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The Sound Health Network is an initiative of the National Endowment for the Arts, in partnership with the University of California, San Francisco, in collaboration with the National Institutes of Health, the John F. Kennedy Center for the Performing Arts, and Renée Fleming.

Our mission is to promote research and public awareness about the impact of music on health and wellness. Visit our website here.

End-of-Year Reading: 2021 Roundup

As 2021 winds down, we wish you a safe and comforting holiday season, filled with all of your favorite tunes. We look forward to connecting with you in 2022! But in case you missed any of the year's highlights, we're giving you a selection of great reads specially curated by the Sound Health Network.

Upcoming SHN Events

January 26, 2021 - Webinar: *Music and Incarceration*
Watch LIVE here!

February 23, 2021 - Webinar: *Musical Improvisation as Therapy*
Watch LIVE here!

Join the SHN Directory!

The **Sound Health Network Directory** brings together researchers, musicians, music therapists, music and arts organizations and other stakeholders who work at the intersection of music and health and well-being. This is a searchable directory of participants in our network. To add yourself or your organization, please click **here**.

In Conversation

Featuring Dr. Nina Kraus, author of *Of Sound Mind*

Neuroscientist Dr. Nina Kraus, the Hugh Knowles Professor of Neurobiology at Northwestern University, has been at the forefront of research on the impact of music for decades. She has now brought together the work of her lab and colleagues, as well as her own experiences in her book *Of Sound Mind: How Our Brain Constructs a Meaningful Sonic World*. It was published this September to wide acclaim: It was selected as NPR's book of the day in October, and San Francisco-based station KQED dubs it "her love letter to sound."

Renée Fleming, SHN's Founding Advisor, calls *Of Sound Mind* "an engaging and entertaining read" and Salon notes that it also "significantly, advocates for creating our own healthy sonic environments, to 'allow sound to change us for the better.'"

SHN Communications Director Dr. Indre Viskontas interviewed Nina on her podcast ***Inquiring Minds*** when the book was released this fall. "I think that we often don't recognize how important sound is, and how vast the sound mind, in fact, really is," Nina says. The auditory system, she explains, goes far beyond a simple pathway between the ears and the brain. "The hearing brain engages how we think, how we feel, how we move, how we incorporate information from our other senses... In fancy neuroscience jargon, hearing engages the cognitive sensory, motor and reward circuitry."

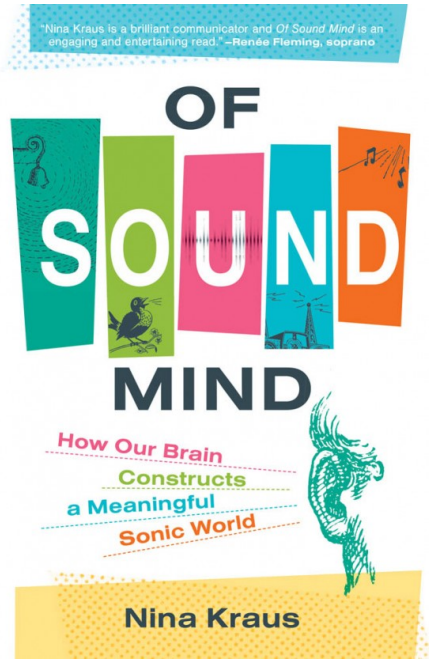
Understanding the brain's response to sound on a physiological level is an ongoing project: "Because the brain's response to sound is so fundamental to who a person is, and how they make sense of the world, if you can figure out what are the strengths and weaknesses of a person's ability to hear the details in sound, you have information that tells you a lot about what particular activities do to people as a group, and the Holy Grail really is the individual," Nina explains. So far, her research has shown that there is a distinctive signature for the athlete's brain, and for the bilingual brain, in addition to the musician's brain.

Nina notes that her book contains 80 illustrations that she worked with an artist to produce—they help illustrate technical terms (like "pitch," "timbre" and "intensity"), scientific concepts (such as how a plucked string moves the air molecules around it), and data (like the frequency ranges of different instruments). The breadth of illustrations

reflects the wide scope of the book itself and the breadth of Nina's research career. One chapter discusses rhythm; another, the linkages between music and language; a later chapter addresses aging and the sound mind.

Of Sound Mind is Nina's first trade book—she draws on her decades of research in auditory neuroscience to present complex ideas in approachable, conversational language. For those already working in areas related to sound and the brain, it's a wonderful way to introduce friends and family to concepts in our field—and perhaps to the undertaking of scientific research itself. "Science is a deeply human endeavor," Nina writes in Chapter Four. "It is a humble attempt to cast a little light into the vast darkness of our ignorance."

For those of us who are scholars and practitioners, it's an exemplar of communicating our work to the general public. And for all readers, *Of Sound Mind* is a powerful reminder of the ways that we can seek out healthier lives and healthier communities through our sonic experiences. Listen to the full interview **here** or wherever you get your podcasts.



2021 Research Spotlight

Ramirez et al. 2018. **EEG-based analysis of the emotional effect of music therapy on palliative care cancer patients.** Terminal cancer patients were assigned to the experimental group participating in music therapy while the control group was provided company. The music therapy group reported decreases in tiredness and anxiety, and showed changes in biomarkers measuring responses to emotion.

Zuk and Gaab 2018. **Evaluating predisposition and training in shaping the musicians brain: the need for a developmental perspective.** This paper discusses the much- debated issue of whether musicians are a result of training or predispositions, but importantly also describes why we need to look at this from a developmental lens and study children.

Weinberg and Joseph 2017. **If you're happy and you know it: Music engagement and subjective wellbeing**. After interviewing a random sample of 1000 participants, it was found that engaging with music by dancing or attending musical events was associated with increased subjective well-being, particularly if music engagement occurred in the company of others.

Weiss et al. 2021. **Enhanced memory for vocal melodies in autism spectrum disorder and Williams syndrome**. This study found that both children with Autism Spectrum Disorder and adults with Williams syndrome show enhanced processing for vocal melodies as compared to instrumental melodies, perhaps because vocal melodies have social significance for humans.

AARP White Paper. **Music on our minds: the rich potential of music to promote brain health and mental well-being**. This easy-to-read white paper is the result of experts examining research on how music influences brain health, particularly for older adults. Music listening and music making can support brain health as people age and specific recommendations are made in this report for how older adults can incorporate music into their lives.

Harrison, Horin, Earhart 2019. **Mental singing reduces gait variability more than music listening for healthy older adults and people with Parkinson Disease**. This study showed that matching your movement to your own voice (singing aloud or mentally) improves gait for older adults and people with Parkinson's disease.

Chiu 2020. **Function of music making under lockdown: a trans-historical perspective across two pandemics**. This paper performs a trans-historical comparison of music activities during the 1576 Milanese plague outbreak to music activities during COVID lockdowns in 2020. The article discusses how about musical activities are used in times of medical disasters.

Cirelli, Trehub, and Trainor, 2018. **Rhythm and melody as social signals for infants**. This review article talks about how infants experience music through social interactions with others (such as being bounced in synchrony). This article covers recent studies on musical engagement and the importance of rhythmic movement and socially relevant melodies in shaping infants' social preferences and prosocial behavior.

https://soundhealth.ucsf.edu/
Questions? email soundhealth@ucsf.edu