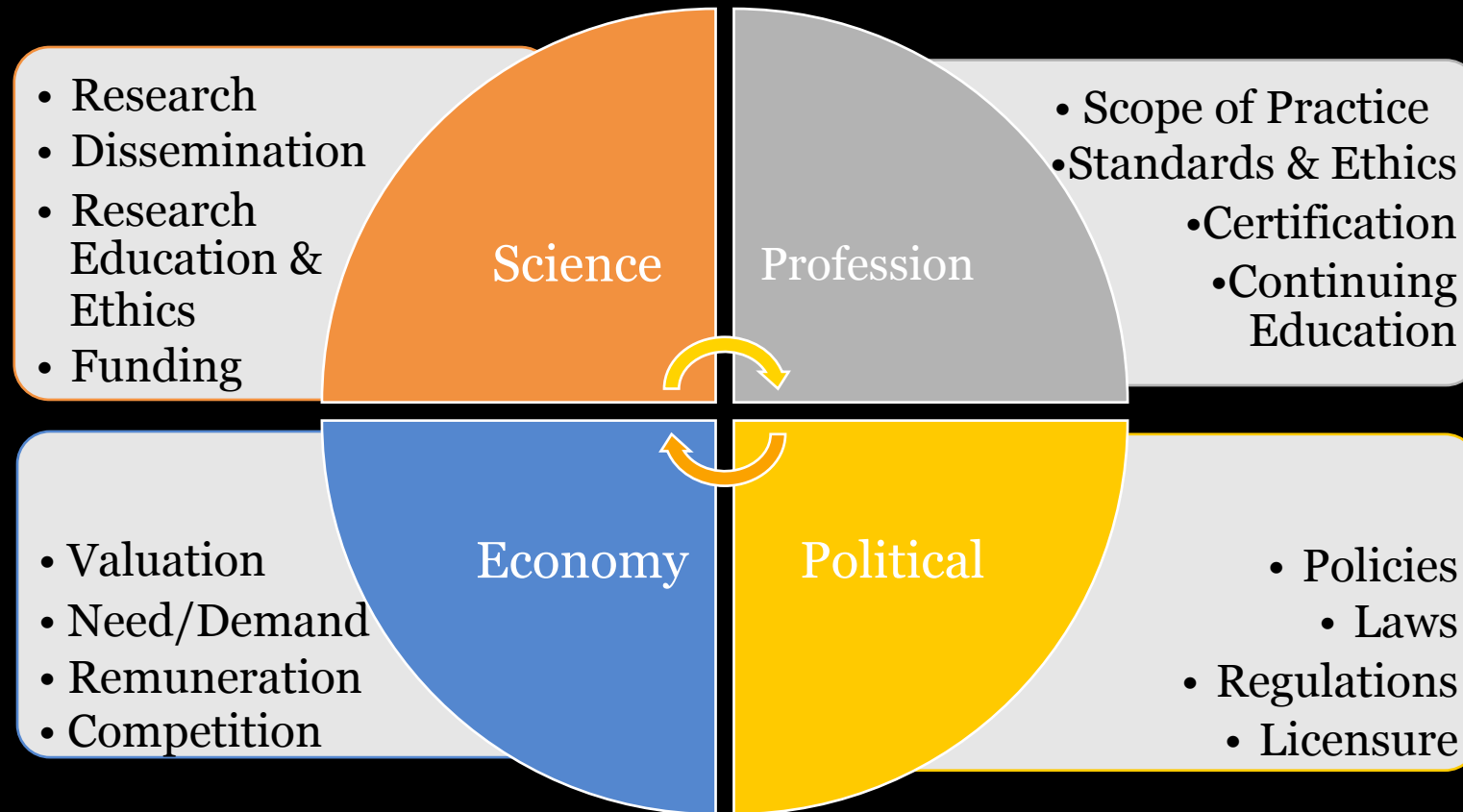
Members

- Audiologists
- Speech-Language Pathologists
- Speech, Language, Swallowing, Hearing & Balance Scientists

Affiliates

- International Affiliates
- National Student Speech-Language-Hearing Association (NSSLHA)
- Associates (support personnel)

ASHA Sustains the Discipline



By advancing all four domains in a coordinated and strategic way, the CSD discipline and professions of audiology and speech-language pathology have flourished in the USA.

In the Beginning

- Studied mathematics, music, and classical languages and literature. During his years in college he served as the organist and choir director of a Swedish-Lutheran church and his salary there paid most of his college expenses.
- Attended Yale when that school had just opened its psychology department under George Trumbull Ladd. In 1895, Seashore was awarded the school's first Ph. D in psychology for his dissertation on the role of inhibition in learning.
- Accepted a permanent position at the University of Iowa where he spent the remaining 50 years of his life, eventually serving as Chairman of the Department of Psychology & Dean of the Graduate School.
- Seashore was particularly interested in audiology, the psychology of music, the psychology of speech and stuttering, the psychology of the graphic arts and measuring motivation and scholastic aptitude. He devised the Seashore Tests of Musical Ability in 1919, a version of which is still used in schools in the United States.
- Considered a founding father of Biomusicology, Cognitive Musicology, Cognitive Neuroscience of Music, Culture in Music Cognition, Evolutionary Musicology, and Psychoacoustics.

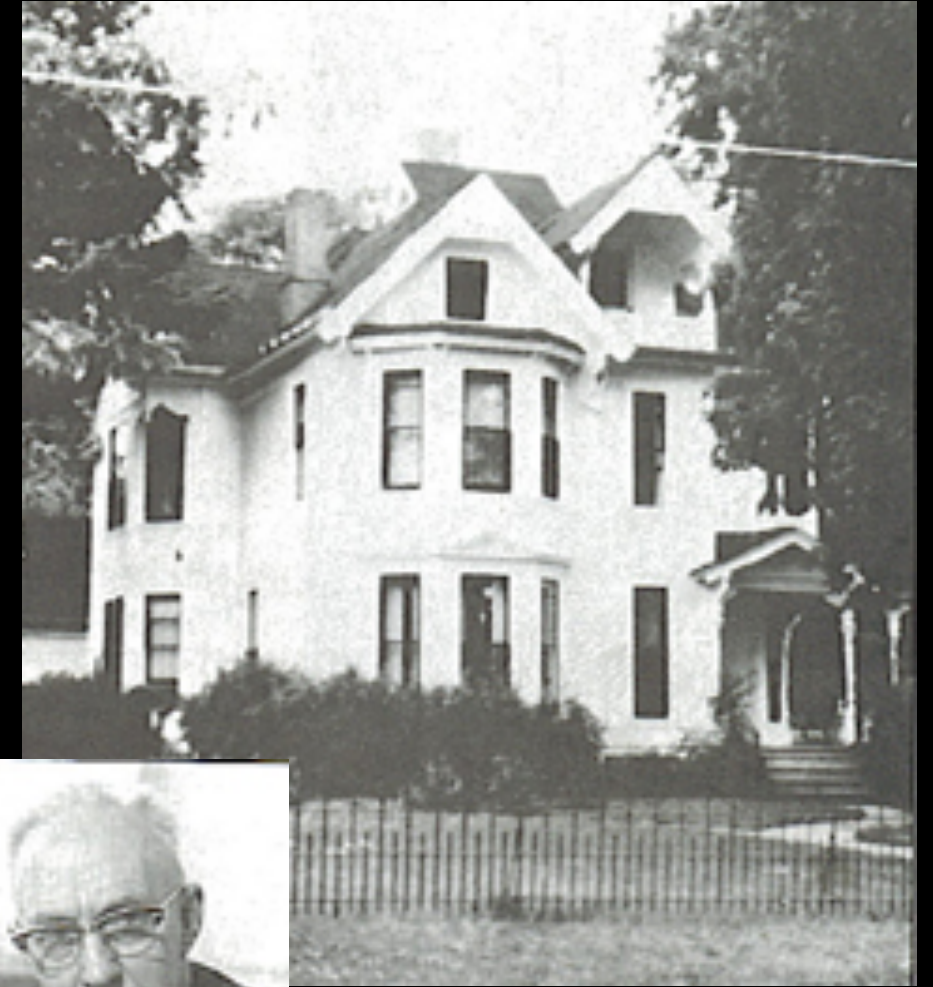


Carl Emil Seashore
1856-1949

In the Beginning

- “It was Carl Seashore, a professor of psychology and dean of the Graduate College at Iowa, who first started the snowball rolling in 1925. Gathering a small group of scholars for dinner and discussion at the home of Lee Edward Travis, Seashore put forth the possibility of forming an academy for speech correction independent of the National Association of Teachers of Speech. While NATS held an annual convention, and provided the only outlet for publication of scholarly research in its Quarterly Journal of Speech, the association had little interest in the scientific aspects of communication disorders.”

Home of Lee Travis and First ASHA National Office



An Early History of ASHA.
ASHA Magazine, November 1981
(Volume 23:11, pp. 855-858).

Charles Van Riper (1905-1994)

In the Beginning

- Lee Edward Travis was a founding father of the profession of Speech-Language Pathology in America. He was one of the 25 charter members of ASHA and was instrumental in setting up one of the first speech-pathology programs in the country located at the University of Iowa.
- His best known research was in the area of stuttering. In particular, he conducted a number of studies, that were aimed at validating his cerebral dominance theory of stuttering. He proposed, following the ideas of Samuel Orton at the University of Iowa, that lack of brain dominance resulted in stuttering symptoms. He was among the first in the USA to use electrophysiological measures for studying the brain.
- Founder and Director of the Psychology Clinic and Professor of Psychology and Speech at the University of Iowa from 1928-1937
- Worked with Carl Seashore for nearly ten years and together, they founded the first clinic and later department in CSD.



Lee Edward Travis
1896-1987

In the Beginning

Robert West
1892-1968



- “The actual break from NATS came about at the next convention in 1925 when a small group of 11 individuals led by Robert West held three rump sessions and formally organized the American Academy of Speech Correction.
- Many have asked me what it was about Iowa that produced so many of the individuals who built the first programs of speech pathology throughout the land and my only answer has been that it was Lee Edward Travis. This extraordinary man, tall, handsome, and athletic, had a profound impact on everyone he met. Possessed of a brilliant mind and huge energies, he was essentially a searcher for the truth. He wanted to know what and why and he explored the great unknowns.
- Travis made all of his students feel they were his comrades in that search, that they were fellow pioneers. He respected us and cared for us and expected more from us than we ever felt we could give or do. Travis had taught us to think for ourselves, to challenge the old beliefs, and to search for better theories and therapies.”



Carl Emil Seashore

A Biographical Memoir by Walter R. Miles

Copyright 1956 National Academy of Sciences Washington D.C.

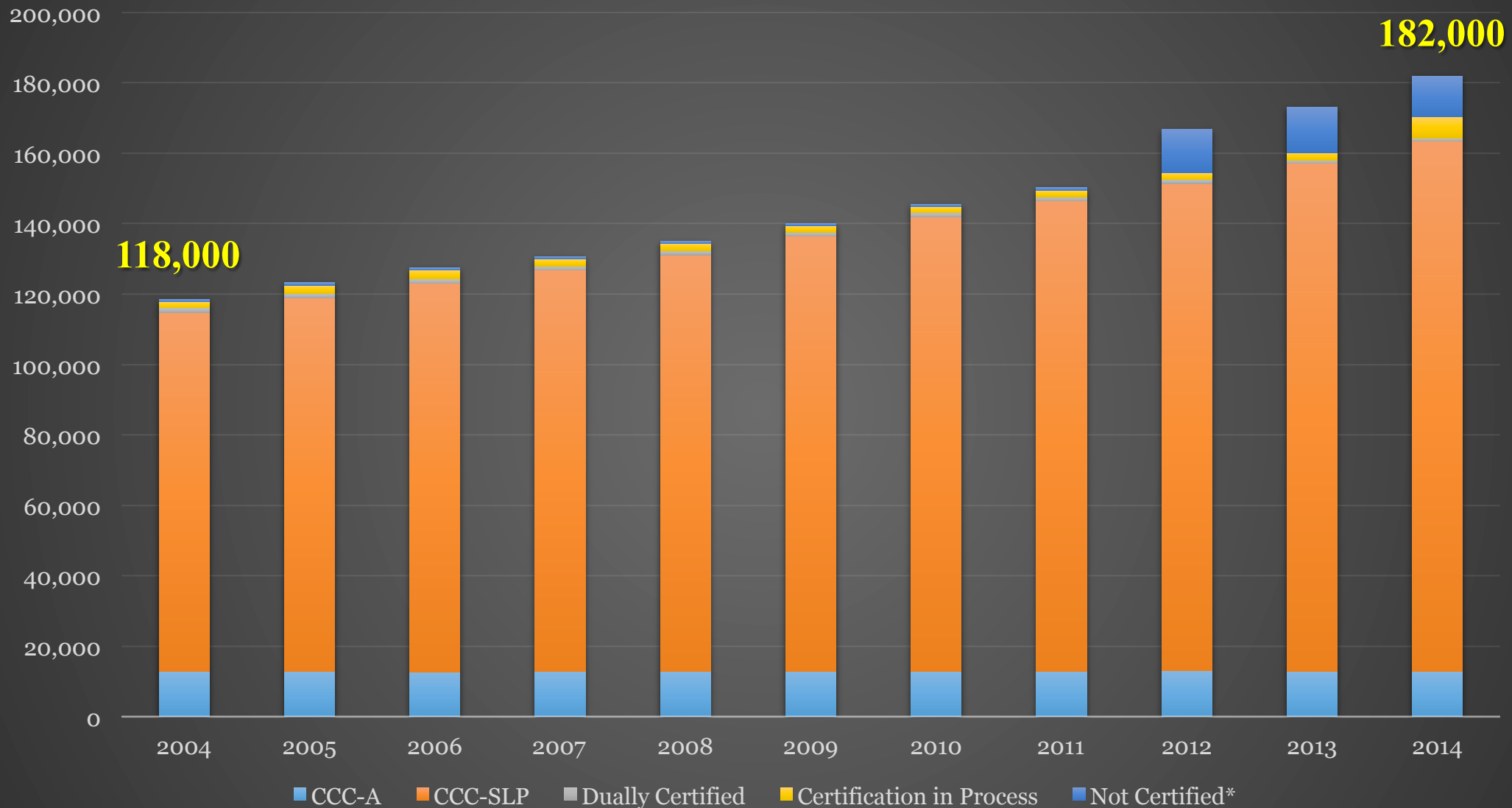
- “The surveying of musical talent in a school and predicting relative success or failure of its students were only beginning steps on the path that Dr. Seashore wished to travel. Dr. Seashore was asked how psychological skills could be improved by psychological methods.
- The Reading Clinic was another contribution from applied psychology developed from suggestions of Dean Seashore. Its first objective was "conduct of research in reading disabilities as a technical unit in the Personnel Service for Freshmen." Of course it also undertook remedial training at college level and offered cooperation with such activities in the School of Education as concerned the clinical treatment of children with reading disability.”

“Seashore was not the man to say “I am sorry, we cannot help you,” and it would be completely against his nature to indicate no interest in the presence of human need. Therefore one striking case of human malady might start a whole train of events and developments. Such an instance was the bringing to the Psychological Clinic of a child who had serious reading and speech disability. Dr. Samuel T. Orton, analyzing this problem as a neuropsychiatrist, and Dr. Seashore as a psychologist concluded that psychology and psychiatry should jointly undertake the training of one or more people in speech pathology. An exploratory program of this character was begun. We must recall that until the time when Seashore and his associates in psychiatry pooled the techniques and skills of the two disciplines for the purpose of dealing with stammering, this malady was not commonly treated by the medical profession but usually by quacks. Men like Dr. Lee E. Travis and Dr. Wendell Johnson, the latter having come to the clinic originally as a stutterer himself, were trained by Drs. Seashore, Orton, and their associates and became leaders in speech pathology.”

ideas that mushroom



Number of ASHA Members and Affiliates, 2004 to 2014



Speech-Language Pathologists - Children

Speech Disorders

- Speech sound disorders
- Late talkers
- Childhood Apraxia of Speech
- Dysarthria
- Stuttering
- Voice
- Cleft Lip and Palate
- Traumatic Brain Injury
- Deaf/Hard of Hearing

Pediatric Dysphagia

- Prematurity
- Low birth weight
- Structural abnormalities
- Neurological disorders

Language Disorders

- Language-based learning disabilities
- Specific Language Impairment
- Dyslexia
- Phonologic disorders
- Pragmatic disorders

Medical/Developmental Conditions

- Autism
- Attention Deficit Hyperactivity Disorder
- Genetic syndromes
- Cerebral Palsy
- Neurological disorders
- Complex medical conditions

Speech-Language Pathologists - Adults

Speech Disorders

- Dysarthria (neurologic)
- Trauma or surgery
- Apraxia of Speech
- Stuttering
- Voice Disorders
 - Alaryngeal Speech

Language Disorders

- Aphasia
- Alexia; Agraphia
- Primary Progressive Aphasia
- Other dementia

Elective Services

- Accent Modification
- Transgender Speech & Voice Modification

Dysphagia

- Stroke
- Cancer
- Degenerative neurologic conditions
- Trauma (brain, head, or neck)

Medical Conditions

- Dementia
- Traumatic Brain Injury
- Head & Neck Cancer
- Tracheostomy & Ventilator-dependent
- Stroke
- Degenerative neurologic conditions
 - Amyotrophic Lateral Sclerosis, Parkinson's, Multiple Sclerosis

Audiologists—Children

Assessment of Hearing Loss

- Screening (newborn, school-aged)
- Assessment Goals
 - Age specific testing
 - Type of hearing loss
 - SNHL, Conductive, Mixed, Cortical
 - Degree and Configuration of hearing loss
 - Diagnosis and Recommendations
- Testing
 - Auditory Brainstem Response (ABR)
 - Oto-Acoustic Emissions (OAE)
 - Immittance Testing
 - Pure Tone Audiometry
 - Word Recognition Tests
 - Special Tests (e.g., Speech in Noise)

Technology & Treatment

- Hearing Aids
- Cochlear, Middle Ear, & Brainstem Implants
- Hearing Assistive Technology Systems
- Audiologic & Aural Rehabilitation

Sensorineural Hearing Loss

- Hair Cell Damage
- Auditory Neuropathy

Conductive Hearing Loss

- Syndromes
- Otitis Media
- External and Middle Ear Malformations (e.g. Atresia)
- Perforated Tympanic Membrane
- Impacted Cerumen

Cortical

- Auditory Processing Disorder
- Cortical Deafness
- Traumatic Brain Injury

Balance

- Childhood vertigo
- Migraine

Prevention

- Noise induced hearing loss
- Head injury
- Tinnitus
- Counseling & Education

Audiologists-Adults

Sensorineural Hearing Loss Conductive Hearing Loss

- Traumatic Brain Injury
- Genetics
- Skull based tumors
- Ototoxic medication
- Noise induced hearing loss
- Aging
- Syndromes
- Tinnitus
- Metabolic disorders
- Meniere's Disease

- Otitis Media
- Atresia
- Syndromes
- Otosclerosis
- Eustachian Tube Dysfunction
- Perforated Tympanic Membrane
- Impacted Cerumen

Balance

- Benign Paroxysmal Positional Vertigo (BPPV)
- Migraine
- Traumatic Brain Injury

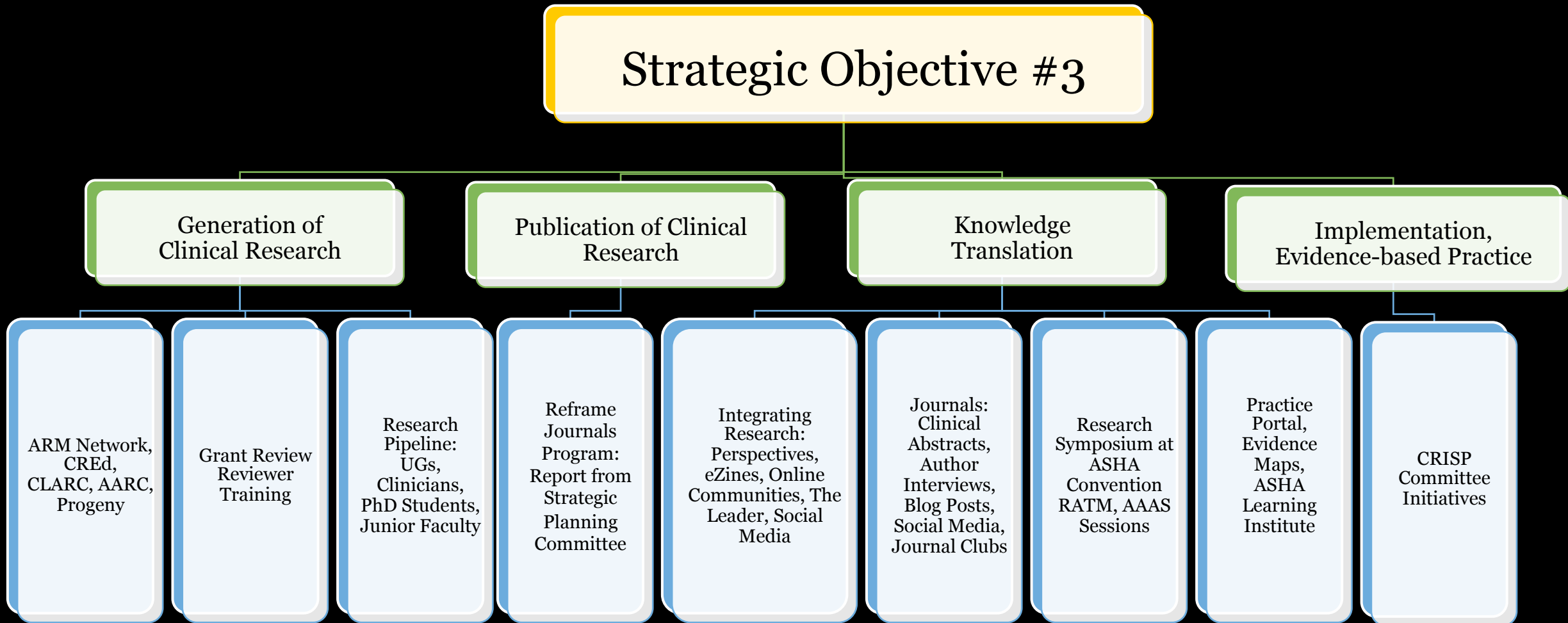
Technology & Treatment

- Hearing Aids
- Cochlear Implants, Middle Ear Implants, & Brainstem Implants
- Hearing Assistive Technology Systems
- Audiologic and Aural Rehabilitation
- Counseling, Education & Referral

Prevention

- Noise
- Head injury
- Tinnitus
- Counseling & Education

Enhance the Generation, Publication, Knowledge Translation, & Implementation of Clinical Research



Enhance the Generation of Clinical Research

The **CREd Library** connects emerging scientists with multimedia resources on topics critical to the conduct and advancement of a high-quality program of clinical practice research in CSD.



Pathways aims to assist early-career clinical scientists in developing strong foundations for independent research careers.
(Co-Sponsored by NIDCD: U24-DC01207)



Lessons for Success aims to support emerging scientists in the areas of grant preparation, development and management of a successful program of research, and advancement of professional



The Clinical Practice Research Institute (CPRI) aims to accelerate the generation of clinical research in CSD by supporting researchers to plan and prepare federal grants to fund clinical research.

Lessons for Success Succeeds

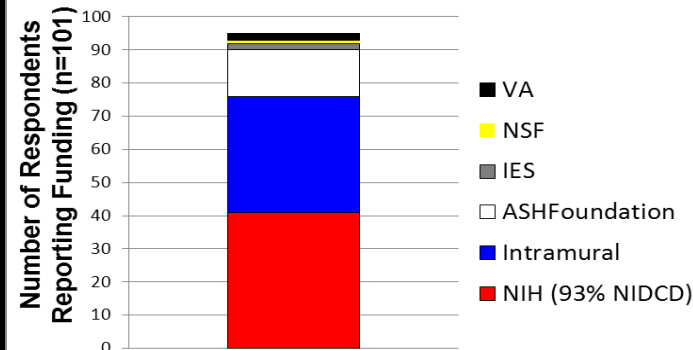
Distribution of awards within 2-years of participation in LfS

Fig. 1 Number of Respondents Awarded NIH Funding Post-Lessons for Success, by Mechanism



The success rate was **39%** for all NIH applications.

Fig. 2 Number of Respondents Awarded Funding Post-Lessons for Success, by Funding Source

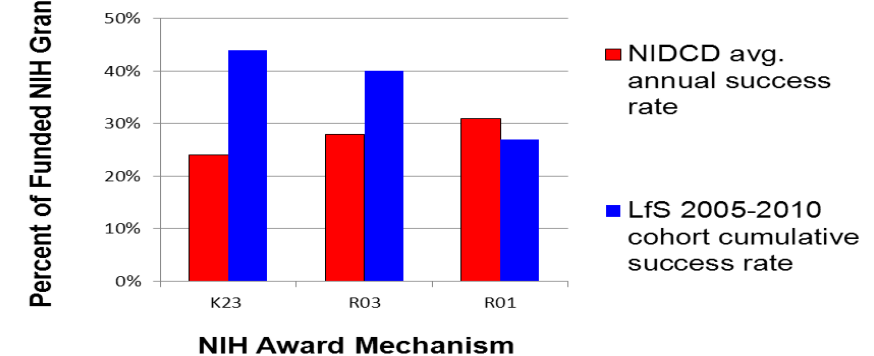


The proportion of protégés receiving NIDCD grants is considerably higher than the general NIDCD applicant pool.



The overall **success rate** was **94%** across all funding sources

Fig. 3 NIDCD and Lessons for Success Participant Success Rates by NIH Award Mechanism



Enhance the Generation of Clinical Research

PRomoting the next GENeration of Researchers (PROGENY)

aims to encourage the development of young scientists in CSD. PROGENY pairs faculty researchers with undergraduate students who are first authors on presentations at the ASHA Convention.

Students Preparing for Academic-Research Careers (SPARC)

aims to foster students' interest in the pursuit of PhD education in CSD.

Student Research Travel Award (SRTA)

aims to help students attend ASHA's annual Convention to highlight the research of emerging scientists and encourage science careers.

Advancing Academic-Research Careers (AARC) Award

aims to support the academic-research careers of junior-level faculty in CSD. Two awards earmarked for applicants engaging in clinical practice research & two for IPE.

Audiology/Hearing Science Research Travel Award (ARTA)

aims to foster science careers among AuD and Hearing Science graduate students & attend the ASHA Convention.

Research Mentoring-Pair Travel Award (RMPTA)

aims to foster scientific exchange & mentoring support to students, clinicians, and emerging scientists who have expressed

Enhance the Generation of Clinical Research

Grant Review and Reviewer Training

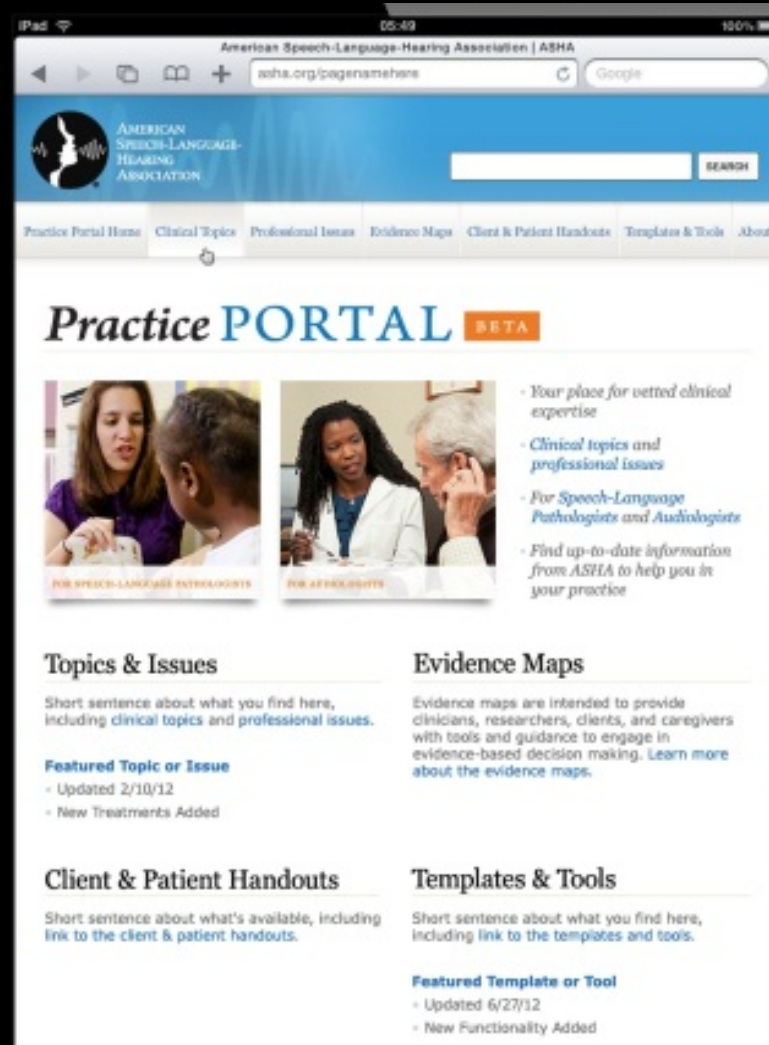
- Brings experienced and junior scientists to review ASHF grant applications for:
 - New Investigators Grant Mechanism
 - New Century Grant Mechanism
- Aims to prepare junior reviewers to serve effectively as reviewers at the federal level



Enhance the Knowledge Translation of Clinical Research



ASHA's Practice Portal



Practice Portal Topics

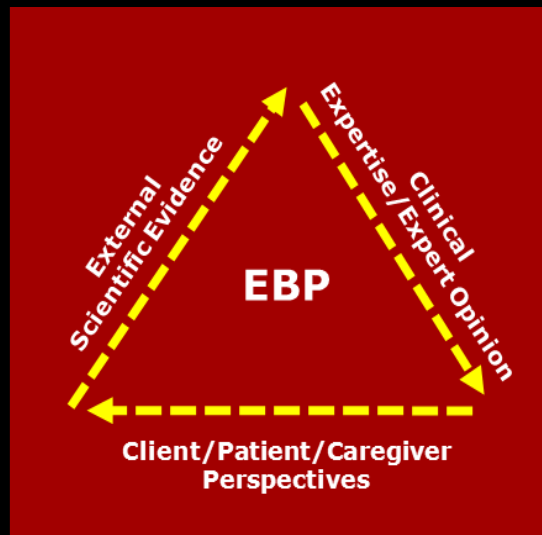
Clinical Topics

- Autism
- Child Language Disorders
- Dementia
- Fluency - children
- Hearing Aids – Adults
- Infant Hearing Screening
- Sensorineural Hearing Loss
- Traumatic Brain Injury
- Speech Sound Disorders
- Auditory Processing Disorders
- Aphasia
- Pediatric Dysphagia
- Permanent Childhood Hearing Loss
- Social Communication Disorders
- Spoken Language Disorders
- Traumatic Brain Injury
- Voice Disorders
- Childhood Apraxia of Speech
- Written Language Disorders

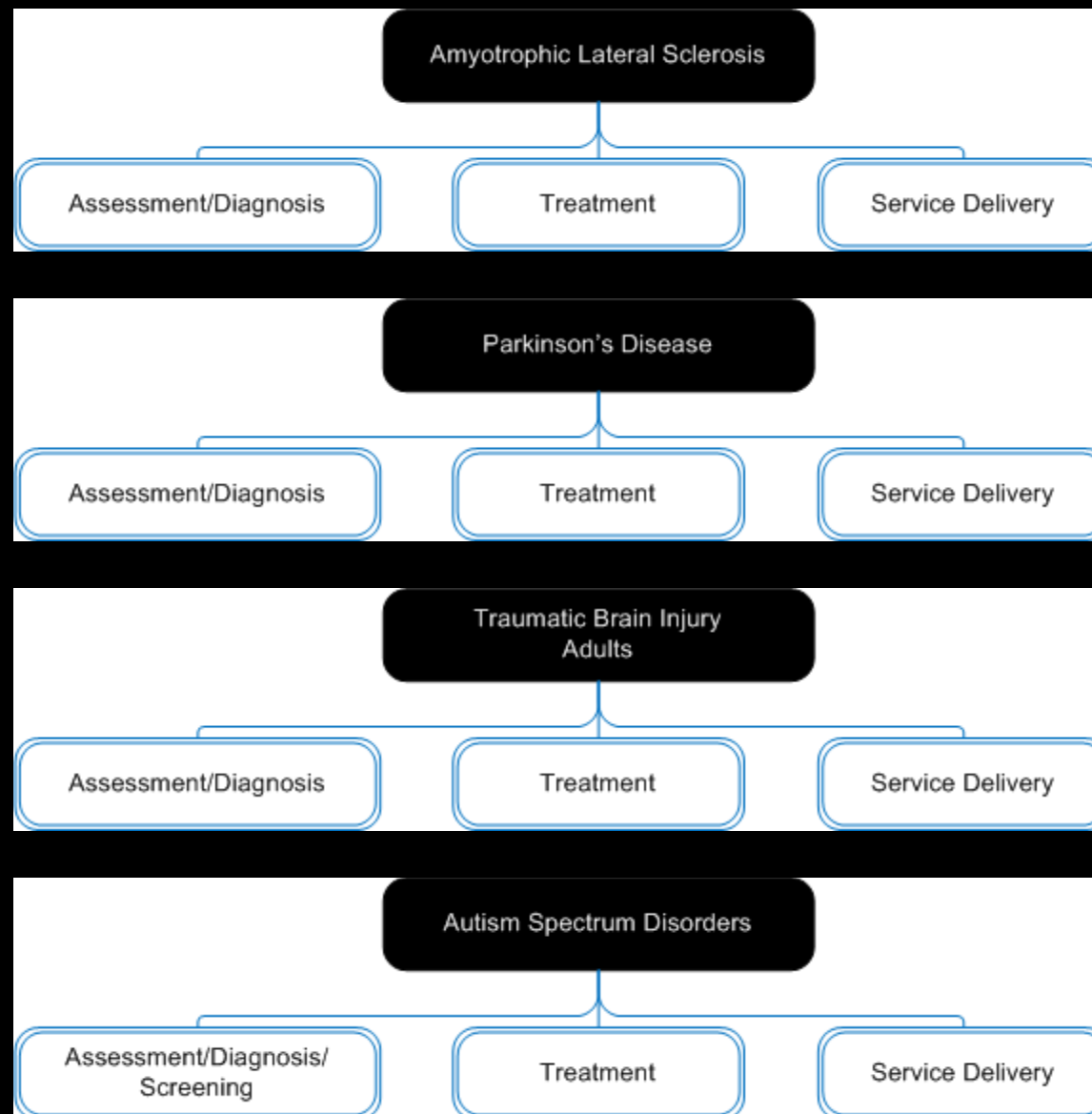
Professional Issues

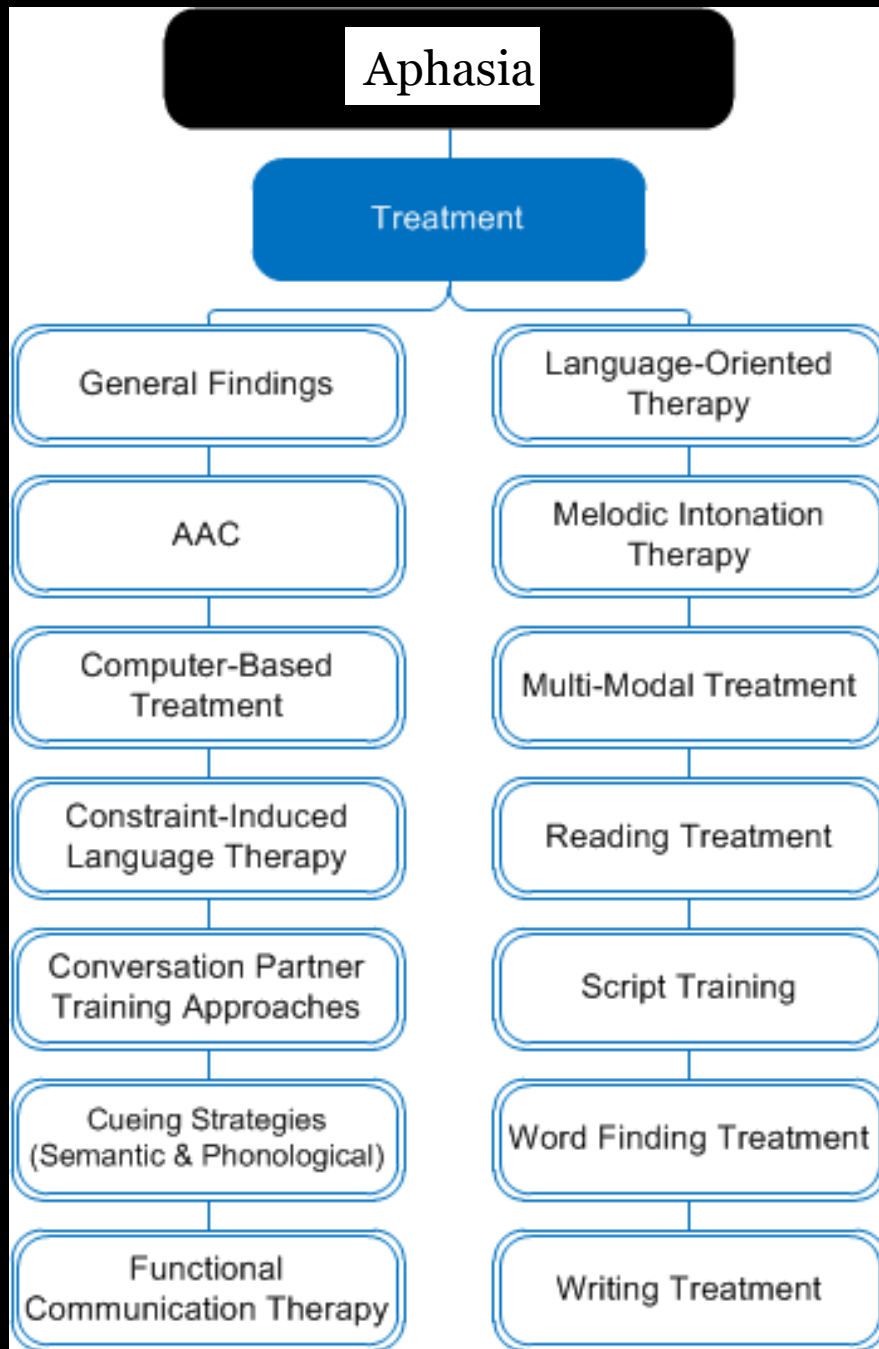
- Bilingual Service Delivery
- Classroom Acoustics
- Cultural Competence
- Documentation
- Working with Interpreters
- Audiology Assistants
- Caseload/Workload
- SLP Assistants
- Telepractice
- Unbundling

ASHA's Evidence Maps



- **Clinical populations**
- **Assessment/diagnosis**
- **Treatment**
- **Service delivery**

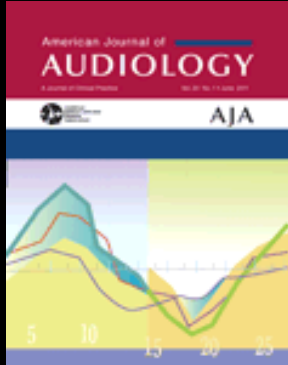




Evidence Maps



ASHA's Four Scholarly Journals



American Journal of Audiology
(AJA)

Journal of Speech, Language, &
Hearing Research (JSLHR)



American Journal of Speech-
Language Pathology (AJSLP)

Language, Speech & Hearing
Services in Schools (LSHSS)



The ASHA Leader

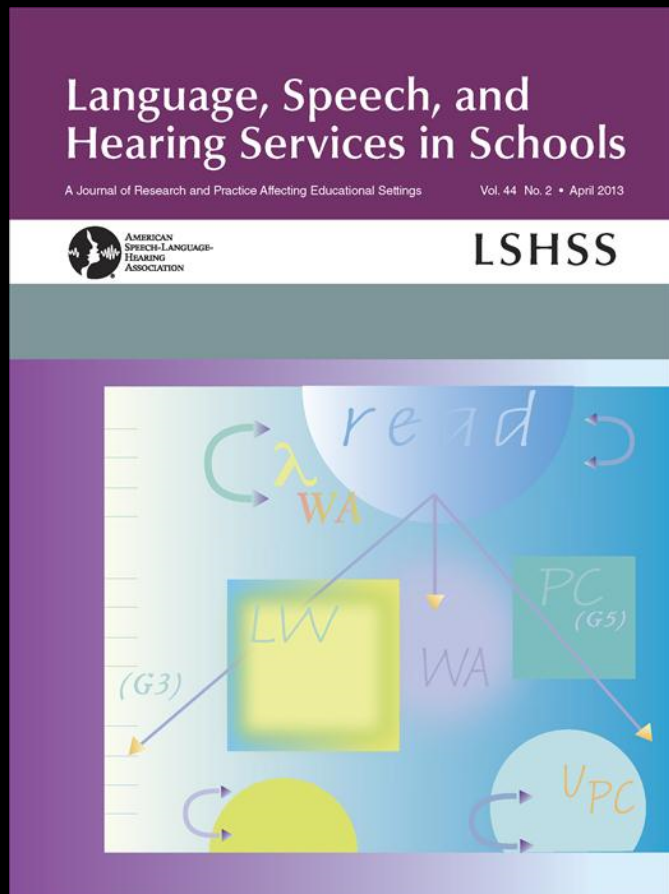


This Is Your Brain on Music

Dana Strait, an expert on the biological foundations of auditory perception, talked recently with online conference attendees about how learning to play a musical instrument shapes cognitive development.



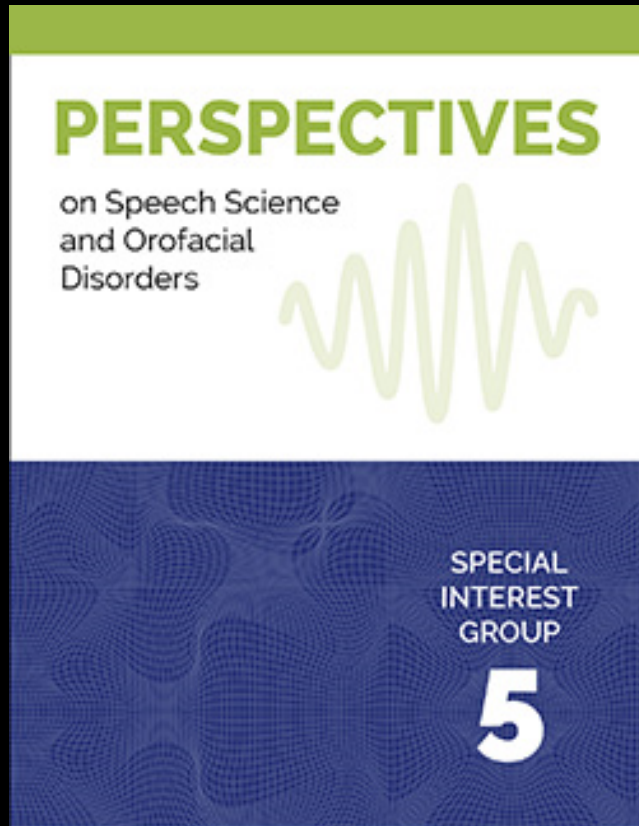
Use of Music Activities in Speech-Language Therapy



Mary B. Zoller

Language, Speech, and Hearing
Services in Schools, January
1991, Vol. 22:272-276. doi:
10.1044/0161-1461.2201.272

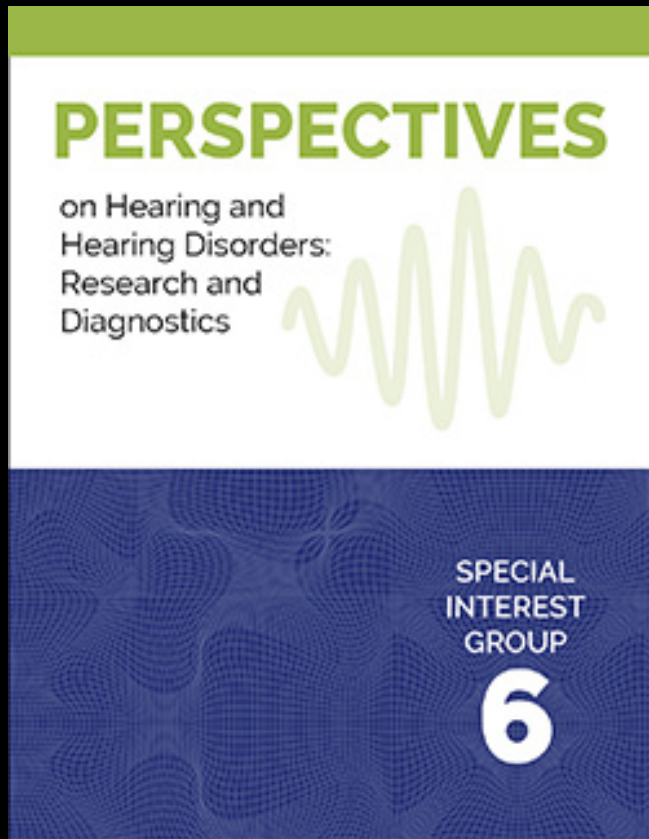
Songs from the Outback: The Effectiveness of Music in Treating Articulation Disorders in Children Aged 2–5 Years with Cleft Palate and Velopharyngeal Dysfunction



Sarah C. Kilcoyne, Helen Carrington, Katie Walker-Smith, Helen Morris, and Anita Condon.

Perspectives on Speech Science and Orofacial Disorders, October 2014, Vol. 24, 59-66. doi: 10.1044/ssod24.2.59

Influence of Music Training on Pre-Attentive Auditory-Neural Processing Across the Lifespan



Dee Adams Nikjeh & Jennifer J. Lister

Perspectives on Hearing and Hearing Disorders: Research and Diagnostics, December 2012, Vol. 16:47-54. doi:10.1044/hhd16.2.47

Benefits of Music Training in Mandarin-Speaking Pediatric Cochlear Implant Users

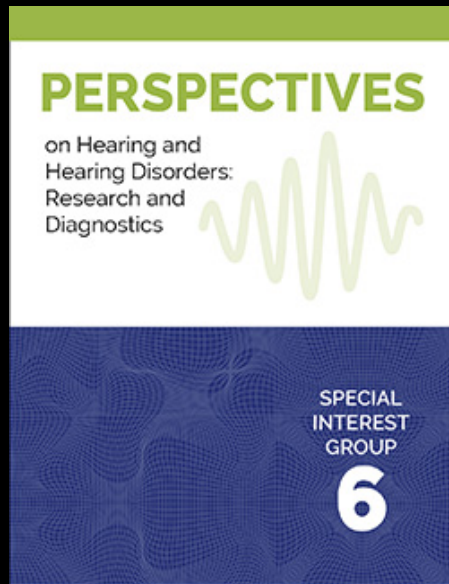
Qian-Jie Fu; John J. Galvin, III; Xiaosong Wang; Jiunn-Liang Wu.

Journal of Speech, Language, and Hearing Research, February 2015, Vol. 58, 163-169. doi:10.1044/2014_JSLHR-H-14-0127



Kate Gfeller, PhD is the Russell and Florence Day Chair of Liberal Arts and Sciences at the University of Iowa, where she directs the Art and Science program in the University of Iowa, where she

Music Perception of Cochlear for Counseling and (Re)habilitation



Perspectives on Hearing and Hearing Disorders: Research and Diagnostics, December 2012, Vol. 16:64-73. doi: 10.1044/hhd16.2.64

In Harmony



The ASHA Leader, June 2012, Vol. 17:online only-online only. doi:10.1044/leader.FTR6.17072012.np

Shared Neural Resources Facilitates Recovery

“Like speech, music has rhythm, a pitch aspect, and spectral features. Research indicates that there are some shared neural networks between speech and music. However, there are also significant differences in the way speech and music are perceived and produced. Music engages broad neural networks, and can involve coordinated auditory motor patterns. It is hypothesized that for some patients, the therapeutic use of music can recruit intact neural networks to facilitate residual functions in damaged areas of the brain, which might improve speech production.”

Gabby Gifford singing with SLPs Nancy Helm-Estabrooks & Marjorie Nicholas



“Gabby is a very good singer and instrumental musician, so she enjoys her music therapy in which they use drums, play instruments, and sing popular songs. But I think that it’s erroneous to think that music therapy alone was the treatment that got Gabby to where she is now. I have no doubt that MIT got her going on the road back to use of intentional speech. One of the things MIT does is improve repetition, leading to improved propositional speech.”

From Silence to a 'Din of Interaction': An SLP harnesses her musical passion to found a choir for people with aphasia.



The ASHA Leader, October 2014, Vol. 19:20-21. doi:10.1044/leader.LML.19102014.20

Music Resonates with Communication Sciences and Disorders

Large Overlap of scientific questions regarding the effects of:

- Musical training on speech, language, & hearing development
- Music to improve speech, language, & hearing development in children with communication disorders
- Music to facilitate recovery of language
- Music to enhance outcomes for those with communication disorders

ASHA is committed to inter-professional education, inter-professional practice and inter-disciplinary research collaboration.

Scope of Clinical Practice Research Needed to Address these Questions

What

- Treatment Taxonomy, Active Ingredients
- Treatment Targets & Aims, Mechanism of Action

Works

- Phases of Intervention Research
- Evidence-based Practice, Standardization of Care

Best

- Defining Success, Outcomes \div Costs = Value
- Patient, Providers, Payer, Policy Maker Perspectives

For Whom

- Case-Mix Risk Adjusted Data, Personal Factors
- Diagnostic Precision, Predictive Modeling

Under Which Circumstances?

- Delivery Setting, Provider Factors, Coverage
- Timing, Intensity, Dosage, Delivery Methods

ASHA National Office in Rockville, Maryland

