

Cochlear Center for  
Hearing and Public Health

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**2018**

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Annual Report



JOHNS HOPKINS  
BLOOMBERG SCHOOL  
*of* PUBLIC HEALTH

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# Letter from the Director



A year goes quickly when developing a Center from scratch, and in looking back over the past 12 months, it's somewhat hard to recall all the little steps that have gotten us to where we are now. Some highlights do come to mind though –

- Central to our core mission to train a generation of researchers and clinicians, we welcomed our first cohort of Cochlear Center trainees who have been working with Center faculty over the past year. These 17 trainees consist of a range of students at different levels in their careers ranging from postdoctoral fellows to undergraduate students.
- We've established a formal training system to support the academic development of these trainees through the efforts of Jennifer Deal, Associate Director of Academic Training for the Cochlear Center, which consists of monthly journal clubs, seminars, weekly mentoring meetings, and structured quarterly reviews of trainee progress.
- The academic productivity of the Center faculty and trainees has been impressive with 31 publications directly related to Center mission areas over the past 12 months, including publications in JAMA and Health Affairs. Over the past year, Center faculty have also had several new additional NIH grants awarded with total NIH funding dollars for Center faculty in 2018 exceeding \$6M.

- Center faculty have continued to receive significant national press coverage for their work including a featured segment on CBS Sunday Morning and articles in the New York Times and Wall Street Journal
- We've developed the East Asian Fellows Program in Aging, Hearing, and Public Health that will be held in July 2019. This is our first foray into projecting the work and mission of the Cochlear Center overseas. Impressively, we received 109 applications from clinicians and researchers throughout East Asia despite only advertising this inaugural program through word of mouth.

A year isn't much time in retrospect, and I think these highlights demonstrate the potential impact that comes with the interdisciplinary work that we're doing at the Cochlear Center linking hearing with gerontology and public health.

In discussing our work at the Cochlear Center with others over the past year, whether it's related to our research on hearing and dementia, policy work bringing about over-the-counter hearing aid legislation, or crafting new 'frictionless' approaches for obtaining hearing care outside the usual clinical setting, I'm often struck by how commonly I hear a response that is along the lines of, "That makes a lot of sense", or "No one's done that before yet?". From there, the person will usually then recall their own personal story of observing a family member or parent struggle with hearing and how it impacted them.

I consider this a good sign. Namely, I believe that often the most important research findings, in hindsight, seem obvious, and the most impactful innovations, in hindsight, also seem obvious. The difficulty of course is finding people who can follow through on 'obvious' concepts and make things a reality.

At the Cochlear Center, training such individuals who can work across disciplines and translate clinical observations into epidemiologic findings and then into interventions and actionable policy is our mission. We're off to a good start, but over the next year with a foundation now in place for the Center, we're looking forward to even greater progress particularly with domestic policy efforts around hearing care coverage in the U.S. and internationally with training overseas scientists and clinicians.

A handwritten signature in black ink that reads "Frank R. Lin". The signature is written in a cursive, flowing style.

**Frank R. Lin, MD PhD**

Director, Johns Hopkins Cochlear Center for Hearing and Public Health  
Professor, Departments of Otolaryngology, Medicine, Mental Health, and Epidemiology

# About the Center

## History

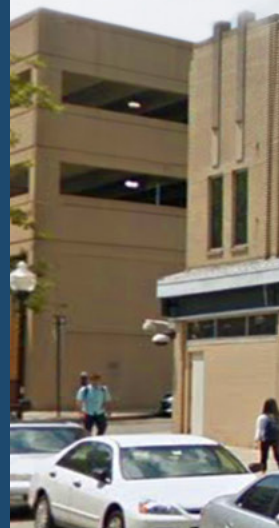
The Cochlear Center for Hearing and Public Health is based in the Department of Epidemiology at the Johns Hopkins Bloomberg School of Public Health and is closely affiliated and co-located with both the Johns Hopkins Center on Aging and Health and the Welch Center for Prevention, Epidemiology, and Clinical Research. The Center was launched in 2018 with more than \$20 million in existing grant funding from the National Institutes of Health focused on Center-mission areas, a \$10 million gift from Cochlear Ltd., and other philanthropic funding. The Center draws on the expertise of faculty members and trainees from a broad array of disciplines in order to advance the mission areas of the Center, in the U.S. and globally.

## Mission

Ensuring that older adults can effectively hear and engage with the people and world around them is key to optimizing health and well-being. The Cochlear Center for Hearing and Public Health is dedicated to recruiting and training a generation of researchers, clinicians, and public health experts who can study the impact that hearing loss has on public health, develop and test strategies to address hearing loss, and help implement effective policies for hearing loss at the local, national, and global levels.

## Vision

The Cochlear Center for Hearing and Public Health will work to effectively optimize the health and functioning of an aging society and become the premier global resource for ground-breaking research and training on hearing loss and public health.



## Impact

The Johns Hopkins Cochlear Center for Hearing and Public Health is the only global research institution focused exclusively on issues related to hearing loss and public health in older adults. Our researchers are interested in understanding the impact of hearing loss on public health, crafting and testing solutions, and supporting and working to advance medical, public health, and governmental understanding of these issues all around the world.

The impact of the Cochlear Center for Hearing and Public Health will ultimately be measured by the accomplishments of the individuals and trainees who comprise the Center and whose research, advocacy,

and academic pursuits will advance Center mission areas. These accomplishments will take place at the macro level (e.g., public policy legislation) to the micro level (e.g., programs to deliver hearing care to individuals in a particular community) and everywhere in between (e.g., acquiring grant funding for Center mission areas, influential research publications, etc.). Common to all of these accomplishments will be the foundational understanding that strategies and solutions that allow older adults with hearing loss to communicate and effectively engage with their environment are fundamental to optimize human health and aging.



## Funding

The Cochlear Center for Hearing and Public Health is supported by NIH grants to Center faculty, a gift from Cochlear Ltd., other philanthropic funding, and infrastructural support and resources from the Johns Hopkins Bloomberg School of Public Health and the Johns Hopkins University School of Medicine.

Grants for which Cochlear Center for Hearing and Public Health core faculty are principal investigators:

**02/01/19 – 01/31/23**

Contribution of sensorimotor function to risk and pathogenic mechanisms of Alzheimer's disease and related dementias

NIA/NIH, R01AG061786; \$ 3,668,824

Co-PI: Frank Lin, Jennifer Schrack, Yuri Agrawal

**02/01/19 – 07/30/19**

Supplemental Benefit Availability and Uptake in Medicare Advantage

The Commonwealth Fund; \$45,953

Co-PI: Amber Willink and Eva DuGoff

**09/01/18 – 05/31/23**

Hearing loss, brain aging, and speech-in-noise performance in the ACHIEVE study

NIA/NIH, R01AG060502; \$3,165,191

PI: Frank Lin

**08/15/18 – 04/30/23**

Accessible hearing care for reduction of disruptive behaviors and caregiver burden in dementia

NIA/NIH; K23AG059900; \$991,505

PI: Carrie Nieman

**08/01/18 – 07/31/20**

Loan Repayment Program

NIDCD/NIH; \$62,000

PI: Nicholas Reed

**06/01/18 – 05/31/19**

Hearing Care in Low Vision Rehab, Roybal Center (JHU),

NIA/NIH; \$40,000

PI: Nicholas Reed

**12/01/17 – 11/30/18**

Admin. Suppl. to R33DC015062 Community-Delivered Affordable, Accessible Hearing Care to Reduce Symptom Burden in Alzheimer's Disease: Adaptation of the HEARS Intervention

NIA/NIH, R33DC015062-03S1; \$404,580

PI: Frank Lin

**09/01/17 – 03/31/19**

Medicare benefit design and long-term services and supports: Gaps, opportunities, and implications for beneficiaries

Commonwealth Fund; \$295,000

PI: Amber Willink

**08/15/17 – 05/31/22**

Role and mechanism of hearing impairment in cognitive decline and dementia

NIA/NIH, K01AG054693; \$673,807

PI: Jennifer Deal

**06/01/17 – 05/31/22**

Aging, Cognition, and Hearing Evaluation in Elders (ACHIEVE) Randomized Trial

NIA/NIH, R01AG055426; \$15,426,522

Co-PI: Frank Lin /Josef Coresh

**12/01/15 – 11/30/20**

Implementing a Community Health Worker Model of Providing Hearing Health Care Services to Older Adults

NIDCD/NIH, R21/R33DC015062; \$2,494,615

PI: Frank Lin

## Ongoing philanthropic support

### • Cochlear

A transformational \$10 million gift from Cochlear Ltd. to the Johns Hopkins Bloomberg School of Public Health provides funding for core Center infrastructure and personnel, research trainees, and faculty to carry out the mission areas of the Center.

### • Eleanor Schwartz Charitable Foundation

The Foundation provides annual support to Center faculty and trainees to carry out research and training related to hearing loss, public health, and aging.

### • Estate of Miriam Hardy

Miriam Hardy was a world-renowned speech pathologist and audiologist at Johns Hopkins who, with her husband, William Hardy, revolutionized the process of identifying and educating children with hearing and speech disorders. A gift from her estate continues to support research trainees interested in the interface of hearing and public health.



# Timeline

- Frank Lin delivers keynote talks at National Yang Ming University in Taiwan and at the East Asian Society of Otology Meeting in Korea to introduce the work of the Cochlear Center and discuss available training opportunities.

- The Center is featured in JHSPH Magazine

May 2018

Summer 2018



March 2018

July 2018

- \$10 million gift from Cochlear Ltd for Center launch

- Frank Lin and Carrie Nieman represent the Cochlear Center at the World Health Organization for ongoing WHO work related to preparation of the World Report on Hearing.
- Frank Lin delivers a keynote address at the British Society of Otology in Manchester, UK to introduce the work of the Center and to further ongoing research collaborations in hearing and dementia with University College London researchers.

- Nick Reed visits Macquarie University in Sydney to establish collaborations for the implementation of the ENHANCE intervention at Macquarie University Hospital

**August 2018**



**September 2018**

- The Center is featured on a CBS Sunday Morning segment in which Frank Lin and Nick Reed are interviewed by David Pogue.
- Nick Reed, Frank Lin, and Amber Willink publish a JAMA editorial emphasizing the importance for future policy to focus on hearing clinical services rather than only devices.
- Frank Lin visits the Peking University School of Public Health, Tongren Hospital, the Beijing PLA hospital, and Sichuan University to introduce the work of the Cochlear Center. The Center announces the inaugural East Asian Fellows Program for Summer 2019.

- Nicholas Reed and Jennifer Deal's research in collaboration with Optum Labs and AARP is published and featured in the New York Times and other media outlets.

**November 2018**



**January 2019**

- Amber Willink's research is published in Health Affairs and featured in Reuters, US News and World Report, and other outlets.

**February 2019**

- Nicholas Reed and Jennifer Deal are featured in a Wall Street Journal article on hearing and cognition.
- Carrie Nieman and HEARS featured in the Hopkins Medicine Magazine.

# Research Areas

## Overview

Effective hearing and communication are critical for optimizing the health and functioning of older adults. However, hearing is rarely the focus of public health research and interventions. The Cochlear Center for Hearing and Public Health aims to change this paradigm not only through research to better understand how hearing problems affect health, but by identifying and implementing viable and scalable solutions. Research at the Center spans areas including the impact of hearing loss in older adults on public health; developing and testing strategies to mitigate these effects; and helping to implement policies at the local, national, and global levels to address hearing loss. This work spans myriad fields including otolaryngology, audiology, epidemiology, health economics, neuropsychology, cognitive neuroscience, and biostatistics.





◀ Cognition and brain aging



Epidemiology of hearing loss and aging ▶



▲ Health economic outcomes



◀ Enhancing patient-provider communication in health care settings



Community-based solutions to hearing care provision ▶



▲ Investigating over-the-counter hearing technologies

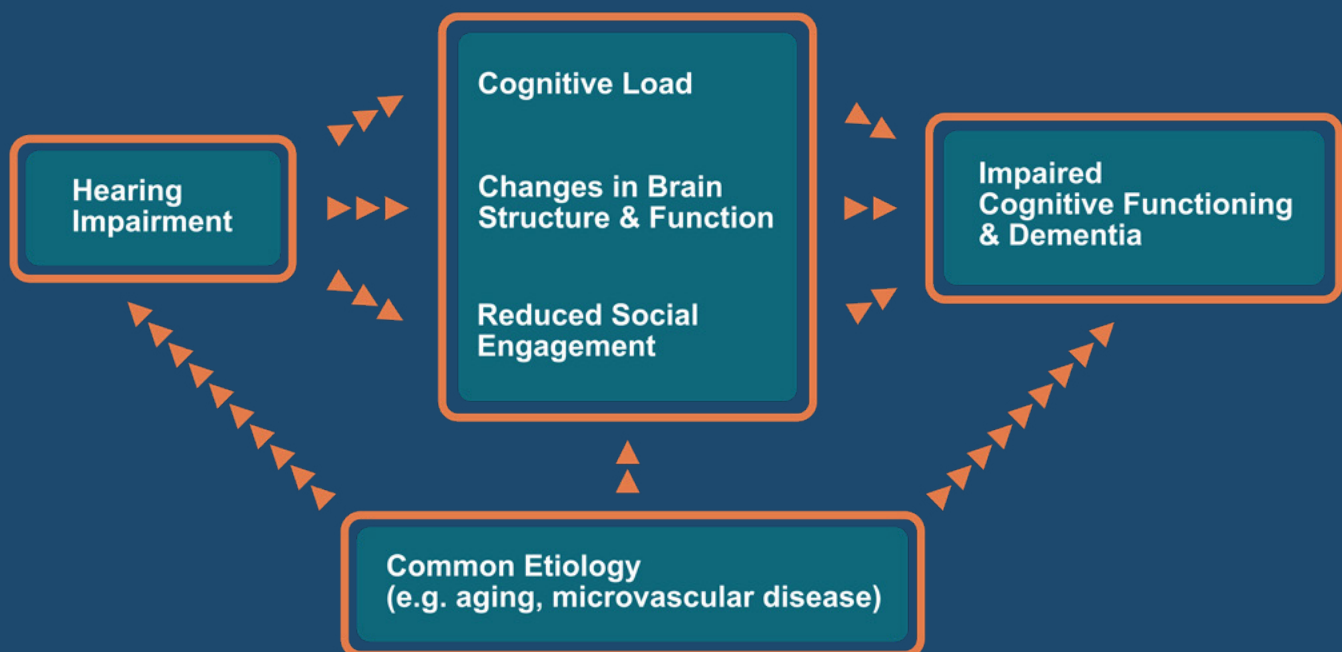
## Research Areas

# Cognition and brain aging

Epidemiologic research over the past several years led by Center researchers has established the contribution of hearing loss to the risk of cognitive decline and dementia in older adults. A 2017 Lancet report that identified hearing loss as the dominant risk factor for dementia was based on three landmark studies, two of which were authored by faculty at the Cochlear Center. This epidemiologic research has led to the Aging and Cognitive Health Evaluation in Elders (ACHIEVE) study which is an ongoing, large-scale randomized controlled trial. This first-in-kind trial led by Center faculty is designed to definitively determine if treating hearing loss in older adults reduces the risk of cognitive decline. This study is sponsored by the National Institute on Aging (Clinicaltrials.gov Identifier: NCT03243422). In 2018, ACHIEVE enrollment began, and as of March 2019, 618

participants had been enrolled. Study findings are anticipated in 2022.

- Concurrent research by Center researchers, including Jennifer Deal and post-doctoral fellow Nicole Armstrong, is actively focused on the mechanism underlying the relationship between hearing, cognition, and brain aging in population-based studies.
- Ongoing work includes investigating the relationship of hearing to Alzheimer's disease biomarkers and how hearing may affect brain structure and networks, as measured through structural and functional brain magnetic resonance imaging (MRI).



# Cost-Benefit Estimates of Covering Hearing Care Services Under Medicare

## Population Affected

**4.97 million**

Medicare Beneficiaries use a hearing aid

**63%**

**3.12 million**

do not access hearing care services

## Cost of Coverage

## Savings to Medicare



Cost of 2 hearing care visits

**\$160/year**



Per Person



Gross health-related savings

**\$2513/year**



Costs to Medicare under Part B

**\$667 million/year**



Medicare



Net savings to Medicare

**\$7161 million/year**

Willink, A., Reed, N. S., & Lin, F. R. (2019).  
Cost-Benefit Analysis of Hearing Care Services:  
What Is It Worth to Medicare?  
*Journal of the American Geriatrics Society.*

Hearing loss has both direct and indirect economic implications for individuals and society. The cost of hearing aids is well documented and has been a substantial barrier for accessing the devices among older Americans. Center director Frank Lin was instrumental in the passage of the Over-the-Counter Hearing Aid Act of 2017 to make hearing aids more accessible and affordable, and these regulations will be enacted in 2020-21. At present, hearing aids can typically be purchased by consumers only when bundled together with associated professional services which may or may not always be needed. Center research, led by Amber Willink, highlighted the low use of hearing care services among older adults with hearing aids, and how the use of hearing care services in this population resulted in \$2,500 lower annual spending per person for Medicare. A cost-benefit analysis of hearing care services among those with hearing aids showed

## Research Areas Health economic outcomes

substantial savings to the Medicare program. The OptumLabs analysis, led by Nicholas Reed, showed individuals with untreated hearing loss experience higher health care costs and poor health care outcomes (hospitalizations and 30-day readmissions) compared to those who do not have hearing loss.

- In 2019, the activities of the health economics outcomes workgroup will continue to explore the health services and health

## Research Areas

# Epidemiology of hearing loss

economic consequences of hearing loss, and opportunities for better care. Specifically, faculty will examine different models of coverage for hearing care services and their effectiveness in providing care at both the federal (Medicare Advantage) and state-level.

- Center researchers are also actively consulting with federal policy makers to develop draft legislation for hearing coverage under Medicare that would account for the changes expected under the OTC Hearing Aid Act while ensuring financial protection and improved access for vulnerable populations.

Epidemiologic research led by members of the Center has highlighted the substantial impact of hearing loss in society. Center researchers and trainees are continuing to investigate the prevalence of hearing loss and the impact that hearing loss has on functional domains such as loneliness and physical functioning using epidemiologic datasets. To support and enrich hearing research in the greater scientific community, the Cochlear Center implements and manages high-quality audiometric data collection in several large epidemiologic studies. Over the past year, the Center has overseen data collection in the Baltimore Longitudinal Study on Aging (n~375) and the Atherosclerosis Risk in Communities Study (n=3626). In addition, Nicholas Reed has led the protocol development and technician training in the National Health and Aging Trends Study (n=~15000), the Baltimore Epidemiologic Catchment Area Study (n=~1070), and the BIOCARD study (~222). Through these efforts, objective auditory information will be linked to health data, including neurological, cardiovascular, claims data, psychosocial, physical, and lifestyle measures.

- Ongoing work by Center researcher Adele Goman is exploring the geographic variations in hearing loss prevalence and the number of people with hearing loss, across the U.S. This work is also exploring the geographic distribution of hearing care services to identify areas that may benefit from additional hearing care options.

**PERCENTAGE** OF INDIVIDUALS  
WITH HEARING LOSS BY AGE & SEVERITY

MILD

MODERATE+

**38.2 Million** (14.3%) Americans aged 12 years or older have hearing loss

0.2%

12-19

0.4%

20-29

1.6%

30-39

6.5%

40-49

13.3%

50-59

26.8%

60-69

54.6%

70-79

81.5%

≥ 80

1 IN 10

1 IN 4

HALF

8 IN 10

• Source: Goman, Lin (2016) AJPH



Cochlear Center for  
Hearing and Public Health

- Josh Betz is investigating the relationship between peripheral auditory function and central auditory processing to determine how patterns in audiometric data relate to speech understanding in noise. This research may identify whether there are other, more informative ways to summarize audiometric data aside from the speech frequency pure tone average.
- Through a dedicated hearing measurement workgroup led by Nicholas Reed, the Center is planning to expand the training and support that we offer to other investigators interested in incorporating hearing into ongoing and planned clinical and epidemiologic studies.
- Jennifer Deal continues to mentor several trainees in epidemiological analyses of hearing with cognitive, physical, and social functioning outcomes using data from ARIC.



The National Academies of Sciences, Engineering, and Medicine recognize optimal patient-provider communication as a key to improving health care outcomes. Patient-provider communication has been associated with improved patient satisfaction, treatment adherence, and other health outcomes. Despite the impact of hearing loss on communication, hearing is rarely addressed in the context of patient-provider communication. Center researcher Nicholas Reed leads initiatives to address hearing loss as a barrier to communication in health care settings via screening and intervention programs embodied in the ENHANCE intervention. These include universal screening of adults admitted to the hospital and the provision of amplification and/or use of communication strategies among hospital providers.

- Nicholas Reed is partnering with outside institutions (Macquarie University Hospital, Massachusetts General Hospital) to execute early pilot studies on the impact of the ENHANCE program.
- Nicholas Reed and Amber Willink are continuing their efforts to explore hearing loss and patient-centered health care outcomes such as satisfaction and perception of care through planned analyses in the Medicare Current Beneficiary Survey, National Health and Aging Trends Study, and Health and Retirement Study.
- ENHANCE is partnering with FutureCare in Baltimore, MD to begin feasibility studies of sustainably addressing hearing loss in a skilled nursing facility setting.

## Research Areas

# Enhancing patient-provider communication in health care settings



# Community-based solutions to hearing care provision



The established model of hearing health care delivery in the U.S. and much of the world is based on clinic-based audiologic and hearing needs assessment, rehabilitative counseling and education, and sensory management with the provision of amplification and other assistive devices. This model of care is associated with improvements in communication and overall domain-specific quality of life, but these services are beyond the resources of many older adults. Center researchers, led by Carrie Nieman, are committed to incorporating public health practices in order to develop new models for the delivery of hearing care and provide access to all older adults. One model is through the HEARS program which incorporates over-the-counter hearing technologies as well as key principles in designing materials and technology that are accessible to all older adults, regardless of education, literacy level

or cognitive status. Much of this work is done in partnership with Mike Weikert and the Center for Social Design at the Maryland Institute College of Art.

- An ongoing NIH-funded randomized trial of the efficacy of the HEARS intervention in improving self-reported hearing handicap is ongoing in Baltimore. As of March 2019, 82 participants have been randomized with a target sample size of 120. Final results of the clinical trial will be available in 2020.
- AccessHEARS, a non-profit founded by Carrie Nieman, is continuing to provide community-based hearing care services based on the HEARS intervention throughout the Baltimore region with seed funding from AARP and other philanthropic partners.

# Investigating over-the-counter hearing technologies

Gold-standard hearing rehabilitative care typically comprises one-on-one sessions with an audiologist for auditory needs assessment, fitting and programming of hearing aids and related technologies, and educational counseling and rehabilitation. While this model is the gold standard, not all individuals, particularly adults with milder forms of hearing loss, may require or desire this level of care. At present, however, hearing aids in the U.S. and most countries in the world remain medically regulated devices that can only be dispensed or sold through a licensed provider. However, by 2020-21, FDA-regulated hearing aids for mild to moderate hearing loss meeting explicit performance and safety criteria will be available to the public as over-the-counter products. Nicholas Reed, Joshua Betz, and Peggy Korczak are currently focused on investigating over-the-counter technologies and how to integrate them into hearing care. Their research has focused on comparative effectiveness of

technologies, the ability of consumers to adjust devices, and approaches to servicing over-the-counter technology in audiology clinics.

- Center researchers have joined a national effort in collaboration with Washington University in St. Louis and University of Pittsburgh to create a publicly accessible database of electroacoustic, real-ear measure, and speech-in-noise analyses of over-the-counter devices
- Peggy Korczak and Nicholas Reed are currently mentoring a Towson University audiology doctoral student conducting thesis research on attitudes towards over-the-counter hearing care among audiologists to better understand steps needed to integrate over-the-counter devices into future clinical practice.





# Training

## Overview

At the Johns Hopkins Cochlear Center for Hearing and Public Health, we are training a generation of clinicians and researchers to study the impact that hearing loss in older adults has on public health and to develop and implement public health strategies and solutions for hearing loss. The Cochlear Center provides fellowships for pre- and postdoctoral trainees and scholarships for students enrolled in degree-bearing programs at the Bloomberg School of Public Health. The impact of the Cochlear Center for Hearing and Public Health will ultimately be measured by the accomplishments of the individuals and trainees who comprise the Center and whose research, advocacy and academic pursuits will advance Center mission areas.



# 17

Center Trainees



# 28

Presentations made



# 16

Attendance at 16 different external meetings and conferences



# 8

Papers published by Trainees in Cochlear Center mission areas



# 9

Upcoming/close to submission papers by Trainees in Cochlear Center mission areas

Training

# Postdoctoral research fellows

The Cochlear Center provides 1-2 year fellowship opportunities for trainees with an AuD, MD, or PhD in epidemiology, biostatistics, or related fields. Trainees work with Core Faculty on existing or newly developed research projects related to the Center's mission.



## Nicole Armstrong

Cochlear Center Faculty Advisor: Dr. Frank Lin



Nicole Armstrong earned her PhD in Epidemiology from the Johns Hopkins Bloomberg School of Public Health in 2017 and MPH from the Columbia University Mailman School of Public Health. As a Cochlear Center postdoctoral fellow, she studies the mechanisms underlying the association of hearing loss with cognitive decline using the Baltimore Longitudinal Study of Aging dataset. Her research interests include cognitive aging, risk factors of Alzheimer's disease, and mechanisms underlying risk factors and Alzheimer's disease pathology. She has co-authored 5 publications in the reporting period of which she has first-authored four, and she has five other manuscripts under review. Nicole Armstrong was the award recipient of the Nathan Shock Travel Award during the 2018 National Institute on Aging Retreat, and she won 3rd place in the postdoctoral fellow category during the Annual Research on Aging Showcase at Johns Hopkins Bloomberg School of Public Health. She attended 8 conferences in 2018, presenting a combination of 9 oral and poster presentations.

# Training JHSPH students

The Cochlear Center provides funding for students enrolled in degree programs at the Johns Hopkins Bloomberg School of Public Health, including Doctoral and Masters students, who are interested in conducting research related to hearing loss in older adults as part of their training.



## Doctoral students

### Perry Kuo

Cochlear Center Faculty  
Advisor: Dr. Frank Lin and  
Dr. Jennifer Deal



Perry Kuo earned his MD degree from National Yang-Ming University (Taiwan) and Master of Public Health (quantitative methods) from the Harvard T.H. Chan School of Public Health, and is a third-year PhD student in the Department of Epidemiology and concurrent Master of Science student in the Department of Biostatistics.

Perry's research interests include metrics of aging, physical activity, physical performance, and cognitive functioning. He has completed a preliminary analysis on hearing loss and physical function and physical activity in the Baltimore Longitudinal Study of Aging and is investigating the relationship between hearing loss and energy utilization. Currently, he's working on his thesis with an expected graduation date of May 2020. In the reporting period Perry has co-authored 3 publications.

## Danielle Powell

Cochlear Center Faculty Advisor:  
Dr. Jennifer Deal



Danielle Powell earned her Bachelors of Science from Northwestern University in 2009 and a Doctorate of Audiology from the University of North Carolina in 2013. She is a second-year doctoral student in the Epidemiology of Aging Track in the Department of Epidemiology. Danielle successfully completed her written departmental comprehensive exam in July 2018 and is currently working with her advisors to finalize dissertation aims, with a final dissertation proposal anticipated by June 2019 and a department seminar to present those aims in September 2019. She serves as the Cochlear Center Journal Club Coordinator as well as various graduate student positions within the Department of Epidemiology, including serving as a Teaching Assistant for two foundational Epidemiology classes.

Danielle's research interests include the relationship between hearing loss and cognition and depression in older adults. She is working on a systematic review regarding sensory loss and cognition, and has two analysis projects in progress related to hearing loss and diabetes as well as APOE and time to vs risk of dementia. Over the past year, Danielle gave four presentations and attended the Johns Hopkins Teaching Institute in Baltimore and the Gerontological Society of America Conference in Boston, Massachusetts.

## Pablo Martinez Amezcua

Cochlear Center Faculty Advisor:  
Dr. Jennifer Deal

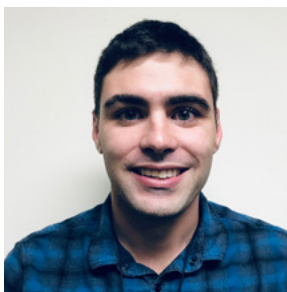


Pablo Martinez Amezcua earned his MD from Universidad Nacional Autonoma de Mexico (UNAM) and his Master of Health Science from the Johns Hopkins Bloomberg School of Public Health. Currently he is a second-year doctoral student in the Epidemiology of Aging Track in the Department of Epidemiology. Pablo successfully completed his written departmental comprehensive exam in July 2015 and is currently working to finalize dissertation aims, with a final dissertation proposal anticipated by spring 2019 and a department seminar to present those aims in fall 2019. Pablo's research interests include healthy aging, physical activity, sensory loss, lifespace mobility, cardiovascular disease prevention, and social determinants of health. Pablo is interested in the physical consequences of hearing loss, with a particular interest in the effect of hearing loss on physical functioning, physical activity, and life-space mobility. In the past year Pablo has first authored two publications and was a co-author on a further publication. Additionally, he presented his research at the Gerontological Society of America, November 2018 Annual Scientific Meeting in Boston, MA.

## Master's students

### Daniel Pupo

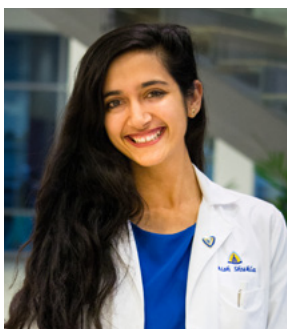
Cochlear Center Faculty  
Advisor: Dr. Jennifer Deal



Daniel Pupo earned his Bachelor's Degree from Texas A&M University-Corpus Christi and is a full-time Masters of Public Health student in the Johns Hopkins School of Public Health in the Aging Concentration. He is currently analyzing the relationship between hearing loss and gait using data from the Baltimore Longitudinal Study of Aging as part of his MPH Capstone project. He plans to publish the results either before or shortly after his graduation in May of 2019.

### Aishwarya Shukla

Cochlear Center Faculty  
Advisor: Dr. Adele Goman  
and Dr. Nicholas Reed



Aishwarya Shukla is a medical student at the Johns Hopkins School of Medicine and is a full time Masters of Public Health student at the Bloomberg School of Public Health with a concentration in Epidemiology and Biostatistics. For her Capstone project, Aishwarya has completed an analysis on hearing loss and depression in the Atherosclerosis Risk in Communities (ARIC) Study and has drafted a manuscript which has been reviewed by co-authors. Aishwarya is expected to graduate with a Masters of Public Health degree in May 2019, after which she will resume her medical studies. She has published one first author publication and has another submitted. She presented her research

at the American Academy of Otolaryngology-Head and Neck Surgery 2018 Annual Meeting in Atlanta, GA and at the American Association of Audiology 2019 Annual Conference in Scottsdale, AZ.

### Osama Tarabichi

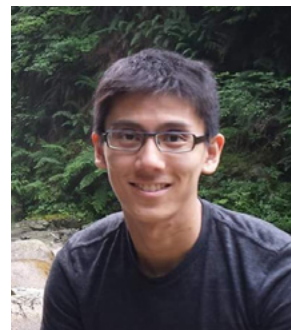
Cochlear Center Faculty  
Advisor: Dr. Adele Goman  
and Dr. Nicholas Reed



Osama Tarabichi earned his medical degree from the Royal College of Surgeons in Ireland-Bahrain and is a Masters of Public Health student in the Epidemiology/Biostatistics concentration at the Bloomberg School of Public Health. Osama is currently working on an analysis of hearing aid use and neighborhood socioeconomic status as well as an analysis of speech in noise outcomes in individuals with normal audiograms. Osama's Capstone project will be on the impact of neighborhood socioeconomic status on hearing aid use, and he is expected to graduate in May 2019. Osama will begin his residency in otolaryngology at the University of Iowa this summer.

### Michael Yong

Cochlear Center Faculty  
Advisor: Dr. Amber Willink



Michael Yong earned his MD from the University of British Columbia (UBC) in Canada and is a senior resident physician in the Otolaryngology - Head and Neck Surgery program at UBC. He is currently taking time off from his clinical training



and is a first-year dual degree student in the Master of Public Health and Master of Business Administration programs. During his time at Johns Hopkins, he has completed a Policy and Practice manuscript commissioned by the World Health Organization that compares hearing care regulations across 8 countries. Michael's Capstone project will be on his cost-effectiveness analysis of a school hearing screening protocol in Alaska with an expected graduation date of May 2020.

# Training Non-JHSPH trainees

## Doctoral students

### Jonathan Suen

Cochlear Center Faculty  
Advisor: Dr. Frank Lin



Jonathan Suen earned his clinical Doctorate of Audiology (AuD) degree from Gallaudet University (2016) and is currently a first-year PhD student in the School of Nursing (SON) at Johns Hopkins University. Prior to joining the SON, Jonathan completed a postdoctoral fellowship with Frank Lin where he led the community health worker pilot program for the HEARS (Hearing Equity through Accessible Research and Solutions) intervention and initiated the implementation of the HEARS randomized trial. Through his experiences investigating hearing health care disparities, he developed an interest in addressing health equity among older adults. He is presently exploring the phenomena of social isolation and loneliness through his PhD studies, and the impact of age-related sensory loss on social cohesion and psychosocial health. Jonathan has first authored two publications and has a further two first author papers in preparation. Additionally he has given seven presentations at national and international conferences, including the World Congress of Audiology meeting and the Coalition for Global Hearing Health meeting in Cape Town, South Africa.

## Medical students

Medical students wishing to gain public health research experience may be supported by the Cochlear Center to work with faculty on short-term (2-3 month) or longer-term (up to 1 year) research projects related to the Center's mission.

### Wakako Horiuchi

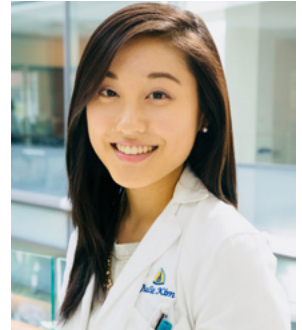
Cochlear Center Faculty  
Advisor: Dr. Nick Reed



Wakako Horiuchi is a second year medical student at the University Of Hawai'i John A. Burns School Of Medicine in Honolulu, Hawaii. Wakako joined the Cochlear Center for Hearing and Public Health in the summer of 2018 as a visiting student with the Medical Student Training in Aging Research (MSTAR) Program sponsored by the National Institute on Aging. She completed an analysis on hearing loss and its impact on health care access and is currently drafting the manuscript. Her work was accepted as a podium presentation for the Hawaii Chapter Scientific Meeting of the American College of Physicians in Honolulu, Hawaii in February 2019. She has also submitted an abstract to the American Geriatrics Society Annual Scientific Meeting in Portland, Oregon in May 2019.

### Julie Kim

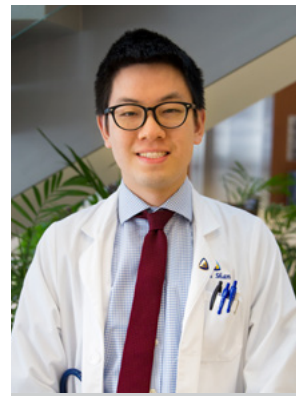
Cochlear Center Faculty  
Advisor: Dr. Jennifer Deal



Sun Joo (Julie) Kim earned her BS from Duke University and is a second-year medical student at the Johns Hopkins School of Medicine. Julie completed her Scholarly Concentration project in the summer of 2018 investigating the relationship between retinal signs and hearing loss in a large population-based cohort of older adults. Julie has drafted the manuscript (currently under co-author review) and is expected to graduate in May 2021. She presented this research project at the Johns Hopkins Medical Student Research Symposium in Baltimore, MD.

### Alan Shan

Cochlear Center Faculty  
Advisor: Dr. Carrie Nieman



Alan Shan earned his B.S from Brown University and is a Johns Hopkins medical student completing a Dean's year of research within the Cochlear Center for Hearing and Public Health.

He is working on projects on the association between hearing loss and employment, as well as the prevalence and risk factors for Eustachian tube dysfunction and plans to present findings at the national AAO-HNSF meeting in Sept 2019.

## James Ting

Cochlear Center Faculty  
Advisor: Dr. Jennifer Deal



James Ting earned his Bachelor of Science from Yale University and is a fourth year medical student at the Johns Hopkins School of Medicine. James is currently working on an analysis of hypertension and hearing loss and is currently finalizing data analysis, while drafting a manuscript. He is also working on an analysis of smoking history and hearing loss and is completing a systematic review on vascular risk factors for hearing loss.

## Undergraduate students

Opportunities are available for undergraduate students across the Johns Hopkins University to work with Core Faculty in the Cochlear Center on short term research projects.

## Jamie Shade

Cochlear Center Faculty  
Advisor: Dr. Nick Reed

Jamie Shade is a fourth-year undergraduate student at Johns Hopkins University who will receive a Bachelor of Science in Biomedical Engineering in May of 2019. Jamie began work with the Cochlear Center for Hearing and Public Health in March of 2017, working under

the mentorship of Nicholas Reed to develop an improved hearing screening tool. She has since continued this project, while simultaneously investigating clinical data regarding sensory impairment and mental health. She presented her research at the Association for Research in Otolaryngology MidWinter Meeting in Baltimore MD.

## Pooja Nair

Cochlear Center Faculty  
Advisor: Dr. Nick Reed

Pooja Nair is a senior completing her undergraduate degree in Biomedical Engineering. She has been leading a team of undergraduate engineering students to design and develop an intuitive, rapid hearing screening tool for sound-field hearing screening. She presented her research at the Department of Biomedical Engineering Design Day, Baltimore, MD and at the Association for Research in Otolaryngology MidWinter Meeting in Baltimore MD.

## Yasmeen Alshabasy

Cochlear Center Faculty  
Advisor: Dr. Nick Reed

Yasmeen Alshabasy is a junior at Wesleyan University. She investigated accompaniment to health care services among persons with dual sensory impairment. This project examined whether persons with sensory impairment (vision alone, hearing alone, and dual sensory impairment) had higher odds of reporting being accompanied to health care services.

# Training Visiting Scholars

The Cochlear Center hosts visiting students and faculty from other academic institutions as visiting faculty who are interested in learning about the Center's programs, working or training with Center faculty, and developing potential collaborations. Some visiting fellows may also choose to enroll in summer institute courses at the Bloomberg School of Public Health.

## Pauline Croll

Cochlear Center Faculty  
Advisor: Dr. Jennifer Deal



Pauline Croll earned her BSc in Psychology and MSc degree in Clinical Neuropsychology from Leiden University, the Netherlands and her MSc degree in Clinical Epidemiology from Erasmus Medical University. She is a third-year PhD student in the Departments of Epidemiology, ENT, and Radiology at the Erasmus University Medical Center. Pauline's research focuses on the interrelations and risk factors of both hearing loss and brain changes, mainly using data from the population-based Rotterdam Aging Study. Pauline is currently working as a visiting scholar at the Cochlear Center on the association between hearing loss and white matter microstructure of the brain in the Atherosclerosis Risk in Communities study.



# East Asian Fellows Program

## Purpose

The East Asian Fellows Program in Aging, Hearing, and Public Health will be held July 15 - 19, 2019 at the Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland.

The purpose of this one-week program is to provide an overview of public health concepts, methods, and strategies to assist clinicians and researchers in East Asia who are pursuing public health research and projects focused on addressing hearing loss in older adults. Lectures and small group sessions will cover epidemiology, biostatistics, clinical trials, gerontology, intervention design, health policy/economics, and select clinical topics in otolaryngology, audiology, and geriatrics.

In this inaugural year of our program, we received a 109 applications and accepted 36 program participants.



# Events



# Cochlear Center Seminars

## Hearing loss in the healthcare system: impact and addressing it

7/16/18

**Nicholas Reed**, Core Faculty, Cochlear Center for Hearing and Public Health



## An overview of current social design projects

7/16/18

**Mengru Liao**, Social Design Associate, Center for Social Design, Maryland Institute College of Art



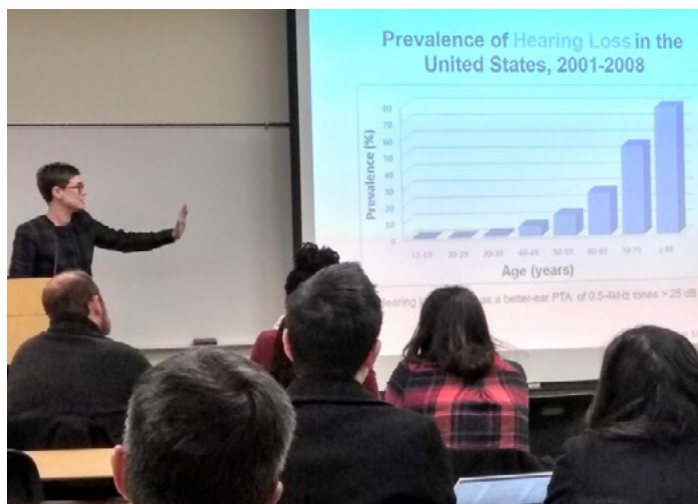
## Social Design: From Concept to Practice

8/27/18

**Carrie Nieman**, Core Faculty, Cochlear Center for Hearing and Public Health

**Jonathan Suen**, Post-doctoral Fellow, Cochlear Center for Hearing and Public Health

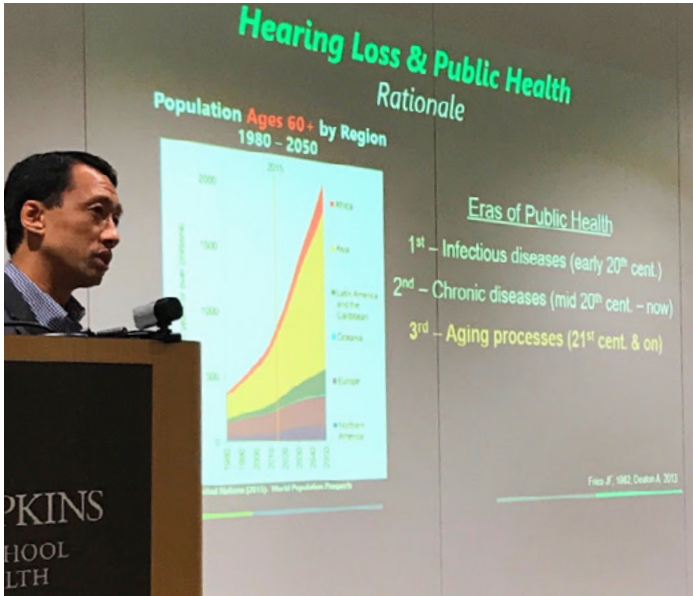
**Mengru Liao**, Social Design Associate, Center for Social Design, Maryland Institute College of Art



## Hearing Loss in the Third Age of Public Health: Where we're headed with the Cochlear Center

9/24/18

**Frank Lin**, Director, Cochlear Center for Hearing and Public Health



## The Hearing Needs of Medicare Beneficiaries: Past, Present and Future

10/22/18

**Amber Willink**, Core Faculty, Cochlear Center for Hearing and Public Health

## The Hearing Needs of Medicare Beneficiaries

Past, Present and Future



**Amber Willink, PhD**

Assistant Scientist  
Department of Health Policy and Management

## Designing Health: How Johns Hopkins and MICA's Center for Social Design are collaborating to bring people to the center of healthcare solutions

11/12/18

**Mike Weikert**, Founding Director, Center for Social Design, Maryland Institute College of Art

**Becky Slogeris**, Associate Director, Center for Social Design, Maryland Institute College of Art

**Ashley Eberhart**, Social Design Associate, Center for Social Design, Maryland Institute College of Art

**Mengru Liao**, Social Design Associate, Center for Social Design, Maryland Institute College of Art

JOHNS HOPKINS  
BLOOMSBURG SCHOOL  
OF PUBLIC HEALTH

Cochlear Center for  
Hearing and Public Health

CENTER FOR  
SOCIAL DESIGN

MI CA

Mike Weikert  
Founding Director  
Center for Social Design  
& MICA Social Design  
MICA

Becky Slogeris  
Associate Director  
Center for Social Design  
MICA

Ashley Eberhart  
Social Design Associate  
Center for Social Design  
MICA

Mengru Liao  
Social Design Associate  
Center for Social Design  
MICA

How Johns Hopkins and MICA's Center for Social Design  
are collaborating to bring people to the center of  
healthcare solutions

# DESIGNING HEALTH

MONDAY, NOVEMBER 12, 2018  
12:00 P.M. – 1:00 P.M.  
W5008  
WOLFE STREET BUILDING

For more information, please contact Shannon Smitherman at [ssmith@jhmi.edu](mailto:ssmith@jhmi.edu)  
For disability access information or listening devices, please contact Scott Klein at [sklein1@jhmi.edu](mailto:sklein1@jhmi.edu) or 410-614-1550



# Disrupt Aging. Disrupt Hearing Loss. Purpose to People to Possibilities

1/28/19

**Charlotte Yeh**, Chief Medical Officer, AARP Services Inc.



**Charlotte S. Yeh, M.D.**  
Chief Medical Officer  
AARP Services, Inc.

How AARP is working to Disrupt Aging – challenging outdated beliefs and sparking new solutions so more people can choose how they live as they age.

**Date:** Monday, January 28, 2019  
**Time:** 12:00pm – 1:00pm  
**Location:** Wolfe Street Building, W2030



# Preventing progression in mild cognitive impairment: the Treating Auditory impairment and CogniTion (TACT) pilot trial

2/11/19

**Sergi Costafreda-Gonzalez**, Senior Lecturer in Old Age Psychiatry, Division of Psychiatry, University College London, UK

# Early phase trials of novel hearing therapeutics: avenues and opportunities

2/11/19

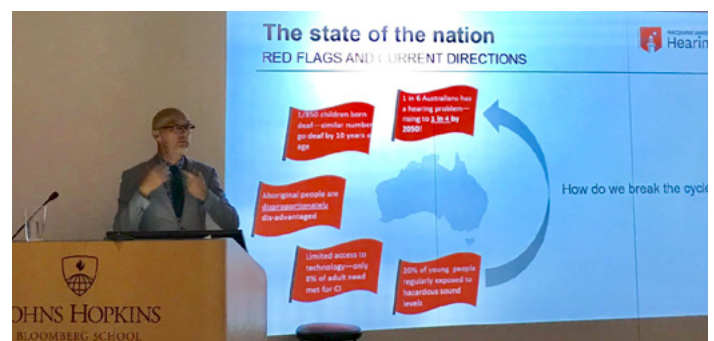
**Anne Schilder**, Professor of Otorhinolaryngology at the UCL Ear Institute, University College London, UK



# The Australian Hearing Hub — Thinking Global and Acting Local in Hearing Health

2/12/19

**David McAlpine**, Director of Hearing Research, Australian Hearing Hub, Macquarie University, Australia



# Brain Changes in Age-Related Hearing Loss

3/25/19

**Anu Sharma**, Professor, Department of Speech, Language and Hearing Sciences, University of Colorado at Boulder

# Journal clubs and research in progress meetings

## Welcome to the Cochlear Center for Hearing & Public Health! Academic Program Overview & Expectations

07/09/18

**Jennifer Deal**, Core Faculty, Cochlear Center for Hearing and Public Health

**Danielle Powell**, Cochlear Center for Hearing and Public Health Trainee

## Research in progress: Retinal signs and hearing loss in the Atherosclerosis Risk in Communities Neurocognitive Study (ARIC NCS)"

08/20/18

**Julie Kim**, Cochlear Center for Hearing and Public Health Trainee

## Journal club: E. Soto-Perez-de-Celis et al. (2018). Association between Patient-Reported Hearing and Visual Impairments and Functional, Psychological, and Cognitive Status Among Older Adults with Cancer. *Cancer*, 124, 3249-3256.

08/20/18

**Perry Kuo**, Cochlear Center for Hearing and Public Health Trainee

## Journal club: Gispen F., Chen, D., Genter, D., and Lin F. (2014). Association between Hearing Impairment and Lower Levels of Physical Activity in Older Adults. *Journal of the American Geriatric Society*, 62, 1427-1433.

09/10/18

**Pablo Martinez**, Cochlear Center for Hearing and Public Health Trainee

**Journal Club: Cosh et al. The Relationship between hearing loss in older adults and depression over 12 years: Findings from the Three-City prospective cohort study. International Journal of Geriatric Psychiatry. Sept 13, 2018; 1-8.**

10/08/18

**Danielle Powell**, Cochlear Center for Hearing and Public Health Trainee

**Research in Progress: Differential Association of Hormone Therapy with Change in Global Cognition and Incident Dementia by Hearing Status"**

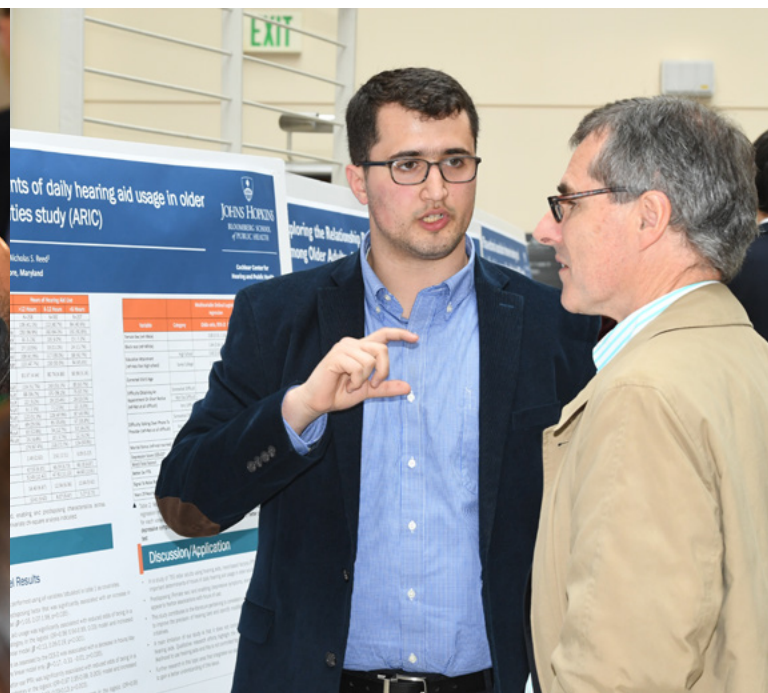
12/10/18

**Nicole Armstrong**, Cochlear Center for Hearing and Public Health Trainee

**Journal Club: Alvidrez et al. Building the Evidence Base to Inform Planned Intervention Adaptations by Practitioners Serving Health Disparity Populations. American Journal of Public Health, 2019. 109(S1), pp.S94-S101.**

02/25/19

**Jonathan Suen**, Cochlear Center for Hearing and Public Health Trainee



# Cochlear Center Research Day March 25, 2019



The poster features a dark blue background with a stylized globe graphic. At the top right, it includes the Johns Hopkins Bloomberg School of Public Health logo and the Cochlear Center for Hearing and Public Health name. The main title 'RESEARCH DAY' is prominently displayed in white, bold letters. Below the title, the date and location are specified: Monday, March 25, 2019, at the Johns Hopkins Bloomberg School of Public Health, Wolfe Street Building - (W1030) Anna Baetjer Room. A schedule of events is listed: 8:30AM - 9:00AM Breakfast; 9:00AM - 12:00PM Cochlear Center Faculty Presentations; 12:00PM - 1:15PM Keynote Speakers; and 1:30PM - 3:30PM Lunch & Trainee Poster Presentations (2024 E. Monument Street - Atrium Area). Two keynote speakers are highlighted: Dig Howitt, CEO & President of Cochlear Ltd, and Anu Sharma, Ph.D., Professor at the University of Colorado at Boulder. Contact information for Shannon Smitherman is provided at the bottom.

**Cochlear Center for Hearing and Public Health**  
**RESEARCH DAY**

Monday, March 25, 2019  
Johns Hopkins Bloomberg School of Public Health,  
Wolfe Street Building - (W1030) Anna Baetjer Room

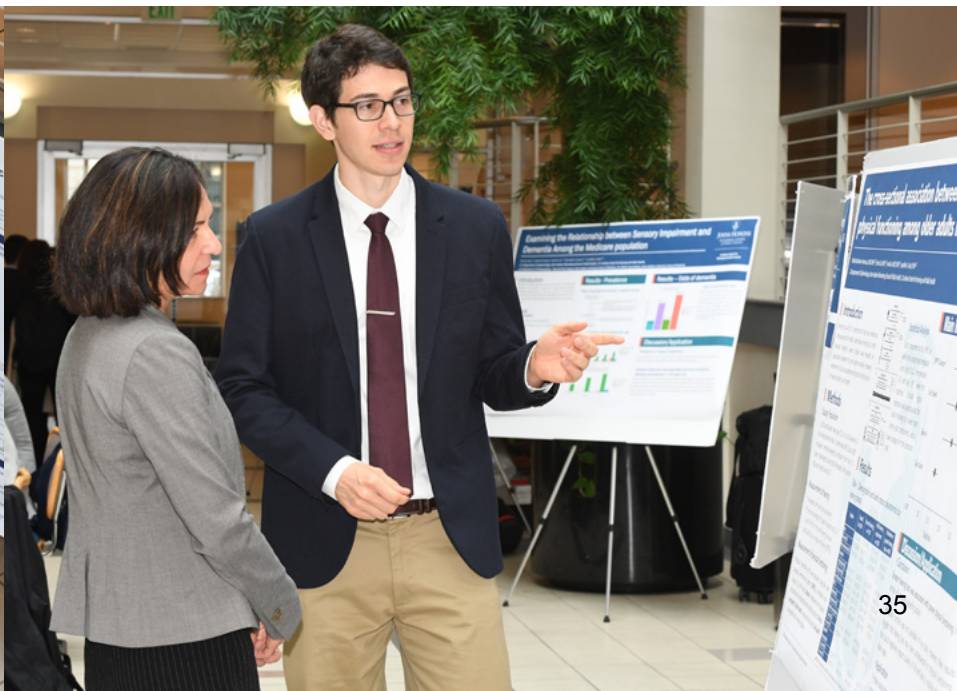
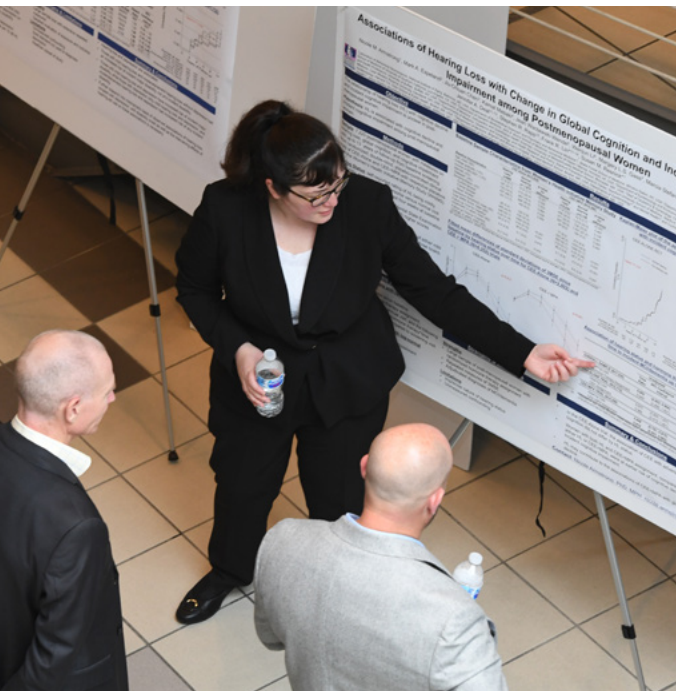
- 8:30AM - 9:00AM Breakfast
- 9:00AM - 12:00PM Cochlear Center Faculty Presentations
- 12:00PM - 1:15PM Keynote Speakers
- 1:30PM - 3:30PM Lunch & Trainee Poster Presentations  
(2024 E. Monument Street - Atrium Area)

Speaker: **Dig Howitt**  
CEO & President,  
Cochlear Ltd

Speaker: **Anu Sharma, Ph.D.**  
"Brain Changes in Age-Related Hearing Loss"  
Professor, Department of Speech, Language and Hearing Sciences  
Center for Neuroscience, University of Colorado at Boulder

For questions, please contact Shannon Smitherman (ssmithe1@jh.edu) [www.jhsph.edu/cochlear-center](http://www.jhsph.edu/cochlear-center)

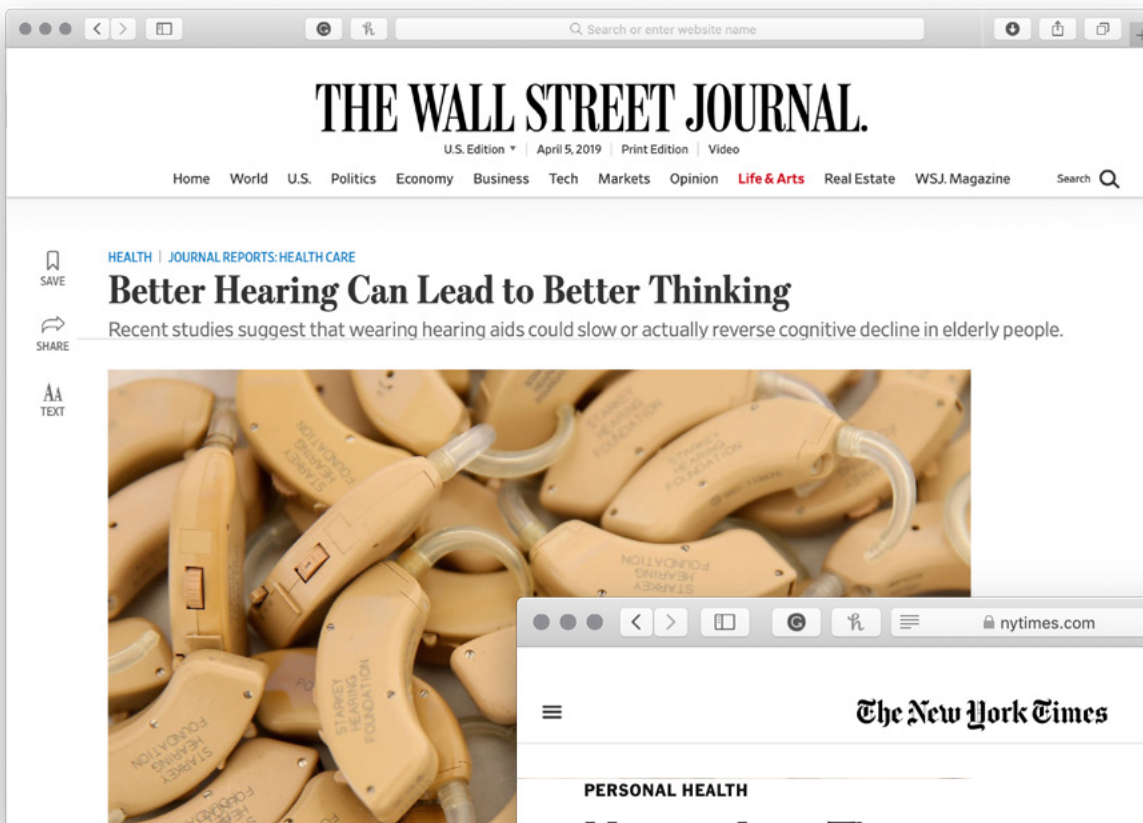
The first annual Cochlear Center Research Day took place on March 25 and consisted of short talks by Cochlear Center faculty in the morning, followed by keynote talks from Dig Howitt, Cochlear Ltd CEO and President, and Anu Sharma, Professor of Speech, Language and Hearing Sciences at the University of Colorado at Boulder. These talks were then followed by a poster session with the Cochlear Center trainees in the afternoon.



# News and Media



# Select news and media appearances



February 2019 ▲

Nicholas Reed and Jennifer Deal featured in the Wall Street Journal.

December 2018 ►

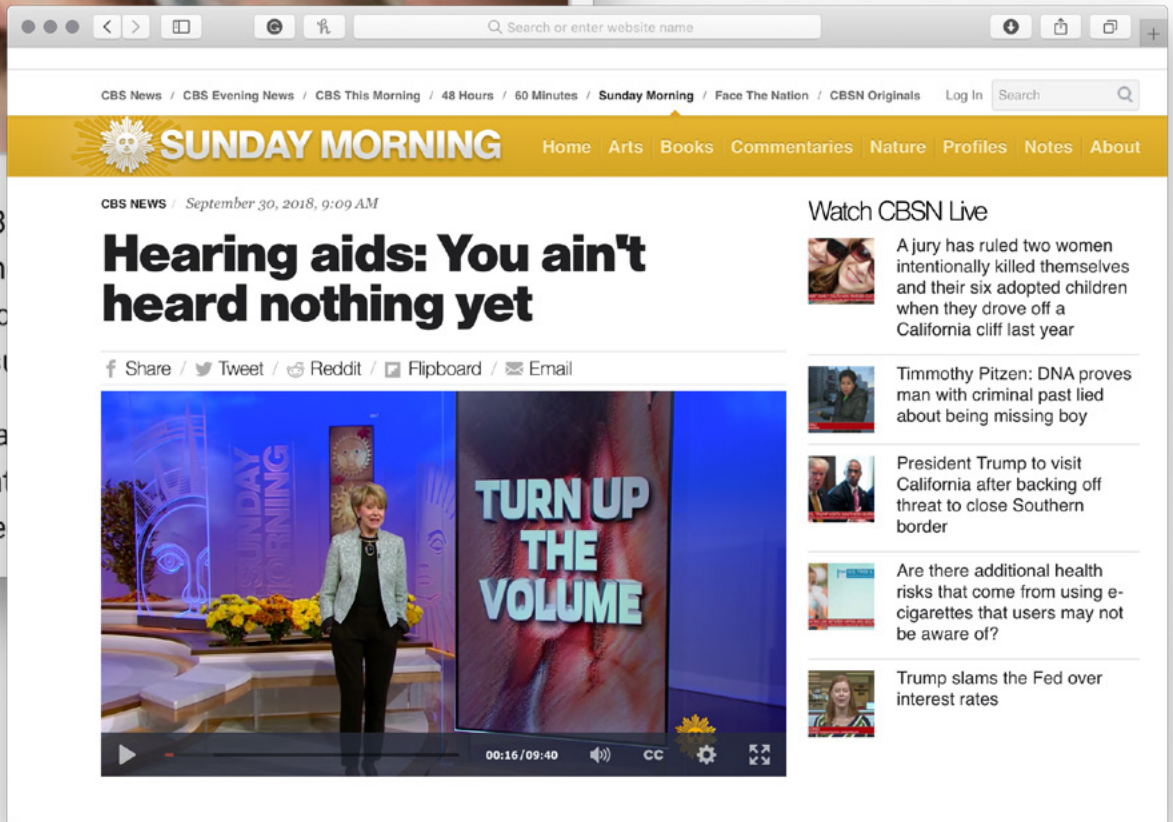
New York Times article features Frank Lin, Jennifer Deal, and Nicholas Reed



**November 2018**

Nicholas Reed and Jennifer Deal's research in partnership with Optum Labs and AARP is published in JAMA Otolaryngology and featured in US News and World Report and a JHSPH Press release.

THURSDAY, Nov. 8  
 hearing loss and n  
 medical bills and c  
 two new studies s  
 In one study, rese  
 77,000 U.S. patient  
 loss, and compare

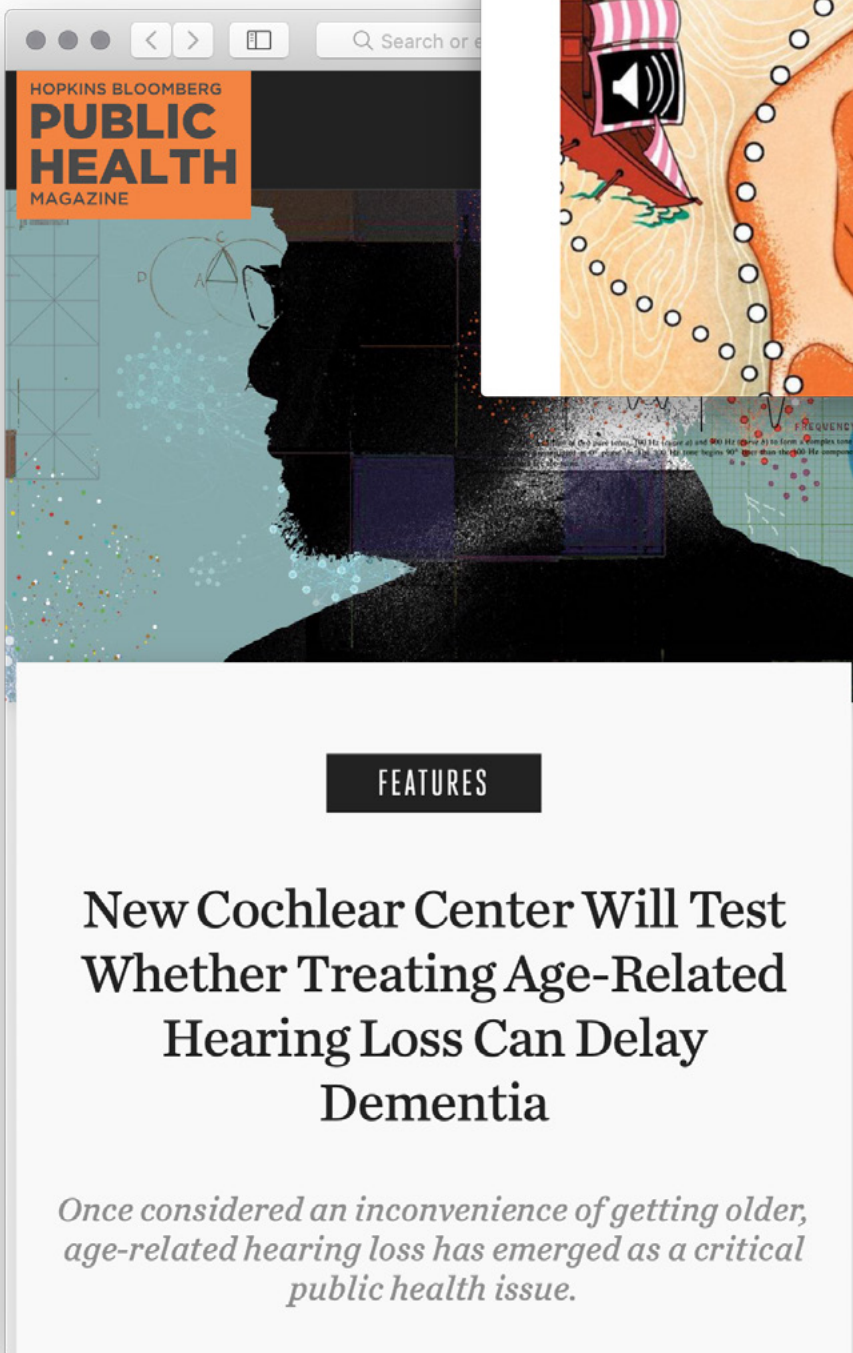
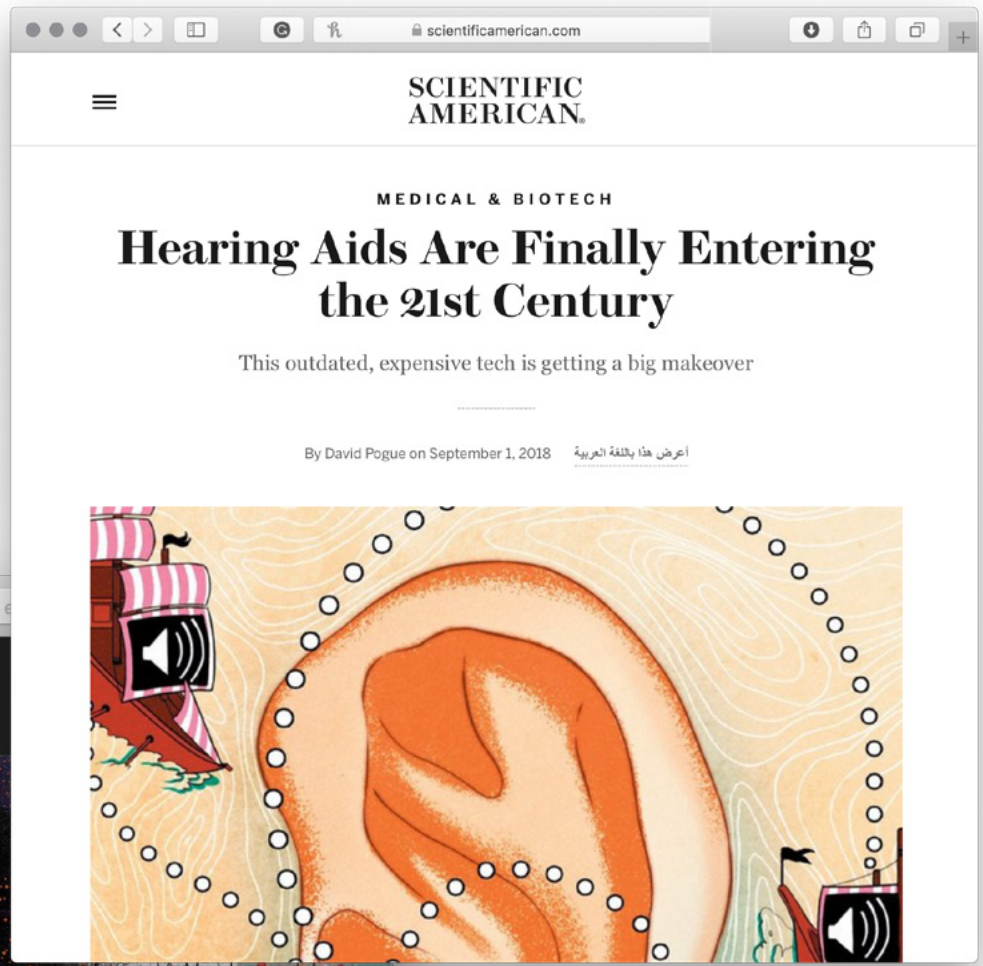


**September 2018**

Frank Lin and Nicholas Reed featured on CBS Sunday segment titled "Hearing aids: You ain't heard nothing yet"

September 2018 ▼

Frank Lin featured in a Scientific American article titled “Hearing aids are finally entering the 21st Century”



▲ Summer 2018

Cochlear Center featured in the JHSPH magazine



# Cochlear Center Website

COCHLEAR CENTER for  
HEARING and PUBLIC HEALTH



The greatest impact of hearing loss might not occur in our ears, rather what takes place between them.

ABOUT ▾

OUR WORK ▾

OPPORTUNITIES ▾

RESOURCES

NEWS & MEDIA ▾

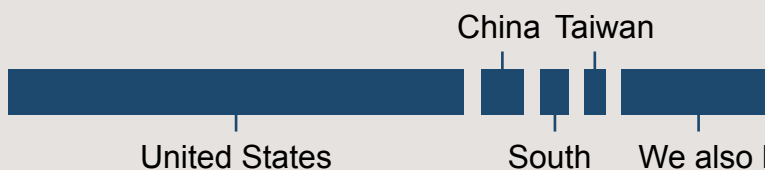


## June 10 2018

Cochlear Center Website launched

Over **15,800** page views

Over **3,600** unique users



China Taiwan

United States

South  
Korea

We also have viewers from  
Australia, Japan, India, UK,  
Canada, and Philippines

# Cochlear Center Core Faculty

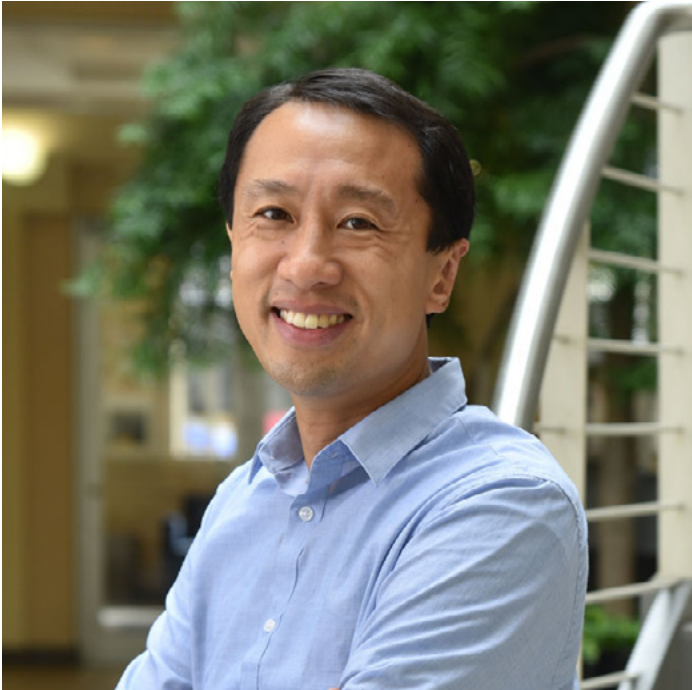


Cochlear Center for  
Hearing and Public Health

Cochlear Center for  
Hearing and Public Health

RISE ROAD DAY

## Frank Lin



Frank R. Lin, MD, PhD, is the director of the Cochlear Center for Hearing and Public Health and a professor of otolaryngology, medicine, mental health, and epidemiology at Johns Hopkins. His work at the Bloomberg School of Public Health is focused on understanding how hearing loss affects the health and functioning of older adults and implementing the local, national, and global strategies and policies needed to mitigate these effects. From 2014-2016, Lin led initiatives with the National Academies of Science, Engineering, and Medicine, the White House President's Council of Advisors on Science and Technology (PCAST), and Congress that resulted in passage of the Over-the-Counter Hearing Aid Act of 2017 which overturned 40 years of established regulatory precedent in the U.S. He currently serves as a member of the Board on Health Sciences Policy at the National Academies.

## Adele Goman



Adele M. Goman, PhD, is a research associate in the Department of Epidemiology at the Johns Hopkins Bloomberg School of Public Health. She holds a doctorate in psychology from the University of York, UK and completed postdoctoral training in epidemiology and clinical trials at Johns Hopkins University. Goman's research focuses on the epidemiology of hearing loss with respect to the prevalence of hearing loss and the impact hearing loss is expected to have in the coming decades. Her current research is examining geographic barriers to hearing care with a focus on the geographic variation in hearing loss and the spatial accessibility of rehabilitative hearing care services.

## Amber Willink



Amber Willink, PhD, is an assistant scientist in the Department of Health Policy and Management at the Johns Hopkins Bloomberg School of Public Health. Her research focuses on the economic and health service utilization implications of gaps in health insurance benefits on older adults. At the Cochlear Center for Hearing and Public Health, Willink examines the economic impacts of hearing loss on older adults and the Medicare program as well as health services utilization outcomes associated with treated and untreated hearing loss. She is interested in the practice and policy changes that can better support older adults with hearing loss and has published research on the options for the inclusion of hearing services under the Medicare program

## Carrie Nieman



Carrie L. Nieman, MD, MPH, is an assistant professor in the Department of Otolaryngology-Head and Neck Surgery at the Johns Hopkins University School of Medicine and co-founder of Access HEARS, a nonprofit committed to the delivery of affordable, accessible hearing care. As a clinician, researcher, and social entrepreneur, her commitment to social justice is inseparable from her drive to provide innovative solutions to address disparities in hearing care. Her epidemiological work documents widespread disparities in hearing health care. In order to move toward innovative, evidence-based, and sustainable solutions, Nieman works across disciplines and translates research and approaches in gerontology, social design, behavioral intervention research, community-based participatory research, and human factors to advance hearing health equity and bring innovation to underserved communities.

## Jennifer Deal



Jennifer A. Deal, PhD, is an epidemiologist and gerontologist with expertise in cognitive aging. She is an assistant scientist in the Department of Epidemiology at the Johns Hopkins Bloomberg School of Public Health. At the Cochlear Center, Jennifer Deal is the Associate Director of Academic Training and oversees the training and didactic programs for trainees at the Center. Trained in the epidemiology of aging, Deal studies the effects of hearing loss on an aging brain and how hearing loss influences cognitive function to inform strategies for the primary prevention of cognitive decline and dementia in older adults.

## Joshua Betz



Joshua Betz, MS, is a biostatistician in the Johns Hopkins Biostatistics Consulting Center and is a research associate in the Department of Biostatistics at the Johns Hopkins Bloomberg School of Public Health. He obtained his MS in biostatistics from the University of Maryland Baltimore County in 2012 and joined Johns Hopkins shortly afterwards. He works on epidemiological studies, clinical trials, software for data visualization and study design, and provides statistical consulting to public health researchers. Much of his work has involved studying associations between hearing loss and health outcomes in older adults, as well as developing pilot studies for hearing loss interventions. His interests are in statistical education and practice in science, understanding and mitigating the impact of hearing loss, public health, gerontology, and clinical trials.

## Nicholas Reed



Nicholas S. Reed, AuD is an assistant professor of audiology in the Department of Otolaryngology-Head and Neck Surgery at the Johns Hopkins University School of Medicine and core faculty at the Cochlear Center for Hearing and Public Health. He completed his clinical doctorate at Towson University and clinical fellowship at Georgetown University Hospital. Reed has collaborated on numerous Center projects including implementing hearing data collection in large epidemiologic studies and overseeing quality care initiatives to address hearing in the inpatient setting to address patient-provider communication. His research focuses on over-the-counter amplification devices and delivery models, understanding and addressing hearing in patient-provider communication, and the relationship between hearing and healthcare utilization patterns. His research on understanding over-the-counter hearing technologies and the need for separating devices from audiologic services has been published in JAMA.

# Cochlear Center Associate Faculty



**Esther Oh**

Esther Oh, MD, PHD, is an associate professor in the Division of Geriatric Medicine and Gerontology, and an Associate Director of the Johns Hopkins Memory and Alzheimer's Treatment. Oh's research interest is in Alzheimer's disease and related disorders including delirium. Oh actively collaborates with members of the Center on projects related to enhancing communication and improving hearing care for older adults with dementia and hearing loss.



**Josef Coresh**

Josef Coresh, MD, PhD, is the George W. Comstock Professor of Epidemiology, Biostatistics and Medicine at The Johns Hopkins University Bloomberg School of Public Health. Coresh serves as the co-principal investigator of the Aging and Cognitive Health Evaluation in Elders (ACHIEVE) study and works closely with Center faculty exploring data from the Atherosclerosis Risk in Communities Study (ARIC) to investigate the relationships between hearing loss and other health variables. He is a recognized leader in the epidemiology of kidney disease, big data, and biomarker research that has impacted clinical practice guidelines and policies.



**Luigi Ferrucci**

Luigi Ferrucci, MD, PhD, is the Scientific Director of the National Institute on Aging and conducts research on the causal pathways of age-related declines in health and functioning. Ferrucci collaborates with and mentors members of the Center exploring the relationships between hearing loss and health outcomes in the Baltimore Longitudinal Study of Aging.



## Margaret Korczak

Margaret Korczak, PhD, is a professor in the Department of Audiology, Speech-Language Pathology & Deaf Studies at Towson University. Korczak works closely with Center faculty on projects exploring the efficacy of technology products for individuals with hearing loss.



## Marilyn Albert

Marilyn Albert, PhD, is director of the Division of Cognitive Neuroscience and a professor in the Department of Neurology at Johns Hopkins. Albert's research focuses on the early identification of Alzheimer's disease and the cognitive and brain changes associated with aging. Albert is actively engaged in collaborations with Center faculty exploring the impact of hearing loss on cognition and brain changes in older adults.



## Mike Weikert

Mike Weikert, MFA, is the founding director of the Center for Social Design at the Maryland Institute College of Art (MICA). He and his team actively collaborate with members of the Center to design programs to improve the accessibility and affordability of hearing care for older adults.



## Sarah Szanton

Sarah Szanton, PhD, is a professor in the Department of Community-Public Health in the Johns Hopkins School of Nursing. She collaborates with members of the Center on projects addressing disparities in hearing health care and community-delivered hearing care interventions.



## Susan Resnick

Susan Resnick, PhD, is a senior investigator in the Laboratory of Behavioral Neuroscience at the National Institute on Aging. Resnick actively collaborates with Center staff and mentors Center trainees on brain imaging to explore the impact of hearing loss on the brain.



## Moyses Szklo

Moyses Szklo, MD, DrPH is a University Distinguished Service Professor and Professor in the Department of Epidemiology in the Johns Hopkins Bloomberg School of Public Health. He works closely with the Center on developing research and training initiatives in Latin America.



# Cochlear Center Staff

Shannon Smitherman



Shannon Smitherman is the academic program coordinator for the Cochlear Center where she coordinates and helps advise Center trainees, oversees all administrative and operational aspects of Center activities, and assists the director.

Simo Du



Simo Du, MD MHS, received her medical training from Xiangya Medical School, Central South University in China. She then pursued a MHS degree in epidemiology at Johns Hopkins School of Public Health with a focus on cognitive aging. She currently serves as a biostatistician at the Cochlear Center for Hearing and Public Health and primarily assists trainees in analyzing hearing data from Atherosclerosis Risk in Communities Study (ARIC).

Jami Cheng-Trumbo



Jami Cheng-Trumbo, MSPH, is a research coordinator for the Baltimore HEARS Study. She received her master of science in public health in health education and health communication from the Johns Hopkins School of Public Health. She currently leads the coordination of the HEARS study and other Center-related activities.

**Mengru  
Liao**



Mengru Liao received her bachelor's in applied art design from Renmin University of China and master's in social design from Maryland Institute College of Art. She works closely with Center faculty on the development of hearing interventions and other applications requiring the use of social design and graphic design.

**Emily  
Pedersen**



Emily Pedersen, MS.Ed., MPH, is a research coordinator with the Cochlear Center and a recruitment committee member in ACHIEVE. Pedersen was a teacher for Baltimore City Public Schools before earning her Master of Public Health in health policy and a certificate in health inequities from the Johns Hopkins School of Public Health. In the future, she is interested in attending medical school.

**Kevin  
DeMario**



Kevin DeMario is a research program assistant who works on the HEARS clinical trial. He has his undergraduate degree and master's degree in philosophy from Johns Hopkins and is interested in going to medical school in the future.

**Lechi  
Nwanegwo**



Lechi Nwanegwo, a graduate of Morgan State University, is a research program assistant for the Baltimore HEARS Study. Her interests include increasing health equity in underserved communities and prevention medicine. She is currently preparing to apply for medical school.

**Laura  
Sherry**



Laura Sherry, AuD, is a research audiologist with the Cochlear Center where she is currently the lead audiologist for the Washington County field site of the ACHIEVE trial.

**Laura  
Westermann**



Laura Westermann received her BA in Organizational Communication and an M.Ed in Foreign Language Education from the University of South Florida. Laura currently works on the ACHIEVE trial at the Washington County field site.

# Advisory Board

## Johns Hopkins

### David D. Celentano

ScD, MHS  
Dr. Charles Armstrong Chair and Professor,  
Department of Epidemiology

### David S. Friedman

MD, PhD  
Alfred Sommer Professor of Ophthalmology and  
International Health

### Alfred Sommer

MD, MHS  
Dean Emeritus and Professor

### Josef Coresh

MD, PhD  
G.W. Comstock Professor of Epidemiology,  
Biostatistics & Medicine

### Ellen J. MacKenzie

PhD, ScM  
Bloomberg Distinguished Professor;  
Dean Bloomberg School of Public Health

## Cochlear

### David Cade

MD, MBA  
Chief Medical Officer, Cochlear Limited

### Fernando Gonzalo

MSc, MBA  
Head of Global Market Access and Health  
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# Publications and Presentations in Cochlear Center mission areas



# Publications by Center faculty and trainees

1. Armstrong NM, An Y, Ferrucci L, Deal JA, Lin FR, & Resnick SM. Temporal Sequence of Hearing Impairment and Cognition in the Baltimore Longitudinal Study of Aging [published online ahead of print November 30 2018]. *Journal of Gerontology, Series A, Medical Science*. doi: 10.1093/gerona/gly268. PMID: 30500877.
2. Armstrong NM, Deal JA, Betz J, Kritchevsky S, Pratt S, Harris T, Barry LC, Simonsick EM, Lin FR. Associations of Hearing Loss and Depressive Symptoms with Incident Disability in Older Adults: Health, Aging and Body Composition Study [published online ahead of print December 17 2018]. *J Gerontol A Biol Sci Med Sci*. doi: 10.1093/gerona/gly251. PMID: 30561511.
3. Applebaum J, Hoyer M, Betz J, Lin FR, Goman AM. Long-term subjective loneliness in adults after hearing loss treatment. [published online ahead of print March 31 2019]. *International Journal of Audiology*. doi: 10.1080/14992027.2019.1593523. PMID: 30929531.
4. Arnold ML, Oree P, Sanchez V, Reed NS, Chisolm T. Development and formative assessment of the hearing loss toolkit for self-management. *Seminars In Hearing*. 2019; 40(1): 49-67. PMID: 30728649.
5. Brenowitz WD, Kaup AR, Lin FR, Yaffe K. Multiple sensory impairment is associated with increased risk of dementia among black and white older adults [published online ahead of print November 18 2018]. *J Gerontol A Biol Sci Med Sci*. doi: 10.1093/gerona/gly264. PMID: 30452551.
6. Croll PH, Voortman T, Vernooij MW, Baatenburg de Jong RJ, Lin FR, Rivadeneira F, Ikram MA, Goedegebure A. The association between obesity, diet quality and hearing loss in older adults. *Aging (Albany NY)*. 2019; 11(1): 48-62. PMID: 30609412.
7. Deal JA, Goman AM, Albert MS, Arnold ML, Burgard S, Chisolm T, Couper D, Glynn NW, Gmelin T, Hayden KM, Mosley T, Pankow JS, Reed N, Sanchez VA, Richey Sharrett A, Thomas SD, Coresh J, Lin FR. Hearing treatment for reducing cognitive decline: Design and methods of the Aging and Cognitive Health Evaluation in Elders randomized controlled trial. *Alzheimers Dement (N Y)*. 2018; 4: 499-507. PMID: 30364572.
8. Deal JA, Reed NS, Kravetz AD, Weinreich H, Yeh C, Lin FR, Altan A. Incident Hearing Loss and Comorbidity: A Longitudinal Administrative Claims Study [published online ahead of print November 8 2018]. *JAMA Otolaryngol Head Neck Surg*. doi: 10.1001/jamaoto.2018.2876. PMID: 30419134.
9. Goman AM, Dunn CC, Gantz BJ, Lin FR. Prevalence of potential hybrid and conventional cochlear implant candidates based on audiometric profile. *Otol Neurotol*. 2018; 39(4), 515-517. PMID 29498962.
10. Goman AM, Lin FR. Hearing loss in older

- adults - From epidemiological insights to national initiatives. *Hear Res.* 2018; 369: 29-32. PMID: 29653842.
11. Horne AJ, Chiew KS, Zhuang J, George LK, Adcock RA, Potter GG, Lad EM, Cousins SW, Lin FR, Mamo SK, Chen NK, Maciejewski AJ, Duong Fernandez X, Whitson HE. Relating Sensory, Cognitive, and Neural Factors to Older Persons' Perceptions about Happiness: An Exploratory Study. *J Aging Res.* 2018; 2018: 4930385 PMID: 30652033.
  12. Mamo SK, Mayhew SJ, Nirmalasari O, Oh ES, McNabney MK, Rund J, Lin FR. Age-related hearing loss and communication at a PACE Day Health Center. *J Am Med Dir Assoc.* 2018; 19(5): 458-459. PMID: 29526596.
  13. Mamo SK, Reed NS, Price C, Occhipinti D, Pletnikova A, Lin FR, Oh ES. Hearing Loss Treatment in Older Adults With Cognitive Impairment: A Systematic Review. *J Speech Lang Hear Res.* 2018; 61(10): 2589-2603. PMID: 30304320.
  14. McKee MM, Lin FR, Zazove P. State of research and program development for adults with hearing loss. *Disabil Health J.* 2018; 11(4): 519-524. PMID: 30087082.
  15. Mudie LI, Varadaraj V, Gajwani P, Munoz B, Ramulu P, Lin FR, Swenor BK, Friedman DS, Zebardast N. Dual sensory impairment: The association between glaucomatous vision loss and hearing impairment and function. *PLoS One.* 2018; 13(7): e0199889. PMID: 29979753.
  16. Nieman CL, Reed NS, & Lin FR. Otolaryngology for the Internist: Hearing Loss. *Medical Clinics North Am.* 2018; 102(6): 977-992. PMID: 30342615.
  17. Nkyekyer J, Meyer D, Pipingas A, & Reed NS. (2019). The cognitive and psychosocial effects of auditory training and hearing aids in adults with hearing loss. *Clinical interventions in aging.* 2019; 14: 123-135. PMID: 30666098.
  18. Reed NS, Altan A, Deal JA, Yeh C, Kravetz AD, Wallhagen M, Lin FR. Trends in Health Care Costs and Utilization Associated With Untreated Hearing Loss Over 10 Years [published online ahead of print November 8 2018]. *JAMA Otolaryngol Head Neck Surg.* doi: 10.1001/jamaoto.2018.2875. PMID: 30419131.
  19. Reed NS, Betz JF, Kucharska-Newton AM, Lin FR, Deal JA. Hearing loss and satisfaction with healthcare: An unexplored relationship. *J Am Geriatr Soc.* 2019; 67(3): 624-626. PMID: 30512196.
  20. Reed NS, Deal JA, Huddle MG, Betz JF, Bailey BE, McGlumphy EJ, Eghrari AO, Riazuddin SA, Lin FR, Gottsch JD. Pilot Study of Audiometric Patterns in Fuchs Corneal Dystrophy. *J Speech Lang Hear Res.* 2018; 61(10): 2604-2608. PMID: 30286242.
  21. Reed NS, Lin FR, Willink A. Hearing Care Access? Focus on Clinical Services, Not Devices. *JAMA.* 2018; 320(16): 1641-1642. PMID: 30242394.
  22. Reed NS, Oliver A, Srinivasan N, Lin FR, Korczak PA. Pilot Comparison of Adjustment Protocols of Personal Sound Amplification Products. *Seminars In Hearing.* 2019; 40(1): 26-36. PMID: 30728647.
  23. Shukla A, Nieman CL, Price C, Harper M, Lin FR, Reed NS. Impact of Hearing Loss on Patient-Provider Communication Among Hospitalized Patients: A Systematic Review [published online ahead of print September 9 2018]. *American Journal of Medical Quality.* doi: 10.1177/1062860618798926. PMID: 30196712.
  24. Suen JJ, Bhatnagar K, Emmett SD, Marrone N, Rober SK, Swanepoel DW, Wong A,

Nieman CL. Improving Access to Hearing Care Across the Life Course Through Community-Delivered Care. Bulletin of the World Health Organization (In Press).

25. Suen JJ, Marrone N, Han HR, Lin FR, & Nieman CL (2019). Translating public health practices: Community-based approaches for addressing hearing health care disparities. *Seminars in Hearing*. 2019; 40(1): 37-48. PMID: 30728648.

26. Villavisanis DF, Lin FR, Deal JA. Quantification of Hearing Loss Research on Children Compared With Older Adults [published online ahead of print January 17 2019]. *JAMA Otolaryngol Head Neck Surg*. doi: 10.1001/jamaoto.2018.3889. PMID: 30653206.

27. Wallhagen M & Reed NS. Implications of Hearing Care Policy for Nurses. *Journal of Gerontological Nursing*, 2018; 44(9): 9-14. PMID: 30148527.

28. Willink A, & DuGoff EH. Integrating Medical and Nonmedical Services- The Promise and Pitfalls of the CHRONIC Care Act. *New England Journal of Medicine*, 2018; 378(23): 2153-2155. PMID: 29874539.

29. Willink A, Reed NS, Lin FR. Cost-Benefit Analysis of Hearing Care Services: What Is It Worth to Medicare? [published online ahead of print January 14 2019] *J Am Geriatr Soc*. doi: 10.1111/jgs.15757. PMID: 30641615.

30. Willink A, Reed NS, Lin FR. Access To Hearing Care Services Among Older Medicare Beneficiaries Using Hearing Aids. *Health Aff (Millwood)*. 2019; 38(1): 124-131. PMID: 30615534.

31. Willink A, Schoen C, Davis K. How Medicare Could Provide Dental, Vision, and Hearing Care for Beneficiaries. Issue brief (Commonwealth Fund), 2018; 2018: 1-12 PMID: 29345890.

# Upcoming trainee publications

(Submitted,  
Under Review/  
in preparation)

1. Alshabasy Y, Pedersen E, Willink A, Swenor B, Deal JA, Reed NS. Accompaniment to Health Care Visits among Medicare Beneficiaries with Dual Sensory Impairment. Submitted.

2. Armstrong N.M., An, Y., Doshi, J., Erus, G., Ferrucci, L., Davatzikos, C., Deal, J.A., Lin, F. & Resnick, S.M. Midlife Hearing Loss as a Risk Factor of Neurodegeneration of Temporal Lobar Structures: Baltimore Longitudinal Study of Aging. Submitted.

3. Croll PH, Bos D, Vernooij MW, Arshi B, Lin FR, Baatenburg de Jong RJ, Ikram MA, Goedegebure A, Kavousi M. Carotid atherosclerosis is associated with age-related hearing loss. Submitted.

4. Croll PH, Vinke EJ, Licher S, Vernooij MW, Lin FR, Baatenburg de Jong RJ, Goedegebure A, Ikram MA. Age-related hearing loss and cognitive decline in the general population. In preparation.

5. Horiuchi W, Willink A, Reed NS. Help Seeking Behaviors Among Medicare Beneficiaries with Hearing Loss. In preparation.

6. Shukla A, Cudjoe T, Lin FR, Reed NS. Hearing



Loss and Social Engagement Among Medicare Beneficiaries. Submitted.

7. Shukla A, Hsu F, Slobogean B, Langmead S, Lu Y, Blakeley J, Strowd R. Association Between Quality of Life and Objective Measures of Disease in Neurofibromatosis Type 2. Submitted.
8. Suen JJ, Betz J, Lin FR, & Goman AM. Prevalence of asymmetric hearing among adults in the United States. In preparation.
9. Suen JJ, Marrone N, Bakke MH, Han HR, Szanton S, Gitlin L, Lin FR, & Nieman CL. Developing a train-the-trainer program to promote accessible care by community-dwelling older adults with hearing loss. In preparation.

# Presentation list

1. Armstrong NM, Deal JA, Kritchevsky S, Pratt S, Harris T, Barry LC, Simonsick EM, & Lin FR. (March and April 2018). Differences in the association of depression and disability by hearing ability in older adults. Poster presentation at the Annual Scientific and Technology Conference of the American Auditory Society, Scottsdale, AZ and 11th Annual Elizabeth L. Rogers Research on Aging Showcase, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.
2. Armstrong NM, An Y, Doshi J, Erus G, Ferrucci L, Davatzikos C, Deal JA, Lin F, & Resnick SM. (May and July 2018). Right Ear Advantage: Association of Laterality of Peripheral Hearing Loss with Temporal Lobe Neurodegeneration. Poster presentation at the Annual National Institute on Aging Retreat, Baltimore, MD, 2018 AAIC, Chicago, IL, and 2018 National Institutes of Health Research Festival.
3. Armstrong NM, Deal JA, Gross AL, Gates G & Lin FR. (August 2018). Comparison of Associations of Metrics of Auditory Function with Incident Dementia. Adult Changes in Thought Symposium, Seattle, WA.
4. Armstrong NM, Espeland MA, Chen JC, Masaki K, Wactawski-Wende W, Li W, Gass MLS, Stefanick M, Manson JE, Deal JA, Rapp SR, Lin FR, & Resnick SM. (November 2018). Differential Association of Hormone Therapy with Change in Global Cognition and Incident Dementia by Hearing Status. The Gerontological Society of America's 70th Annual Scientific Meeting, Boston, MA.

5. Betz JFB. Optimizing Clinical Trial Designs for Evaluating Subgroup Effects. Johns Hopkins InHealth Precision Medicine Symposium, Johns Hopkins University. Baltimore, MD, March 27, 2018.
6. Deal JA, Reed NS, and Betz JFB. Interpreting and understanding the relationship between hearing loss and cognitive decline. AAA Learning Module, American Academy of Audiology AAA 2018 annual conference. Nashville, TN, April 18-21, 2018.
7. Rosenblum MA and Betz JFB. Adaptive Enrichment Trial Designs: Statistical Methods, Trial Optimization Software, and Four Case Studies. ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC, September 12, 2018
8. Lin FR & Betz JFB. Hearing Loss and the 3rd Age of Public Health. Johns Hopkins Biostatistics Center Celebration Showcase: Highlighting 20 Years of Advancing Research and Practice at Johns Hopkins and Beyond, Johns Hopkins University. Baltimore, MD, December 7, 2018.
9. Betz JFB. Estimating Hearing and Its Association with Cognition using External or Internal Validation Cohorts. Methods in Cardiovascular Epidemiology Research In Progress Talk, Welch Center for Prevention, Epidemiology, and Clinical Research, Johns Hopkins University. Baltimore, MD, December 14, 2018.
10. Betz JFB. The Promise and Perils of Subjective Sensory Data. Center on Aging and Health Cognitive/Sensory Working Group, Center on Aging and Health, Johns Hopkins University. Baltimore, MD, February 18, 2019.
11. Deal JA. Hearing Loss & Dementia: From Epidemiologic Evidence to Clinical Care. Master Class, American Speech-Language-Hearing Association (ASHA) Convention, Boston, MA, November 16, 2018.
12. Deal JA. Public Health Significance of Age-Related Hearing Loss. Featured Session at the American Academy of Audiology AAA 2018 annual conference. Nashville, TN, April 20, 2018.
13. Deal JA. Hearing Loss and the Aging Brain. Healthy Aging Summit, Washington, D.C., July 16, 2018.
14. Deal JA, Brenowitz WD, Simonsick E, Betz J, Harris T, Helzner E, Pratt S, Rosano C, Yaffe K, Lin FR. Joint Associations of Hearing Loss and APOE e4 Genotype on Risk of Dementia and Cognitive Decline in the Health ABC Study. Cognitive Aging Conference, Atlanta, GA, May 4, 2018.
15. Deal JA. Interpreting and understanding the relationship between hearing loss and cognitive decline. AAA Learning Module, American Academy of Audiology AAA 2018 annual conference. Nashville, TN, April 18-21, 2018.

16. Deal JA, Reed N, Mamo S, Lin FR. Cognition and speech-in-noise performance: population-based studies. Podium presentation at the 2018 Scientific and Technology Meeting of the American Auditory Society. Scottsdale, AZ, March 1, 2018.
17. Goman AM, Betz J, Reed N, Oduola B, Lin F, Curriero F. Spatial accessibility of rehabilitative hearing care in Florida. Poster presented at the American Auditory Society Annual Conference, Scottsdale, Arizona, USA. March 2018
18. Goman AM, Betz J, Reed N, Oduola B, Lin F, Curriero F. Geographic distribution of hearing loss and hearing care. Poster presented at the Johns Hopkins GIS Day, Baltimore, Maryland, USA. November 14 2018.
19. Horiuchi W. Health Care-Seeking Behaviors of Medicare Beneficiaries with Functional Hearing Loss. Podium presentation. 2019 Hawaii Chapter Scientific Meeting of the American College of Physicians. Honolulu, HI, Feb 23, 2019.
20. Kim S. Retinal signs and hearing loss in the atherosclerosis risk in communities neurocognitive study. Medical Student Research Symposium 2019. Baltimore, MD, February 8, 2019.
21. Lin FR, Invited Keynote Speaker, "Hearing loss, aging, and public health" – Amplifon Ageing and Hearing Loss: State of the Art and New Steps, Milan, Italy, March 2018
22. Lin FR, Invited Keynote Speaker, "Hearing loss in older adults – a public health perspective" – East Asian Society of Otolaryngology, Seoul, Korea, May 2018
23. Lin FR, Invited Keynote Speaker "Aging, Hearing, and Public Health – From Epidemiology to Clinical Trials and Public Policy in the U.S.", British Society of Otolaryngology, Manchester, UK, July 2018
24. Lin FR, Seminar Speaker, "Hearing loss in the third era of public health" – Johns Hopkins Cochlear Center for Hearing and Public Health, Baltimore MD, September 2018
25. Lin FR, Miniseminar speaker, "Hearing Loss in Older Adults – From Epidemiology to Clinical Trials & Public Policy in the U.S.", - American Academy of Otolaryngology-Head & Neck Surgery, Atlanta, GA, September 2018
26. Lin FR, Invited Speaker, "Hearing loss, Aging and Public Health", "Hearing loss in Older Adults in the United States – Role of Over-the-Counter Hearing Aids", "Addressing Hearing loss in Older Adults – Innovative Approaches", Brazilian Academy of Otolaryngology Meeting, Joao Pessoa, Brazil, October 2018
27. Lin FR, Invited Speaker, "Hearing loss in the third era of public health – where we're headed with the Cochlear Center" – Maryland Commission on Aging, Laurel, MD, November 2018
28. Lin FR, Invited Keynote Speaker, "Aging, Hearing loss and Public Health", Cochlear Nordic Symposium, Malmo, Sweden, January 2019
29. Lin FR, Invited Keynote Speaker, "Hearing loss, Cognition and Dementia – From Epidemiologic Insights to Clinical Trials and Public Policy", KIND Foundation Symposium on Hearing and Cognition, Berlin, Germany, February 2019
30. Lin FR, Seminar speaker, "Hearing Loss, Cognition, & Dementia - From Epidemiologic Insights to Clinical Trials" – Association for Research in Otolaryngology, Baltimore, MD, February 2019
31. Nair P. Development of low-contact hearing screening tool for use in sound field,

Department of Biomedical Engineering Design Day, Baltimore, MD, May 7, 2018

Delivered Care. AAO-HNSF Annual Meeting. Miniseminar Speaker. Atlanta, GA. 10/2018

32. Nair P. Software application development and acoustic validation of a sound field hearing screening tool, ARO Midwinter Conference, Baltimore, MD, February 9, 2019.

40. Nieman CL. Over-the-Counter Hearing Care: Updates, Innovations, and its Impact on Your Practice. Over-the-Counter Amplification: A Gerontological Perspective. AAO-HNSF Annual Meeting. Miniseminar Speaker. Atlanta, GA. 10/2018

33. Nieman CL. Updates on the HEARS Intervention. Cochlear Center for Hearing and Public Health. Monthly Seminar Series. Invited Speaker. Baltimore, MD. 6/2018

41. Nieman CL. Updates on Diversity and Inclusion: Innovations and Paths Forward within Otolaryngology. Increasing the Surgical Specialty Pipeline: A Mentored Otolaryngology Clerkship for Underrepresented Minorities in Medicine. AAO-HNSF Annual Meeting. Miniseminar Speaker. Atlanta, GA. 10/2018

34. Nieman CL. Social Design: From Concept to Practice. Cochlear Center for Hearing and Public Health. Monthly Seminar Series. Invited Speaker. Baltimore, MD. 8/2018

42. Nieman CL. Social Design & Human Factors: Opportunities for Innovation in Hearing Care. Invited Speaker. Population Hearing Healthcare Meeting. Pre-Conference Meeting for American Auditory Society. Scottsdale, AZ. 2/2019

35. Nieman CL. Innovations in Hearing Care. Broadmead Speaker Series. Invited Speaker. Baltimore, MD. 10/2018

43. Nieman CL. Age-Related Hearing Loss & Innovations in Community-Delivered Care. Luzerner Kantonsspital, Department of Otolaryngology Grand Rounds. Invited Speaker. Lucerne, Switzerland. 3/2018

36. Nieman CL. Hearing Health Equity: Why it Matters, Where We Are, and How We Advance. Johns Hopkins Center for Health Equity Jam Session. Invited Speaker. Baltimore, MD. 11/2018

44. Nieman CL. Over-the-Counter Amplification: A Gerontological Perspective. Luzerner Kantonsspital, Department of Otolaryngology Grand Rounds. Invited Speaker. Lucerne, Switzerland. 3/2018

37. Nieman CL. Dementia & Hearing: Advancing Community-Delivered Hearing Care as Tertiary Prevention. Johns Hopkins Clinical, Social, and Scientific Foundations of Geriatric Medicine Grand Rounds. Invited Speaker. Baltimore, MD. 12/2018

45. Nieman CL. Age-Related Hearing Loss & Innovations in Community-Delivered Care. Klinikum Bielfeld, Department of Otolaryngology Grand Rounds. Invited Speaker. Bielfeld, Germany. 4/2018

38. Nieman CL. Session Co-Chair, Dementia Care Research: Community & Institutional Care, Dementia & Hearing Care Disparities: Prevalence of Proxy-Rated Hearing Loss & Hearing Aid Use in a Community-Dwelling Cohort of Diverse Older Adults with Dementia. Alzheimer's Association International Conference. Chicago, IL. 7/2018

46. Powell D. Hearing Loss and Diabetes. Cochlear Center Research in Progress Talk, Center on Aging and Health, Johns Hopkins University. Baltimore, MD, May 18, 2018

39. Nieman CL. Hearing Loss in Older Adults: A Public Health Imperative. Age-Related Hearing Loss & Innovations in Community-

47. Powell D. Innovations in Hearing Care. Broadmead Retirement Center. Invited talk. Baltimore, Maryland, October 23, 2018
48. Powell D. How does the presence of Hearing Impairment influence an older adults dementia? Epidemiology and Biostatistics of Aging Research In Progress Talk, Center on Aging and Health, Johns Hopkins University. Baltimore, MD, February 11, 2019.
49. Reed NS. Interpreting and Understanding the Relationship Between Hearing Loss and Cognitive Decline. Podium Presentation, American Academy of Audiology, Nashville, Tennessee, April 2018
50. Reed NS. Public Health Significance of Age-related Hearing Loss. Invited Feature Speaker, American Academy of Audiology, Nashville, Tennessee, April 2018
51. Reed NS. Hearing Loss and the Health Care System, Speaker, Cochlear Center for Hearing and Public Health Seminar Series at Johns Hopkins University, Baltimore, Maryland, July 2018
52. Reed NS. Over-the-Counter Hearing Care. Invited Speaker, American Speech Language Hearing Association Conference, Boston, MA November 2018.
53. Reed NS. Mamo SK. Deal A. Hearing Loss and Dementia Master Class. Invited Speaker, American Speech Language Hearing Association Conference, Boston, MA November 2018.
54. Reed NS. Hearing Loss and the Health Care System. Invited Speaker, Hearing Hub Seminar Series at Macquarie University, Sydney, Australia, August 2018
55. Reed NS. Cost Effective Hearing Care. Invited Speaker, French-Brazilian Hearing Summit, Belo Horizonte, Brazil (via satellite feed), August 2018
56. Reed NS. Hearing Loss and Aging: Public Health Implications. Invited Feature Presentation, New Mexico Speech Language Hearing Association, Albuquerque, New Mexico, October 2018.
57. Reed NS. Over-the-Counter Hearing Care Update. Invited Panelist, American Academy of Otolaryngology Conference, Atlanta, Georgia, October 2018 .
58. Reed NS. Dementia and Hearing Loss. Invited Speaker, Academy of Doctors of Audiology Conference, Orlando, Florida, October 2018
59. Reed NS. Hearing Loss and Dementia: What it Means for Audiology? Invited Speaker, Maryland Academy of Audiology, Timonium, Maryland, October 2018
60. Reed NS. Hearing Loss and Aging: Public Health Considerations, Keynote Speaker – Adrian Davis Lecture, British Academy of Audiology, Manchester, United Kingdom, November 2018
61. Reed NS. Missing from Medicare: Where Are We on Oral, Hearing, and Visual Health? Invited Panelist, Gerontological Society of America, Boston, Massachusetts, November 2018.
62. Reed NS. Hearing Loss and the Health Care System. Invited Speaker, Center for Health Services and Outcomes Research Speaker Series at Johns Hopkins University, Baltimore, Maryland, November 2018.
63. Shade J. Software application development and acoustic validation of a sound field hearing screening tool. MidWinter Meeting, Association for Research in Otolaryngology. Baltimore, MD, February 9-13, 2019.
64. Suen JJ, Crowder S, Madison A, Peoples

- CY, Marrone N, Han HR, Nieman CL, & Lin FR. (2018 March). Baltimore HEARS pilot: A community health worker-delivered hearing care intervention. Presented at the annual meeting of the American Auditory Society (AAS), Scottsdale, AZ.
65. Suen JJ, Crowder S, Madison A, Peoples CY, Marrone N, Han HR, Nieman CL, & Lin FR. (2018 March). Baltimore HEARS pilot: A community health worker-delivered hearing care intervention. Presented at the annual aging research showcase hosted by the Johns Hopkins Medical Institutions, Baltimore, MD.
66. Suen JJ, Crowder S, Madison A, Peoples CY, Lin FR, & Nieman CL. (2018 July). Training a community workforce to address hearing impairment and social engagement. Presented at the Healthy Aging Summit (American College of Preventative Medicine), Washington, DC.
67. Suen JJ, Marrone N, Szanton S, Han HR, Lin FR, & Nieman CL. (2018 Oct). Adapting a Community Health Worker Model for Accessible and Affordable Care to Address Age-Related Hearing Loss. Presented at the Coalition for Global Hearing Health meeting, Cape Town (Western Cape), South Africa.
68. Suen JJ, Nieman CL, Mamo SK, Slogeris B, Weikert M, & Lin FR. (2018 Oct). HEARS Train-the-Trainer: Development of a Community Health Worker Training Program to Address Age-Related Hearing Loss and Social Engagement. Presented at the World Congress of Audiology meeting, Cape Town (Western Cape), South Africa.
69. Suen JJ, Crowder S, Madison A, Peoples CY, Marrone N, Han HR, Szanton S, Gitlin L, Nieman CL, & Lin FR. (2018 Oct). Translating HEARS into practice: Feasibility and preliminary efficacy of a community health worker-delivered hearing care intervention. Presented at the World Congress of Audiology meeting, Cape Town (Western Cape), South Africa.
70. Suen JJ, DeMario VK, Lin FR, Reed NS, & Nieman CL. (2018 Oct). Assessing the suitability of over-the-counter amplification device user manuals for older adults. Presented at the World Congress of Audiology meeting, Cape Town (Western Cape), South Africa.
71. Shukla A. Hearing Loss is Associated with Depressive Symptoms in Older Adults. Abstract accepted for podium presentation, American Association of Audiology 2019 Annual Conference. Scottsdale, AZ, March 2 2019.
72. Shukla A. Impact of Hearing Loss on Patient-Provider Communication Among Hospitalized Patients. Poster presentation, American Academy of Otolaryngology-Head and Neck Surgery 2018 Annual Meeting. Atlanta, GA, October 9, 2018.
73. Willink A. Presenting in “Modernizing Medicare to Reward Better Care” session on how Medicare benefits and gaps in coverage impact out-of-pocket costs for beneficiaries. Presentation at Bipartisan Health Policy Retreat for Congressional Staffers, January 2019.
74. Willink A. Presented on estimates for adding Dental, Vision, and Hearing Benefit to Medicare and provided technical assistance for drafting legislation. Senator Cardin subsequently introduced legislation on a dental benefit for Medicare based on these discussions. Presentation to Senator Cardin’s Counsel, December 2018
75. Willink A. Presented on estimates for adding Dental, Vision, and Hearing Benefit to Medicare and provided technical assistance for drafting

legislation. Presentation to Senator Sanders' Counsel, December 2018

76. Willink A. Presented on estimates for adding Dental, Vision, and Hearing Benefit to Medicare and provided technical assistance for drafting legislation. Presentation to House Energy and Commerce Committee Counsel, November 2018

Cochlear Center for  
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**2018**

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Annual Report