PARKER TICHKO
MIND Lab | Northeastern University
HTTPS://PTICHKO.GITHUB.IO/

EDUCATION

Ph.D., Psychological Sciences (Developmental), University of Connecticut | 2014 – 2019
M.S., Psychological Sciences (Developmental) | 2017
Certificate in the Neurobiology of Language | 2018
GPA: 4.0/4.0

Wheaton College, MA | 2006 – 2010
B.A., Double Major, Psychology & Music | With Honors

TECHNICAL AND WRITING SKILLS

Programming Languages: R, Matlab, Python (basic), SPSS
Audio Software: Ableton Live, Protools, Mixcraft. Extensive experience with audio editing, synthesis, mixing, and engineering. Also an accomplished composer and musician.
Electrophysiological Software: Brainvision, Biologic Systems, EEGLab.
Writing: Latex, Microsoft Word. Experience with technical, scientific, and marketing (e.g., marketing copy) styles.

HONORS AND AWARDS

- Cognitive Neuroscience Society, Post-Doctoral Fellow Award | 2021
- Provost's Teaching Excellence Letter, Developmental Psychology | 2019
- Association for Research in Otolaryngology (ARO) Travel Award | 2019
- NSF IGERT Fellowship | 2014, 2016
- Sam Wittoryl Fellowship | 2015
- Psi Chi Honor Society | 2010

RESEARCH POSITIONS

Post-Doctoral Research Fellow | 2019 – Current
    The MIND Lab
    Northeastern University
    Supervisor: Dr. Psyche Loui

PhD Student, NSF IGERT Fellow | 2014 – 2019
    The Music Dynamics Lab, The ABR Lab
    University of Connecticut
    Supervisor: Drs. Edward Large, Erika Skoe,

Lab Manager | 2011 – 2013
    Auditory Cognition and Development Lab
    University of Las Vegas, Nevada
    Supervisor: Dr. Erin E. Hannon

Research Assistant | 2009
    Music Department, Ethnomusicology
    Wheaton College, MA
    Supervisor: Dr. Matthew Allen

PUBLICATIONS

Articles:

Tichko P., Bird, K.A. & Kohn, G. (2021). Beyond "Consistent With" Adaptation: Is There a Robust Test For Music Adaptation? *Behavioral and Brain Sciences.*

Tichko P., Kim, J.C., & Large, E. (2021). Bouncing the Network: A Dynamical Systems Model of Auditory-Vestibular Interactions Underlying Infants' Perception of Musical Rhythm. *Developmental Science*.

Tichko P., Kim, J.C., Large, E., & Loui, P. (2020). Integrating music-based interventions with Gamma-frequency stimulation: Implications for healthy aging. *European Journal of Neuroscience.*

Tichko P. & Loui, P. (2020). Deutsch, D. Musical illusions and phantom words: How music and speech unlock mysteries of the brain. *Perception*.

Tichko P. & Large, E.W. (2019). Modeling infants' perceptual narrowing to musical rhythm: Neural oscillation and Hebbian learning. *Annals of the New York Academy of Sciences.*

Tichko, P. & Skoe, E. (2018). Musical experience, sensorineural auditory processing, and reading subskills in adults. *Brain Science*s.

Tichko, P. & Skoe, E. (2017). Frequency-dependent fine structure in the frequency-following response: The byproduct of multiple generators. *Hearing Research*

Ullal-Gupta, S., De Nederlanden, C.M.V.B., **Tichko, P.,** Lahav, A., & Hannon, E.E. (2013). Linking prenatal experience to the emerging musical mind. *Frontiers in Systems Neuroscience.*

Hannon, E.E., der Nederlanden, C.M.V.B., & **Tichko, P.** (2012). Effects of perceptual experience on children's and adults' perception of unfamiliar rhythms. *Annals of the New York Academy of Sciences.*

Books:

Tichko, P. (2020). *Mixcraft 9 Teacher's guide*. Oakhurst, CA: Acoustica.

Tichko, P. (2017). *Mixcraft 8 Teacher's guide*. Oakhurst, CA: Acoustica.

Tichko, P. (2014). *Mixcraft 7 Teacher's guide*. Oakhurst, CA: Acoustica.

Tichko, P. (2013). *Mixcraft 6 and mixcraft pro studio 6: Teacher's guide*. Oakhurst, CA: Acoustica. Distributed by Hal Leonard, inc.

PRESENTATIONS

Tichko, P., Kim, J.C. & Large, E. (2021, July). *Neural Resonance Theory and musical rhythm development: Towards a dynamical, radically embodied, and ecological theory of rhythm development.* Talk presented at the 16th International Conference on Music Perception and Cognition (ICMPC16) jointly organized with the 11th triennial conference of ESCOM. July 2021.

Tichko, P., Kim, J.C., Large, E., Zappi, V. & Loui, P. (2021, April). *Developing a novel gamma- and music-based intervention for Alzheimer's disease and dementia-related disorders.* Talk presented at NEST, University of Connecticut, Storrs, CT.

Tichko, P., Page, N., Kim, J.C., Large, E., Zappi, V. & Loui, P. (2021, March). *Developing a novel gamma- and music-based intervention for Alzheimer's disease and dementia-related disorders.* Poster presented at the Cognitive Neuroscience Society. Virtual conference.

Tichko, P. & Large, E. (2020, May). *Bouncing the network: A dynamical systems model of auditory-vestibular interactions underlying infants' perception of musical rhythm.* Poster presented at the Cognitive Neuroscience Society, Boston University, Boston, MA.

Tichko, P. & Skoe, E. (2019, February). *Reafferent processing in the human auditory brainstem: Auditory brainstem responses to self-produced sounds.* Poster session presented at Association for Research in Otolaryngology, Baltimore, MD.

Tichko, P. & Large, E. (2018, April). *Modeling infants' perceptual narrowing to musical rhythms with gradient frequency neural networks.* Talk presented at NEST, University of Connecticut, Storrs, CT.

Tichko, P. & Skoe, E. (2017, October). *Investigating the relationships between auditory processing, reading-related skills, and musical training in adult readers.* Poster session presented at NERDY, University of Connecticut, Storrs, CT.

Tichko, P. & Skoe, E. (2017, June). *Investigating the relationships between auditory processing, reading-related skills, and musical training in adult readers.* Poster session presented at NeuroMusic, Harvard Medical School, Boston, MA.

Scarpati, E. & **Tichko**, **P**. (2017, April). *Investigating the dynamic expression of emotion in music and motion: A developmental study.* Poster sessions presented at Frontiers, University of Connecticut, Storrs, CT.

Tichko, P., & Skoe, E. (2017, February). *Frequency-dependent fine structure in the frequency-following response: The byproduct of multiple generators.* Poster session presented at Association for Research in Otolaryngology, Baltimore, MD.

Tichko, P., & Skoe, E. (2016, May). *Neural symphony: Mapping the piano keyboard to the subcortical auditory system.* Poster session presented at the Frequency-Following Workshop, Boston University, Boston, MA.

Turovac, C., **Tichko, P.,** Shaw, K., Bortfeld, H. (2016, April) *Investigating the role of temporal speech dynamics in infant and adult talker identification.* Poster session presented at Frontiers, University of Connecticut, Storrs, CT.

Tichko, P., Wittke, K., Camera, S., Theodore, R., & Skoe, E. (2016, January). *Investigating reading skills and auditory processing in adult musicians.* Poster session presented at LangFest, University of Connecticut, Storrs, CT.

Tichko, P., & Skoe, E. (2016, January). *Neural symphony: Mapping the piano keyboard to the subcortical auditory system.* Poster session presented at the Northeast Music Cognition Group (NEMCOG), Harvard University, Boston, MA.

PATENTS

Kim, J. C. Large, E. W., Loui, P., **Tichko, P.** (2020). Methods and systems for neural stimulation via music and rhythmic visual stimulation. Provisional United States Patent Application No. 63/075,516. Filed Sep 8, 2020.

GRANTS AND FELLOWSHIPS

2020: NSF-STTR (PHASE I): *SynchronyGamma – A Music-Based Intervention for Alzheimer's and MCI.* **$250,000.** PIs: Drs. Psyche Loui & Ji Chul Kim.

2015: WITTORYL FELLOWSHIP: *Investigating the dynamics of music, motion, and emotion in infancy and childhood.* **$500.** PIs: Dr. Heather Bortfeld and Parker TIchko

2014: NSF IGERT DISCOVERY GRANT: *Investigating the impact of early music education on the neural encoding of speech in infancy.* **$5850.** PIs: Dr. Erika Skoe and Parker TIchko

TEACHING EXPERIENCE

University of Connecticut, Psychology Department
- Teaching Assistant, General Psychology I (Psychology 1100), Fall 2015 (3 Labs), Spring 2016 (4 labs)
- Teaching Assistant, Principles of Research in Psychology (Psychology 2100), Fall 2017 (1 Lab), Spring 2018 (1 Lab), Spring 2019 (1 Lab)
- Statistics Consultant, Fall 2017
- Instructor of Record, Developmental Psychology (1 Undergraduate Course), Fall 2018

Wheaton College, Music Department
- Guest Lecturer, Music and Dance of South Asia, Dr. Matthew Allen| 2009
- Guest Lecturer, Music in Latin American Culture, Dr. Matthew Allen | 2009
- Teaching Assistant, African American Originals I: Spirituals, Blues and All That, Jazz, Dr. Ann Sears | 2007

OUTREACH

Research Digest:
- Contributed to a research digest, published by the Connecticut Institute for the Brain and Cognitive Sciences, on atypical language development.
- The digest was released to the public and was disrupted to local government officials and policy makers. such as Autism Spectrum Disorder (ASD)

Neural Symphony:
- Created a "brain piano" to illustrate basic principles of auditory encoding in the brain.
- Featured on the University of Connecticut's 360 podcast. Listen here.

Computational Modeling with NetLogo:
- Developed a curriculum and project-based lesson plan using NetLogo to teach middle-schoolers basic principles about self-organization, complexity, and computational modeling.
- Guested lectured at a local middle school about self-organized processes in nature and taught middle-schoolers how to use NetLogo to create their own self-organized patterns.

AFFILIATIONS

- Society for Music Perception and Cognition (2011 – Present)
- Psi Chi Honor Society

AD-HOC REVIEWER

Reviewer for *Frontiers, Perception, Children,* and *Brain Sciences*