

## Sazzad Mahmud Nasir

### Contact

The Roxelyn and Richard Pepper Department of Communication Sciences and Disorders  
Northwestern University  
2240 Campus Drive, Room: 3-352  
Evanston, IL 60208, USA  
Phone: 847 491 2450 (Office), 847 915 2231 (Cell)  
E-mail: s-nasir@northwestern.edu  
Lab website: sml.northwestern.edu

### Work

- 2011– Assistant Professor, Northwestern University, USA.
- 2013– Affiliated Faculty, Department of Linguistics, Northwestern University, USA.
- 2011– Member, Cognitive Science Program, Northwestern University, USA.
- 2011– Member, Interdepartmental Program in Neuroscience, Northwestern University, USA.
- 2005–10 Research Associate, Department of Psychology, McGill University, Canada.
- 2002–04 Sloan-Swartz postdoctoral fellow, Keck Center for Integrative Neuroscience, University of California, San Francisco, USA.
- 1999–01 Lecturer and postdoctoral fellow, Department of Theoretical Physics, University of Uppsala, Sweden.
- 1998–99 Postdoctoral fellow, Mittag-Leffler Institute, the Royal Swedish Academy of Sciences, Stockholm, Sweden.

### Education

- 1998 Ph.D. in Theoretical Particle Physics, Department of Applied Mathematics and Theoretical Physics (DAMTP), University of Cambridge, UK. Supervisor: Professor N. S. Manton FRS.
- 1994 Certificate of Advanced study in Mathematics (Part III of the Mathematical Tripos), University of Cambridge, UK. Distinction.
- 1992 Bachelor of Science (Honors) in Physics, University of Dhaka, Bangladesh. First Class, ranked first.

### Award

- 2006 Fellowship at McGill Centre for Language, Mind and Brain.
- 2001 Sloan-Swartz fellowship at the University of California San Francisco.
- 1998 Won, but declined, 1851 Postdoctoral Research Fellowship at the Mathematical Institute, University of Oxford.
- 1994 Special Cambridge Commonwealth Trust Scholarship to pursue Ph.D. at Cambridge University, UK.
- 1994 Wolfson College Jennings Prize for distinction in Part III of the Mathematical Tripos.
- 1993 Cambridge ODA Scholarship to pursue Part III at Cambridge University, UK.
- 1992 Raja Kali Narayan Prize and the University Grant Commissions Scholarship for achieving the highest marks in the B.Sc. at Dhaka University, Bangladesh.

### Grant

#### Pending

- 2016 *Orosensory contributions to dysphagia: Examining the link between perception of bolus taste, volume, and temperature with pharyngeal swallow events.* National Institute of Health, R01. Nasir and Pauloski (MPI).

## Completed

2015 *Strategies for the treatment of dysphagia in patients with Alzheimer's disease*. National Institute of Health, R21. Logemann (PI) (Role: Co-Investigator).

## **Teaching**

*Introduction to Hearing and Speech Science* (undergraduate level) at Northwestern University.

*Brain and Cognition* (undergraduate level) at Northwestern University.

*Functional Neuroanatomy* (graduate level) at Northwestern University.

*Acoustic Phonetics* (graduate/undergraduate level) at Northwestern University.

*Statistics* (undergraduate level) at McGill University.

*Computational Neuroscience* (graduate level) at McGill University.

*Physics* (undergraduate level) at Uppsala University.

Supervised undergraduate students at King's College, Cambridge University.

Conducted Part III (graduate level) tutorials at various levels.

Taught mathematics and statistics at A-level (grade 12) colleges in the UK.

## **Publication**

### Articles in preparation

29. R. Sengupta and S. M. Nasir, *A computational model of outcome prediction in speech motor adaptation*.

28. R. Sengupta and S. M. Nasir, *The role of neural oscillations in perceptual decision*.

27. T. Loucks, A. Tendra, S. M. Nasir and J. Yaruss, *The FLUSTER model: A Framework for organizing and advancing knowledge of stuttering*.

26. R. Behroozmand, R. Sengupta, N. Ibrahim, C. Larson and S. M. Nasir, *Neural phase coherence reflects enhanced sensorimotor integration for vocal motor control in musicians with absolute pitch*.

25. S. M. Nasir and M. Grigos, *Greater audio-motor variability is associated with childhood apraxia of speech*.

### Articles under review

24. R. Sengupta, S. Shah, K. Gore, T. Loucks and S. M. Nasir, *Anomaly in Neural Phase Coherence Accompanies Reduced Sensorimotor Integration in Adults Who Stutter* (revision at *Neuropsychologia*).

23. R. Sengupta, S. Shah, T. Loucks, K. Pelczarski, J. Yaruss, K. Gore and S. M. Nasir, *Cortical Dynamics of Disfluency in Adults Who Stutter*.

22. D. Lee, R. Sengupta and S. M. Nasir, *Categorical decision in noise*.

21. C. Vaughn and S. M. Nasir, *Sensorimotor phenotypes and speech motor adaptation*.

### Articles in Neuroscience

20. R. Sengupta and S. M. Nasir, *The predictive roles of neural oscillations in speech motor adaptability*, *Journal of Neurophysiology* **115** (2016) 2519.

19. S. M. Nasir and B. Pauloski, *Orosensory contributions to dysphagia: A link between perception of sour taste and pharyngeal delay time*, *Physiological Reports* **4**(2016) e12752. doi: 10.14814/phy2.12752.

18. R. Sengupta and S. M. Nasir, *Redistribution of neural phase coherence reflects establishment of feedforward map in speech motor adaptation*, *Journal of Neurophysiology* **113** (2015) 2471.

17. C. Vaughn and S. M. Nasir, *Precise feedback control underlies sensorimotor learning in speech*, *Journal of Neurophysiology* **113** (2015) 950.

16. S. M. Nasir, M. Darainy and D. J. Ostry, *Sensorimotor adaptation changes the neural coding of somatosensory stimuli*, *Journal of Neurophysiology* **109** (2013) 2077.

15. D. R. Lametti, S. M. Nasir and D. J. Ostry, *Sensory preference in speech production revealed by simultaneous alteration of auditory and somatosensory feedback*, *Journal of Neuroscience* **32** (2012) 9351.

14. A. G. Mattar, S. M. Nasir, M. Darainy and D. J. Ostry, *Sensory change following motor learning*, *Progress in Brain Research* **191** (2011) 31.

13. S. M. Nasir and D. J. Ostry, *Auditory plasticity and speech motor learning*, Proceedings of the National Academy of Sciences **106** (2009) 20470.
12. S. M. Nasir and D. J. Ostry, *Speech motor learning in profoundly deaf adults*, Nature Neuroscience **11** (2008) 1217.
11. S. M. Nasir and D. J. Ostry, *Somatosensory precision in speech production*, Current Biology **16** (2006) 1918.

Articles in Physics (Author names appear alphabetically)

10. S. M. Nasir and A. Niemi, *Effective string theories and field theories in four dimensions*, Modern Physics Letters A **17** (2002) 1445.
9. M. Lubcke, S. M. Nasir, A. Niemi and K. Torokoff, *Twisted vortices in a gauge field theory*, Physics Letters B **534** (2002) 195.
8. S. M. Nasir, *Bogomol'nyi Vortices from Seiberg-Witten Monopoles*, Internat. J. Modern Phys. A **14** (1999) 3905.
7. N. S. Manton and S. M. Nasir, *Volume of Vortex Moduli Spaces*, Comm. Math. Phys. **199** (1999) 591.
6. N. S. Manton and S. M. Nasir, *Conservation Laws in a First Order Dynamical System of Vortices*, Nonlinearity **12** (1999) 851.
5. S. M. Nasir, *Study of Bogomol'nyi Vortices on a Disc*, Nonlinearity **11** (1998) 445.
4. S. M. Nasir, *Vortices and Flat Connections*, Physics Letters B **419** (1998) 253.

Book chapter

3. S. M. Nasir and D. J. Ostry, *Control of movement precision in speech production* in *Speech Motor Control: New developments in basic and applied research*, edited by B. Maassen and Pascal H. van Lieshout (Publisher: Oxford University Press, 2010).

Conference proceeding

2. S. M. Nasir and D. J. Ostry, *Speech motor adaptation without auditory feedback*, appeared in *8<sup>th</sup> International Seminar on Speech Production, Strasbourg, 2008*, edited by R. Sock, S. Fuchs and Y. Laprie (Publisher: Inria).
1. S. M. Nasir and D. J. Ostry, *Maintaining somatosensory precision in speech*, appeared in *7<sup>th</sup> International Seminar on Speech Production, Sao Paolo, 2006*, edited by D. Demolin, R. Laboissiere and C. Yehia (Publisher: Cefala).

**Invited Conference Presentation**

- Illinois Speech Day, Chicago, 2015.
- Midwest Speech and Language Day, Urbana-Champaign, 2014.
- BIT's 5th Annual Congress of NeuroTalk, Nanjing, China, 2014.
- Illinois Speech Day, Chicago, 2012.
- Speech Production Workshop, University of Illinois at Urbana-Champaign, 2011.
- Madonna Speech Motor Control conference, Savannah, 2010.
- Madonna Speech Motor Control conference, Monterey, 2008.
- Acoustical Society of America meeting, New Orleans, 2007.
- SPIT meeting, Kingston, 2006.
- Madonna Speech Motor Control conference, Austin, 2006.

**University and Institute Talk**

- Northwestern University, Language and Cognition Seminar.
- Swedish Science Academy, Mittag-Leffler Institute.
- Umea University, Department of Theoretical Physics.
- Cambridge University, Department of Applied Mathematics and Theoretical Physics.

Oxford University, Department of Theoretical Physics.

### **Organized Seminar and Conference**

*The Perceiving Mind in Action*, 2012 Language and Cognition Seminar Series, Northwestern University.

### **Media Coverage**

#### Scientific Commentary

J. F. Houde, *There's more to speech perception than meets the ear*, PNAS 106 (2009) 20139.

A. A. Ghazanfar and H. K. Tureson, *Speech production: how does a word feel?* Current Biology 18 (2008) R1142.

K. G. Munhall, *Speech production: the force of your words*, Current Biology 16 (2006) R922.

#### Mass media

Yale daily News, 2009.

McGill Reporter, 2009.

Learning to talk changes how we hear speech, CBC, 2009.

Deaf people feel their way to speech, New Scientist, 2008.

Science Now Daily News, 2008.

Der Spiegel Online, 2008.

China Daily, 2008.

### **Conference Presentation**

T. Loucks, A. Tendra and S. M. Nasir, *A framework for organizing & advancing knowledge of stuttering: The FLUSTER model*, ASHA Convention, Denver, 2015.

B. Pauloski and S. M. Nasir, *Orosensory contributions to dysphagia*, ASHA Convention, Denver, 2015.

R. Sengupta and S. M. Nasir, *Speech motor learning and patterns of neural oscillations*, Society for Neuroscience Meeting, San Diego, 2013.

R. Sengupta and S. M. Nasir, *Neural synchrony in speech motor learning*, Neural Control of Movement Meeting, Puerto Rico, 2013.

C. St-Claire and S. M. Nasir, *Perceptual learning in noise*, Society for Neuroscience Meeting, New Orleans, 2012.

S. M. Nasir, M. Darainy and D. J. Ostry, *Neural correlates of sensory plasticity following motor learning*, Neural Control of Movement Meeting, Venice, 2012.

D. Lametti, S. M. Nasir and D. J. Ostry, *Sensory preference in speech motor learning*, Neural Control of Movement Meeting, Venice, 2012.

D. Lametti, S. M. Nasir and D. J. Ostry, *Some people prefer the feel of their speech to the sound*, Madonna Speech Motor Control Conference, Santa Rosa, 2012.

D. Lametti, S. M. Nasir and D. J. Ostry, *For some people, somatosensory feedback is more important than auditory feedback in speech motor learning*. Society for Neuroscience Meeting, Washington DC, 2011.

D. Lametti, S. M. Nasir and D. J. Ostry, *Interaction between sensory goals in speech*, Society for Neuroscience Meeting, Chicago, 2009.

S. M. Nasir and D. J. Ostry, *Speech motor learning modifies speech perception*, International Multisensory Research Forum, New York, 2009.

S. M. Nasir and D. J. Ostry, *Auditory Perceptual Changes Following Speech Motor Learning*, Neural Control of Movement Meeting, Hawaii, 2009.

S. M. Nasir and D. J. Ostry, *Effects of speech motor learning on speech perception*, Society for Neuroscience Meeting, Washington DC, 2008.

- S. M. Nasir and D. J. Ostry, *Speech motor learning in post-lingually deaf adults*, Society for Neuroscience Meeting, San Diego, 2007.
- S. M. Nasir and D. J. Ostry, *Speech production in patients with cochlear implants*, Neural Control of Movement Meeting, Seville, 2007.
- S. M. Nasir and D. J. Ostry, *A study of the somatosensory precision requirements of speech production*, Society for Neuroscience Meeting, Atlanta, 2006.
- S. M. Nasir and D. J. Ostry, *Role of impedance control to achieve precision requirements in speech production*, International Conference on Speech Motor Control, Nijmegen, 2006.
- S. M. Nasir and D. J. Ostry, *Impedance control is used to achieve the somatosensory precision requirements of speech production*, Neural Control of Movement Meeting, Florida, 2006.
- S. M. Nasir, J. T. Sakata and M. S. Brainard, *Sequence dependent coding of syllables in HVC of male Bengalese finches*, Society for Neuroscience Meeting, San Diego, 2004.
- K. Bouchard, S. M. Nasir and M. S. Brainard, *Statistics of syllable patterns in produced songs predict auditory responses in HVC of Bengalese finches*, Society for Neuroscience Meeting, San Diego, 2004.

### **Professional Membership**

- Member, Society for Neuroscience.
- Member, American Physiological Society.
- Member, Society for Neural Control of Movement.
- Member, Cambridge Philosophical Society.
- Member, Cambridge Commonwealth Society.

### **Adhoc Journal Reviewer**

- Journal of Neuroscience
- Neuropsychologia
- Neuroscience Letters
- Brain and Language
- Journal of the Acoustical Society of America
- Experimental Brain Research
- Journal of Motor Behavior
- Cognition
- Journal of Speech, Language and Hearing Research
- Scientific Reports
- PLOS One
- Folia Phoniatica et Logopaedica
- Physical Review D
- American Mathematical Society

### **Administrative and Professional Service**

- 2014– *Council on Sustainability*, Northwestern University.
- 2013– *Norris Center Advisory Board*, Northwestern University.
- 2013–2014 Judge, The Undergraduate Awards, Dublin, Ireland.
- 2013–2014 *Committee Reviewing Learning Management System*, Northwestern University Educational Technology Advisory Council.
- 2012– *Special Programs Committee*, Communication Sciences and Disorders, Northwestern University.
- 2011– *Graduate Recruitment Committee*, Communication Sciences and Disorders, Northwestern University.