PARKER TICHKO

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

EDUCATION

Ph.D., Psychological Sciences, University of Connecticut | 2014 – 2019
M.S., Psychological Sciences | 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

- 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. (Submitted). Beyond "Consistent With" Adaptation: Is There a Robust Test For Music Adaptation? *Behavioral and Brain Sciences.*

Tichko P., Kim, J.C., & Large, E. (Under Review, Preprint on ResearchGate). Bouncing the Network: A Dynamical Systems Model of Auditory-Vestibular Interactions Underlying Infants' Perception of Musical Rhythm

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. & 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 (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

REVIEWER

Reviewer for *Perception*