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## BIOGRAPHICAL SKETCH

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NAME <b>Norbert Kopčo</b>	POSITION TITLE
eRA COMMONS USER NAME (credential, e.g., agency login) <b>NKOPCO</b>	<b>Senior Research Scientist / Adjunct Research Associate Professor</b>

EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Technical University of Košice, Slovakia	Dipl. Ing./MSc	06/1996	Electr. Eng. & Comp. Sci.
Boston University	Ph. D.	02/2003	Cognit&Neural Systems
Boston University	Post Doc	2003-2010	Cognit&Neural Systems
Dartmouth College,	Post Doc	2005-2006	Auditory Neuroscience
Duke University	Post Doc	2006-2010	Behavioral & Cognitive Neuroscience
Charles University, Prague	Habilitation (Assoc. Prof.)	2010	Medical Informatics, 1st Medical Faculty

### A. Personal Statement

I am an expert in psychoacoustics and behavioral neuroscience of auditory system processing. My long-term scientific goal is to help improve our understanding of the neural mechanisms of auditory information processing in the humans. To achieve this goal, I have obtained a unique combination of behavioral experimental and computational skills covering a range of experimental techniques for physiological examination of the brain function in humans and non-human primates. I am also trained in mathematical and computational methods for advanced theoretical modeling of neural systems and for application of the most advanced techniques to the study of the human cognition and brain function. My primary interests have involved psychophysical and computational studies of human audition. In addition, I have also conducted behavioral studies of auditory and cross-modal spatial perception in macaques and, in collaboration with the PI, auditory fMRI studies of audiospatial processing in humans. In this project, I will consult the PI and Investigators in auditory stimulus design development (e.g., 3D simulations and pitch saliency stimulus development) and psychoacoustical measurements and analyses.

### B. Positions and Honors

#### Positions and Employment

1996	Exchange Student Intern, Universität Kaiserslautern and TechMath GmbH, Germany
1996-97	Teaching and Research Assistant, TU Kosice
1998	Teaching Assistant, CNS Dept, Boston University
1999-02	Research Assistant, CNS Dept, Boston University
2003-	Odborný asistent (Lecturer), Dept Cybernetics & AI, TU Kosice
2003-10	Part-time Postdoctoral Researcher, Auditory Neuroscience Lab, CNS Dept, Boston University
2005-06	Part-time Postdoctoral Researcher, Center for Cognitive Neuroscience, Dept. of Psychological and Brain Sciences, Dartmouth College (Jennifer Groh)
2006-09	Part-time Postdoctoral Researcher, Center for Cognitive Neuroscience, Dept. of Psychology and Neuroscience, Duke University (Jennifer Groh)
2008	Visiting Researcher, Auditory Neuroscience Laboratory, Dept. of Medical Sciences, University of Sydney (Simon Carlile, 3 months)
2009	Visiting Researcher, Sensory Learning Laboratory, Dept. of Psychology, University of California, Riverside (Aaron Seitz, 1 month)
2009,10	Lecturer in the BU Cognitive and Neural Systems Dept., teaching Intro to Cognitive and Neural Modeling (one semester intro graduate level class)
2010	Visiting Researcher, CompNet: Center for Computational Neuroscience, Boston University

2011-	Visiting Scientist, Martinos Center for Biomedical Imaging, Massachusetts General Hospital/Harvard Medical School, Charlestown, MA
2012-13	Research Scientist / Associate Professor, Faculty of Science, Šafárik University, Košice
2013-	Senior Research Scientist / Associate Professor, Faculty of Science, Šafárik University, Košice
2013-	Adjunct Research Associate Professor, CompNet: Center for Computational Neuroscience, Boston University

### Honors

1996	Award for Top 1% of Dipl. Ing. graduation class, Faculty of EE&CS, TU Kosice.
1996-97	Open Society Foundation scholarship for PhD students in Slovakia
1997-02	Fulbright Scholarship, Boston University
1997	Presidential University Graduate Fellowship, Boston University
1998	Best Teaching Assistant in the CNS Dept., Boston University
2002	Fellow, NATO Advanced Science Institute "Dynamics of Speech Production and Perception", Il Ciocco, Italy
2004	Fellow, Gordon Research Conference on Sensory neural coding in natural environments, Oxford, UK
2005	Fellow, Summer Institute in Cognitive Neuroscience at Dartmouth College
2007	ICA-ASA Young Scientist Grant, 19th International Congress on Acoustics, Madrid
2007	Jan Hus Foundation's Peter Fedor Fund award for young Slovak scientists who use interdisciplinary methods for the study of the human brain.

### Other Experience and Professional Memberships

Association for Research in Otolaryngology, Acoustical Society of America (2006-2012), International Neural Network Society (2000-02).

### Mentorship

Since 2003 Norbert Kopco supervised more than 30 diploma projects at TU Kosice, and co-supervised three bachelors/masters projects at BU. At TU Kosice, he was a co-supervisor of one currently finished Ph.D. student (Rudolf Andoga), he is currently supervising one student (Beata Tomoriova, expected graduation 2011) and will have one PhD student starting in Oct 2010 (Lubos Hladky).

## **C. Selected publications**

### Journal publications (relevant to this proposal)

1. Shinn-Cunningham BG, SG Santarelli, and N Kopčo (2000) "Tori of confusion: Binaural cues for sources within reach of a listener," J Acoust Soc Am, 107(3), 1627-1636.
2. Shinn-Cunningham BG, J Schickler, N Kopčo, and RY Litovsky (2001) "Spatial Unmasking of Nearby Speech Sources in a Simulated Anechoic Environment", J Acoust Soc Am, 110(2), 1118-1129.
3. Kopčo N and BG Shinn-Cunningham (2003) "Spatial unmasking of nearby pure-tone targets in a simulated anechoic environment," J Acoust Soc Am, 114, 2856-2870.
4. Lane CC, Kopčo N, Delgutte B, Shinn-Cunningham BG and Colburn HS (2004) "A cat's cocktail party: Psychophysical, neurophysiological and computational studies of spatial release from masking." In: Auditory signal processing: Physiology, psychoacoustics, and models. (Pressnitzer, D., de Cheveigné, A, McAdams, S., and Collet, L., eds), pp 327-333, Springer, New York.
5. Kopčo N and GA Carpenter (2004) PointMap: A Real-Time Memory-Based Learning System with On-line and Post-Training Pruning, International Journal of Hybrid Intelligent Systems, 1, 57-71
6. BG Shinn-Cunningham, N Kopčo, and T Martin (2005). Localizing nearby sound sources in a classroom: binaural room impulse responses, Journal of the Acoustical Society of America, 117, 3100-3115.
7. N Kopčo, V Best, and BG Shinn-Cunningham (2007). Sound localization with a preceding distractor, Journal of the Acoustical Society of America, 121, 420-432.
8. Kopco, N and BG Shinn-Cunningham (2008). "Influences of modulation and spatial separation on detection of a masked broadband target," Journal of the Acoustical Society of America, 124, 2236-2250.

9. Best, V, Ozmeral, EJ, Kopco, N, and BG Shinn-Cunningham (2008) Object continuity enhances selective auditory attention. *Proceedings of the National Academy of Sciences of the USA*. 105, 13174-13178.
10. Kopčo N, Lin, I-F. Shinn-Cunningham B, Groh JM (2009) "Reference frame of the ventriloquism aftereffect", *Journal of Neuroscience*. 29(44):13809-13814.
11. N Kopčo, V Best, S Carlile (2010) Speech localization in a multitalker mixture. *Journal of the Acoustical Society of America*, 127, 1450-1457.
12. V Best, BG Shinn-Cunningham, EJ Ozmeral, N Kopčo (2010) Exploring the benefit of auditory spatial continuity. *Journal of the Acoustical Society of America JASA-EL*, 127 (6), EL258-EL264.
13. V Best, S Carlile, N Kopčo, A van Schaik (2011) Localization in speech mixtures by listeners with hearing loss. *Journal of the Acoustical Society of America JASA-EL*, 129 (5), EL210-EL215
14. Kopčo N and BG Shinn-Cunningham (2011) "Effect of stimulus spectrum on distance perception for nearby sources," *J Acoust Soc Am*, 130(3), 1530-1541.
15. Kopčo N, Huang S, Belliveau JW, Raij T, Tengshe C, and Ahveninen J, Neuronal representations of distance in human auditory cortex. *Proc Natl Acad Sci U S A*, 2012. 109: p. 11019-24. PMID: PMC3390865.
16. Ahveninen J, Kopčo N, Jääskeläinen I (2014) Psychophysics and Neuronal Bases of Sound Localization in Humans. *Hearing Research*, 307, 86–97

## **D. Research Support**

### Ongoing Research Support

SPATT - Spatial Attention and Listening in Complex Environments (APVV-0452-12 - The Slovak Research and Development Agency; 90k EUR) 10/2013-3/2017 (PI)

SOFOS (Structural Funds of the European Union, Operating Program Education; 168k EUR) 6/2013-5/2015 (participant)

TECHNICOM (Structural Funds of the European Union, Operating Program Research and Development; 313k EUR) 6/2013-12/2015 (sub-project leader)

CELM: Fostering Excellence in Multiscale Cell Imaging (7th Framework Program of the European Union 316310) 6/2013-5/2016

Science Grant Agency of the Slovak Republic grant 1/0492/12 "Computational models and analytical tools for spatial hearing research" 2012-14 (PI and coordinator)

### Completed Research Support

Learn 2 Hear & See: Perceptual, Contextual, and Cross-modal Learning in Hearing and Vision Marie Curie Research Staff Exchange Scheme, 7th Framework Program of the European Union, Grant # 247543, 5/2010-10/2013, budget 151k EUR

MC #247543 (coordinator: Norbert Kopco) 5/2010-4/2013

7th Framework Program of the European Union, Marie Curie Scheme for Exchange of Research Staff Learn 2 Hear & See: Perceptual, Contextual, and Cross-modal Learning in Hearing and Vision