

# Ji Chul Kim

Department of Psychological Sciences  
College of Liberal Arts and Sciences  
University of Connecticut  
406 Babbidge Road, Unit 1020  
Storrs, CT 06269  
[jichulkim21@gmail.com](mailto:jichulkim21@gmail.com)  
[www.tonaldynamics.com](http://www.tonaldynamics.com)

## EDUCATION

- Ph.D. 2011 Northwestern University (Music Theory and Cognition)  
Dissertation: Tonality in Music Arises from Perceptual Organization  
Adviser: Robert O. Gjerdingen
- M.M. 2002 Seoul National University, South Korea (Music Theory)
- B.M. 2000 Seoul National University, South Korea (Music Theory)
- B.S. 1996 Seoul National University, South Korea (Physics)

## PROFESSIONAL EXPERIENCE

- 2015– Research Scientist  
Circular Logic, LLC, East Hartford, CT
- 2013– Postdoctoral Fellow (adviser: Edward W. Large)  
Department of Psychological Sciences, University of Connecticut
- 2011–2013 Postdoctoral Research Associate (adviser: Edward W. Large)  
Center for Complex Systems and Brain Sciences, Florida Atlantic University
- 2002–2003 Administrative Assistant  
College of Music, Seoul National University

## TEACHING EXPERIENCE

- 2013 Instructor, Florida Atlantic University  
Graduate:  
Signal Processing, Plasticity, and Pattern Formation in Networks of Neural Oscillators  
(co-instructed with Edward Large and Felix Almonte)
- 2007–2008 Instructor, Northwestern University  
Undergraduate:  
Music Theory I, II, & III (for freshman music majors)  
Music Cognition (for non-music majors)  
Graduate:  
Perception of Tonality (guest lecturer)
- 2000–2002 Teaching Assistant, Seoul National University  
Undergraduate:  
Understanding Western Music (for non-music majors)  
History of Western Music 1 & 2 (for sophomore music majors)

## AWARDS & HONORS

- 2014 New Scholar Prize (Best Paper), Cognitively Based Music Informatics Research 2014 Meeting
- 2011 Inductee, Pi Kappa Lambda National Music Honor Society
- 2008–2009 Dissertation Year Fellowship, Northwestern University
- 2003–2007 Graduate School Fellowship, Northwestern University

## PUBLICATIONS

### *Peer-Reviewed Articles*

- Kim, J. C.**, & Large, E. W. (under review). Establishing tonal stability: The dynamics of melodic steps and leaps.
- Lerud, K., **Kim, J. C.**, Almonte, F. V., Carney, L. H., & Large, E. W. (under review). A canonical nonlinear cochlear model.
- Large, E. W., **Kim, J. C.**, Flaig, N. K., Bharucha, J. J., & Krumhansl, C. L. (2016). A neurodynamic account of musical tonality. *Music Perception*, 33, 319–331.
- Kim, J. C.**, Large, E. W. (2015). Signal processing in periodically forced gradient frequency neural networks. *Frontiers in Computational Neuroscience*, 9, 152.
- Lerud, K., Almonte, F. V., **Kim, J. C.**, & Large, E. W. (2014). Mode-locking neurodynamics predict human auditory brainstem responses to musical intervals. *Hearing Research*, 308, 41–49.
- Kim, J. C.** (2006). Temporal structure of tonality: A music psychological perspective. *Umak Yiron Yongu (Music Theory Research)*, 11, 151–174. In Korean.
- Kim, J. C.** (2003). A study of pitch space using auditory perception model and artificial neural networks. *Nangman Umak (Romantic Music)*, 15(2), 21–80. In Korean.

### *Book Chapters*

- Kim, J. C.** (2005). Multidimensional studies of musical timbre. In S. W. Yi (Ed.), *Perception and Cognition of Music I*. Seoul: Eumak Sekye. In Korean.

## MANUSCRIPTS IN PREPARATION

### *Articles*

- Kim, J. C.**, & Large, E. W. (in preparation). Neurodynamic account of consonance and dissonance of pitch intervals (working title).

### *Books*

- Kim, J. C.**, Almonte, F. V., & Large, E. W. (in preparation). *Signal processing, plasticity, and pattern formation in networks of neural oscillators*.

## CONFERENCE PRESENTATIONS

- Kim, J. C.**, & Large, E. W. (2015). Nonlinear resonance and plasticity as a basis for musical consonance. Poster presented at Neuroscience 2015, Chicago, IL.
- Kim, J. C.**, & Large, E. W. (2015). Consonance, harmonicity and neural synchronization. Society for Music Perception and Cognition 2015 meeting, Nashville, TN.
- Lerud, K., **Kim, J. C.**, Almonte, F. V., Carney, L. H., & Large, E. W. (2015). A canonical nonlinear cochlear model. Poster presented at the 38th Annual MidWinter Meeting of Association for Research in Otolaryngology, Baltimore, MD.
- Kim, J. C.** (2014). Pitch dynamics in tonal melody: The role of melodic step and leap in establishing tonal stability. Poster presented at the 18th Annual Meeting of American Musicological Society and the 37th Annual Meeting of Society for Music Theory, Milwaukee, WI.
- Kim, J. C.** (2014). Melodic pitch reduction and chord recognition in an oscillatory neural network model. The 4th Annual Seminar on Cognitively Based Music Informatics Research, Toronto, ON.
- Kim, J. C.**, & Large, E. W. (2014). Pitch dynamics on multiple time scales in a neurodynamic model of melodic perception. The 13th International Conference for Music Perception and Cognition and the 5th Conference of Asia-Pacific Society for the Cognitive Sciences of Music, Seoul, South Korea.
- Kim, J. C.**, & Large, E. W. (2013). Oscillatory neurodynamics explain perceptual differences between melodic steps and leaps. Society for Music Perception and Cognition 2013 meeting, Toronto, ON.

### CONFERENCE PRESENTATIONS (continued)

- Large, E. W., **Kim, J. C.**, Flaig, N. K., Bharucha, J. J., & Krumhansl, C. L. (2013). Neurodynamic constraints on musical languages. Society for Music Perception and Cognition 2013 meeting, Toronto, ON.
- Lerud, K., **Kim, J. C.**, & Large, E. W. (2013). Auditory brainstem EEG, residue pitch, and nonlinear dynamical systems. Society for Music Perception and Cognition 2013 meeting, Toronto, ON.
- Large, E. W., & **Kim, J. C.** (2013). A Universal 'Grammar' for Music. In symposium: Music cognition: Bridging computation and insights from cognitive neuroscience. CogSci 2013: The Annual Meeting of the Cognitive Science Society, Berlin, Germany.
- Kim, J. C.**, & Large, E. W. (2012). Stability of consonant pitch intervals in a nonlinear oscillator network model. Poster presented at Neuroscience 2012, New Orleans, LA.
- Lerud, K., **Kim, J. C.**, & Large, E. W. (2012). A nonlinear dynamical systems approach to pitch perception. Poster presented at Neuroscience 2012, New Orleans, LA.
- Flaig, N. K., Large, E. W., **Kim, J. C.**, & Krumhansl, C. L. (2012). Cultural applications of an auditory neurodynamics model. Poster presented at Neuroscience 2012, New Orleans, LA.
- Kim, J. C.**, Large, E. W., & Flaig, N. K. (2011). Learning musical sequences in a simulated auditory system. Poster presented at Neuroscience 2011, Washington, DC.
- Kim, J. C.** (2011). A critical examination of the theory of tonal hierarchy and arguments for a new theoretical framework for explaining tonality perception. Poster presented at Society for Music Perception and Cognition 2011 meeting, Rochester, NY.
- Kim, J. C.** (2010). Tonal stability as an emergent property in low-level perceptual organization. Poster presented at the 11th International Conference on Music Perception and Cognition, Seattle, WA.
- Kim, J. C.** (2010). Perceptual grouping and tonal stability: A bottom-up factor in tonality perception. 2010 Indiana University Symposium of Research in Music Theory, Bloomington, IN.
- Kim, J. C.** (2009). Tonality perception as auditory object perception. Poster presented at Society for Music Perception and Cognition 2009 meeting, Indianapolis, IN.
- Kim, J. C.** (2007). Temporal structure of tonality perception. Society for Music Perception and Cognition 2007 meeting, Montreal, QC.
- Kim, J. N., & **Kim, J. C.** (2007). Cues for key modulation detection: New scale tones vs. cadence in a new key. Society for Music Perception and Cognition 2007 meeting, Montreal, QC.
- Kim, J. C.**, & Gjerdingen, R. O. (2004). The music-cognition classroom: Using Todd's model for rhythm. The 8th International Conference on Music Perception and Cognition, Evanston, IL.

### JOURNALS REFEREED

Music Perception  
Journal of the Acoustical Society of America  
Journal of Music and Human Behavior (published in South Korea)

### PROFESSIONAL MEMBERSHIPS

Society for Music Perception and Cognition  
Society for Music Theory  
Society for Neuroscience

## REFERENCES

Edward W. Large  
Professor, Department of Psychological Sciences  
University of Connecticut  
406 Babbidge Road, Unit 1020  
Storrs, CT 06269-1020  
(860) 486-2538  
[edward.large@uconn.edu](mailto:edward.large@uconn.edu)

Robert O. Gjerdingen  
Professor, Department of Music Studies  
Northwestern University  
711 Elgin Road  
Evanston, IL 60208-1200  
(847) 491-5721  
[r-gjerdingen@northwestern.edu](mailto:r-gjerdingen@northwestern.edu)

Richard D. Ashley  
Associate Professor, Department of Music Studies  
Northwestern University  
711 Elgin Road  
Evanston, IL 60208-1200  
(847) 491-5720  
[r-ashley@northwestern.edu](mailto:r-ashley@northwestern.edu)

Last updated: 2/5/2016