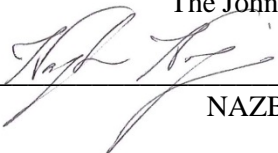


CURRICULUM VITAE

The Johns Hopkins University School of Medicine

(Signature)

(Typed Name)



NAZBANOU NOZARI

13/4/2018

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2014-present Assistant Professor, Department of Neurology, School of Medicine, Johns Hopkins University
2014-present Secondary appointment, Department of Cognitive Science, Krieger School of Arts and Sciences, Johns Hopkins University

Personal Data

Business Address: 1629 Thames Street, Suite 350
Baltimore, MD 21231
Tel: 443-287-1712
Fax: 410-955-0188
E-mail: nozari@jhu.edu

Education and Training

1997-2005. M.D. Tehran University of Medical Sciences, Tehran, Iran (Includes 1 year of clinical internship).
2006-2009. M.A. in Cognitive Psychology, University of Illinois at Urbana-Champaign, Champaign-IL.
Advisor: Gary Dell
2009-2011. Ph.D. in Cognitive Psychology, University of Illinois at Urbana-Champaign, Champaign-IL.
Advisor: Gary Dell
2011-2012. Post-doctoral Fellow in Cognitive Neuropsychology, Moss Rehabilitation Research Institute, Elkins Park, PA. Advisor: Myrna Schwartz
2011-2013. Postdoctoral Fellow in Cognitive Neuroscience, University of Pennsylvania, Philadelphia, PA.
Advisor: Sharon Thompson-Schill

Professional Experience

2004-2005. Medical Intern (rotation in several hospitals).
2005-2006. Research Assistant, Roozbeh Psychiatric hospital, Tehran University of Medical Sciences.
2005-2006. Collaborative Research Assistant, Kings College London, executing the 10/66 international dementia screening project in Iran.
2006-2010. Research Assistant, University of Illinois at Urbana-Champaign.
2010-2011. Teaching Assistant, University of Illinois at Urbana-Champaign.
2011-2013. Postdoctoral Researcher and undergraduate mentor at the University of Pennsylvania.
2014-present. Assistant professor, Department of Neurology, School of Medicine, Johns Hopkins University.
2014-present. Secondary appointment at the Department of Cognitive Science, Krieger School of Arts and Sciences, Johns Hopkins University.

PUBLICATIONS:

Peer-reviewed Original Research

(underlined names mark mentees)

1. **Nozari, N.**, Ferri, C.P., Farin, F., Noroozian, M., Salehi, M., Seyedian, M., & Prince, M. (2009). Validation of the 10/66 Dementia Research Group's 10/66 Dementia diagnosis in Iran. *International Psychogeriatrics*, 21(3), 604-605.
2. **Nozari, N.**, & Dell, G.S., (2009). More on lexical bias: how efficient can a "lexical editor" be? *Journal of Memory and Language*, 60, 291-307.

3. **Nozari, N.**, Kittredge, A.K., Dell, G.S., Schwartz, M.F. (2010). Naming and repetition in aphasia: Steps, routes, and frequency effects. *Journal of memory and Language*, 63, 541-559.
4. **Nozari, N.**, Dell, G.S., Schwartz, M.F. (2011). Is comprehension the basis for error detection? A conflict-based theory of error detection in speech production. *Cognitive Psychology*, 63(1), 1-33.
5. **Nozari, N.** & Dell, G.S. (2011). Selective attention and speech errors: feature migration in time. In L. Carlson, C. Hölscher, & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society* (pp. 1370-1375). Austin, TX: Cognitive Science Society.
6. **Nozari, N.**, & Dell, G. S. (2012). Feature migration in time: Reflection of selective attention on speech errors. *Journal of Experimental Psychology-Learning Memory and Cognition*, 38(4), 1084-1090.
7. Budd, M. J., Hanley, & J.R., **Nozari, N.** (2012). Evidence for a non-lexical influence on children's auditory repetition of familiar words. *Journal of Psycholinguistic research*, 41(4), 253-266.
8. **Nozari, N.**, & Thompson-Schill, S.L. (2013). More attention when speaking: does it help or does it hurt? Evidence from tDCS. *Neuropsychologia*, 51(13), 2770-2780.
9. **Nozari, N.**, & Dell, G.S. (2013). How damaged brains repeat words: A computational approach. *Brain & Language*. 126(3), 327-337.
10. Dell, G. S., Schwartz, M. F., **Nozari, N.***, Faseyitan, O., & Branch Coslett, H. (2013). Voxel-based lesion-parameter mapping: Identifying the neural correlates of a computational model of word production. *Cognition*, 128(3), 380-396.
* Analysis of the behavioral data, involved in the conceptualization of the experiment, analysis of the lesion data, and write up of the study.
11. **Nozari, N.**, Arnold, J. E., & Thompson-Schill, S. L. (2014). The Effects of Anodal Stimulation of the Left Prefrontal Cortex on Sentence Production. *Brain stimulation*, 7(6), 784-792.
12. **Nozari, N.**, Woodard, K., & Thompson-Schill, S. L. (2014). Consequences of cathodal stimulation for behavior: when does it help and when does it hurt performance? *PLoS one*, 9(1), 1-15.
13. Breining, B., **Nozari, N.***, & Rapp, B. (2015). Does segmental overlap help or hurt? Evidence from blocked cyclic naming in spoken and written production. *Psychonomic Bulletin & Review*, 23, 500-506.
*Joint co-mentor with B. Rapp.
14. **Nozari, N.**, Dell, G.S., Schneck, K., & Gordon, B. (2015). Implementation of selective attention in sequential word production. In D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, T. Matlock, C. D. Jennings, & P. P. Maglio (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society* (pp. 1745-1750). Austin, TX: Cognitive Science Society.
15. Akhavan, N., **Nozari, N.***, & Goksun, T. (2015). Motion event expressions in language and gesture: Evidence from Persian. In D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, T. Matlock, C. D. Jennings, & P. P. Maglio (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society* (pp. 60-65). Austin, TX: Cognitive Science Society.
*Joint co-mentor with T. Goksun.
16. **Nozari, N.**, Goksun, T., Thompson-Schill, S.L., & Chatterjee, A. (2015). Phonological similarity affects production of gestures, even in the absence of speech. *Frontiers in Psychology*, 6 (1347).
doi: 10.3389/fpsyg.2015.01347

17. Hanley, R.J., Cortis, C., Budd, M.J., & **Nozari, N.** (2016). Did I say dog or cat? A study of semantic error detection and correction in children. *Journal of Experimental Child Psychology*, *142*, 36-47.
18. **Nozari, N.**, Freund, M., Breining, B., Rapp, B., & Gordon, B. (2016). Cognitive control during selection and repair in language production. *Language Cognition & Neuroscience*, *31*:7, 886-903. doi: 10.1080/23273798.2016.1157194
19. **Nozari, N.**, & Mirman, D. (2016). Using determiners as contextual cues in sentence comprehension: A comparison between younger and older adults. In A. Papafragou, D. Grodner, D. Mirman, & J.C. Trueswell (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 1193-1198). Austin, TX: Cognitive Science Society.
20. Akhavan, N., Goksun, T., & **Nozari, N.** (2016). Disfluency production in speech and gesture. In A. Papafragou, D. Grodner, D. Mirman, & J.C. Trueswell (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 716-721). Austin, TX: Cognitive Science Society.
21. Freund, M., Gordon, B., & **Nozari, N.** (2016). Conflict-based regulation of control in language production. In A. Papafragou, D. Grodner, D. Mirman, & J.C. Trueswell (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 1625-1630). Austin, TX: Cognitive Science Society.
22. **Nozari, N.**, Trueswell, J., & Thompson-Schill, S.L. (2016). The interplay of local attraction, context and domain-general cognitive control in activation and suppression of semantic distractors during sentence comprehension. *Psychonomic Bulletin & Review*. doi: 10.3758/s13423-016-1068-8
23. **Nozari, N.**, Mirman, D., & Thompson-Schill, S.L. (2016). The role of the left inferior prefrontal gyrus in blocking distraction in sentence comprehension. *Brain & Language*, *157*, 1-13. doi: 10.1016/j.bandl.2016.04.006
24. Akhavan, N., **Nozari, N.***, & Goksun, T. (2017). Expression of motion events in Farsi. *Language, Cognition and Neuroscience*, *32*(6), 792-804. doi: 10.1080/23273798.2016.1276607
*Joint co-mentor with T. Goksun.
25. Arnold, J. E., & **Nozari, N.** (2017). The effects of utterance timing and stimulation of left prefrontal cortex on the production of referential expressions. *Cognition*, *160*, 127-144. doi: 10.1016/j.cognition.2016.12.008
26. Trude, A., & **Nozari, N.** (2017). Inhibitory Control Supports Referential Context Use in Language Production and Comprehension. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society (pp. 1218-1223). Austin, TX: Cognitive Science Society.
27. **Nozari, N.**, & Faroqi-Shah, Y. (2017). Investigating the origin of nonfluency in aphasia: A path modeling approach to neuropsychology. *Cortex*, *95*, 119-135. doi: 10.1016/j.cortex.2017.08.003
28. Akhavan, N., Goksun, T. & **Nozari, N.** (2017). Integrity and function of gestures in aphasia. *Aphasiology*. doi: 10.1080/02687038.2017.1396573
29. Freund, M. & **Nozari N.** (2018). Is adaptive control in language production mediated by learning? *Cognition*. *176*, 107-130. doi:10.1016/j.cognition.2018.03.009
30. Pinet, S. & **Nozari, N.** (2018). "Twisting fingers": the case for interactivity in typed language production. *Psychonomic Bulletin & Review*. doi: 10.3758/s13423-018-1452
31. Hepner, C. & **Nozari, N.** (in press). A resource model of phonological working memory. In C. Kalish, M. Rau, J. Zhu, and T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

32. **Hepner, C., Pinet, S. & Nozari, N.** (in press). An enhanced model of gemination in spelling: Evidence from a large corpus of typing errors. In C. Kalish, M. Rau, J. Zhu, and T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
33. **Nozari, N. & Omaki, A.** (in press). Syntactic production is not independent of inhibitory control: Evidence from agreement attraction errors. In C. Kalish, M. Rau, J. Zhu, and T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Review Articles

1. Behzadi, A., **Nozari, N.**, Ekhtiari, H. (2006). Reasoning, Induction and Language; Literature Review and the Practical Methods of Assessment. *Iranian Journal of Cognitive Science*, 4, 24-29. [article in Persian]
2. **Nozari, N.** & Novick, J. (2017). Monitoring and control in language production. *Current Directions in Psychological Science*, 26(5), 403–410. doi: 10.1177/09637214177024

Book Chapters, Monographs

1. Dell, G. S., **Nozari, N.**, & Oppenheim, G. M. (2014). Lexical access: Behavioral and computational considerations. In V. Ferreira, M. Goldrick, & M. Miozzo (Eds.), *The Oxford Handbook of Language Production* (pp. 88-104). Oxford: Oxford University Press.
2. **Nozari, N.**, & Thompson-Schill, S. L. (2015). Left ventrolateral prefrontal cortex in processing of words and sentences. In G. Hickok & S. L. Small (Eds.), *Neurobiology of Language* (pp. 569–584). San Diego, CA: Academic Press.
3. **Nozari, N.** (to appear). Monitoring and control in language production. In K. Federmeier, & D. Watson (Eds.), *Psychology of Learning and Motivation*, 68. Cambridge, UK: Elsevier.

Short Conference proceedings

1. **Nozari, N.**, & Schwartz, M. (2012). Fluency of Speech Depends on Executive Abilities: Evidence for Two Levels of Conflict in Speech Production. *Procedia-Social and Behavioral Sciences*, 61, 183-184.
2. **Nozari, N.**, Dell, G., & Schwartz, M. (2012). Who Are the Lexical-routers? An Investigation into the Nature of Word Repetition in Aphasia. *Procedia - Social and Behavioral Sciences*, 61, 104-105.
3. **Nozari, N.**, Woodard, K., & Thompson-Schill, S. (2013). Cathodal Transcranial Direct Current Stimulation: Facilitatory, inhibitory, or both? *Journal of cognitive neuroscience* , (pp. 174-174). MIT Press, Cambridge, MA.
4. **Nozari, N.** (2014). Using Transcranial Direct Current Stimulation (tDCS) to study and treat aphasia. *Frontiers in Psychology*. Conference Abstract: 52nd Annual Academy of Aphasia Meeting Annual Meeting. doi:10.3389/conf.fpsyg.2014.64.00008.
5. **Nozari, N.** (2014). Using Transcranial tDCS to test cognitive hypotheses. *Frontiers in Psychology*. Conference Abstract: 52nd Annual Academy of Aphasia Meeting Annual Meeting. doi:10.3389/conf.fpsyg.2014.64.00009
6. **Nozari, N.**, Mirman, D., Thompson-Schill, S.L. (2014). The role of the left ventrolateral prefrontal cortex in online sentence processing. *Frontiers in Psychology*. Conference Abstract: 52nd Annual Academy of Aphasia Meeting Annual Meeting. doi: 10.3389/conf.fpsyg.2014.64.00012
7. Middleton, E., Schwartz, M.F., Graziano, K., Brown, D., & **Nozari, N.** (2014) A Paradigm for Investigating Executive Control Mechanisms in Word Retrieval in Language-Impaired and Neurotypical Speakers.

Frontiers in Psychology. Conference Abstract: 52nd Annual Academy of Aphasia Meeting Annual Meeting. doi:10.3389/conf.fpsyg.2014.64.00066

8. Schwartz, M.F., Middleton, E., **Nozari, N.**, Brecher, A., Gagliardi, M., Garvey, K. (2014). Learning from your mistakes: The functional value of spontaneous error monitoring in aphasia. *Frontiers in Psychology*. Conference Abstract: 52nd Annual Academy of Aphasia Meeting Annual Meeting. doi:10.3389/conf.fpsyg.2014.64.00070
9. **Nozari, N.** & Faroqi-Shah, Y. (2016). How should we approach the study of fluency? A corpus analysis. *Frontiers in Psychology*. Conference Abstract: 54th Annual Academy of Aphasia Meeting. doi: 10.3389/conf.fpsyg.2016.68.00038
10. Akhavan, N., Goksun, T., Kazemi, R. & **Nozari, N.** (2016). Integrity and function of gestures in aphasia. *Frontiers in Psychology*. Conference Abstract: 54th Annual Academy of Aphasia Meeting. doi: 10.3389/conf.fpsyg.2016.68.00039
11. Trude, A., & **Nozari, N.** (2016). Cognitive costs of perspective-taking in an individual with nonfluent aphasia. *Frontiers in Psychology*. Conference Abstract: 54th Annual Academy of Aphasia Meeting. doi: 10.3389/conf.fpsyg.2016.68.00032
12. Hepner, C. & **Nozari, N.** (in press). A resource model of phonological working memory. 20th Conference of the. European Society for Cognitive Psychology (ESCoP). *Frontiers in Psychology*.
13. Hanley, R., & **Nozari, N.** (in press). Is working memory involved in monitoring self and other people's speech? 20th Conference of the. European Society for Cognitive Psychology (ESCoP). *Frontiers in Psychology*.
14. **Nozari, N.** (in press). Production-based monitoring and control. Monitoring symposium in the 20th European Society for Cognitive Psychology (ESCoP). *Frontiers in Psychology*.
15. Freund, M., Rapp, B., & **Nozari, N.** (forthcoming). Does semantic relatedness help or hurt re-learning of object names in aphasia? *Frontiers in Psychology*. Conference Abstract: 55th Annual Academy of Aphasia Meeting.
16. **Nozari, N.** (forthcoming). The dual origin of semantic errors in access deficits: activation deficit vs. inhibition deficit. *Frontiers in Psychology*. Conference Abstract: 55th Annual Academy of Aphasia Meeting.
17. Hepner, C. & **Nozari, N.** (forthcoming). A resource model of phonological working memory in language production and perception. *Frontiers in Psychology*. Conference Abstract: 55th Annual Academy of Aphasia Meeting.

Media Releases or Interviews

1. "How does the brain process speech errors? Biological alarms when speaking" (2012, June, 16). Published interview in Mehr News Agency, 12:44, 1627651. Article in Persian.
2. Featured in the American Psychological Association's magazine: Monitor on Psychology. Print version: March 2018, Vol 49, No. 3, p. 60. Online version: <http://www.apa.org/monitor/2018/03/secrets.aspx>

FUNDING

EXTRAMURAL Funding

Current

03/01/2016 – 03/01/2019.

Title: Contributions of executive control abilities to perspective-taking in aphasia.

Identification Number: 1F32DC015390-01.

Sponsor: NIH/NIDCD

Total Direct Cost: \$174,090.

PI: Alison Trude, PhD.

Role: Faculty mentor

09/15/2016 – 09/15/2019.

Title: Executive control in sentence production.

Identification Number: 001910777.

Sponsor: National Science Foundation (NSF).

Total Direct Cost: \$357,600.

Role: PI

INTRAMURAL Funding

Current

07/01/2016 – 07/01/2018

Title: Investigation of the effect of contextual semantic similarity on word learning.

Identification Number: N/A.

Sponsor: Science of Learning Initiative, Johns Hopkins University.

Total Direct Cost: \$146,793.

Role: PI

Completed

09/01/2013 – 09/01/2019.

Title: Task Switching: a window to executive deficits in aphasia.

Identification Number: N/A.

Sponsor: State of PA Health Research Formula Grant.

Total Direct Cost: \$52,000.

Principal Investigator: Myrna Schwartz, PhD.

Role: Co-PI

07/01/2014 – 07/01/2016.

Title: Deep Multi-view Learning for Acoustic-to-Articulatory-Inversion

Identification Number: N/A.

Sponsor: Science of Learning Initiative, Johns Hopkins University.

Total Direct Cost: \$110,000. Principal Investigator: Raman Arora, PhD.

Role: Co-PI

EDUCATIONAL ACTIVITIES

Educational Focus

I am passionate about teaching best practices in cognitive and cognitive neuroscience research to undergraduate, graduate and post-graduate young scholars. My special emphasis is on interdisciplinary research, bridging together my two fields of expertise (language processing and executive control), as well as translational research (applying cognitive principles to educational, as well as, treatment settings). The new course I built from the ground up and taught at Johns Hopkins is a good representative of this initiative.

Teaching

Classroom instruction

- Fall 2009 Psycholinguistics (mid-level undergraduate)
Department of Psychology, University of Illinois at Urbana-Champaign
Invited guest lecturer
- Spring 2010 Experimental Design in Cognitive Psychology (upper-level undergraduate)
Department of Psychology, University of Illinois at Urbana-Champaign
Graduate instructor (lab section)
- Spring 2016 Cognitive and Neural Basis of Executive control* (upper-level undergraduate/graduate)
Department of Cognitive Science, Krieger School of Arts & Sciences, Johns Hopkins University
Assistant professor
** New course developed and taught for the first time at Johns Hopkins. New in both materials, and style: professional development for upper-level undergraduate students.*
- Fall 2017 An introduction to EEG recording and brain stimulation* (undergraduate level)
Department of Cognitive Science, Krieger School of Arts & Sciences, Johns Hopkins University
Assistant professor; co-instructor and supervisor of the instructor Dr. Svetlana Pinet.
** New course developed specifically for orientation of undergraduate students to methods of brain stimulation and recording. Chosen through the competitive proposal review process for offering a SOUL (Special Opportunities for Undergraduate Learning) course at Johns Hopkins University.*

Workshops /seminars

- November 2014 International workshop organizer and speaker (along with three other speakers). Title: Using Transcranial Direct Current Stimulation (tDCS) to study and treat aphasia: Why's, How's, Do's and Don'ts. Venue: 52th Annual Meeting of the Academy of Aphasia, Miami, FL.
- April 2016 Keynote speaker in the first undergraduate conference in cognitive science "From monkeys to infants to humans", organized by Johns Hopkins, Yale, and Duke undergraduates.
- September 2017 Invited speaker to the "Monitoring in language production" workshop organized by Robert Hartsuiker and Matthias Lind in 20th Conference of the European Society for Cognitive Psychology (ESCoP), Potsdam, Germany.

Mentoring

Pre-doctoral Advisees /Mentees

**Note that the medical school at Johns Hopkins does not have a PhD program in cognitive psychology or cognitive neuroscience. The majority of our trainees are post-BA research assistants and post-doctoral fellows. Occasionally, there are opportunities for joint mentoring of MA or PhD students admitted through other programs.*

Full time trainees, interns, or students with independent research projects

Kristina Woodard, BA candidate (Psychology, University of Pennsylvania), 2012-2013. Worked with me for a year when I was a mentor in the Penn Undergraduate Research Mentorship (PURM) program. Wrote her Honors thesis with me, presented a poster with me at the 20th Annual Meeting of the Cognitive Neuroscience Society (CNS) in 2013, co-authored the article Nozari, Woodard, & Thompson-Schill (2014), and received the Morris Viteles Award for Excellence in Undergraduate Research in Psychology for her work with me. She was later accepted in to the clinical psychology PhD program at the University of Wisconsin.

Sweta Joshi, BA candidate (Psychology, McGill University), summer 2014. Completed a summer internship with me and learned audio and video coding of speech and gestures. She helped with coding the data for Nozari, Goksun, Thompson-Schill & Chatterjee (2015), and appears in the acknowledgment section of that paper.

Kyle Schneck, MA (Linguistics and cognitive science; University of Delaware), 2014-2015. Kyle worked with me part-time for a year. He learned speech error coding, and is a co-author in Nozari, Dell, Schenck, & Gordon (2015). In 2016, Kyle accepted a position as the science writer for NASA.

Michael Freund, BA (Psychology, University of Wisconsin), March 2014-2017. As my lab manager, Mike has been involved in several projects, and has co-authored Nozari, Freund, Breining, Rapp & Gordon (2016) with me. I have also mentored him on Freund, Gordon, & Nozari (2016), as well as Freund & Nozari (under review). In addition, he has 3 conference presentations with me. In fall 2017, he started his PhD training in cognitive neuroscience at Washington University in St. Louis in Todd Braver's lab.

Kathleen Kelly, BA (Psychology & Neuroscience, Rice University; post-BA pre-med student at Johns Hopkins University), 2015-2016. Kathleen completed two semesters of Medical Tutorial credit in my lab, and learned collection of eye-tracking data. She was accepted to Georgetown Medical School in 2016.

Nicholas McCloskey, BA candidate (Psychology, Temple University), 2015-2017. Nick was a full-time research intern and a part-time RA in my lab working on bilingualism. He is a co-author on two posters with me. He is currently applying to PhD programs (2017).

Bonnie Breining, PhD candidate (Cognitive Science, Johns Hopkins University), 2014-2015. I co-mentored Bonnie Breining on three projects, two of which are published now: Breining, Nozari, & Rapp (2016), and Nozari, Freund, Breining, Rapp, & Gordon (2016). The third one (Breining, Nozari, & Rapp) is under review. I was also on her dissertation committee. After graduation in Fall 2016, Bonnie accepted a postdoctoral fellowship at Dr. Hillis's lab at the Neurology Department at Johns Hopkins.

Niloofar Akhavan, MA (Psychology, Koc University, Istanbul, Turkey), 2014-2016. I have co-mentored Niloofar on several projects, including collection of data from individuals with aphasia in Iran. I have been a co-author on four papers with Niloofar: Akhavan, Nozari, & Goksun (2015), Akhavan, Goksun, & Nozari (2016), Akhavan, Nozari, & Goksun (2017) and Akhavan, Goksun, & Nozari (2017). Niloofar started her training as a PhD student in Speech and Hearing Sciences at UCSD in Spring 2017. She was awarded the ASHA's Graduate Student Scholarship in Fall 2017.

Christopher Hepner, M.A. (Cognitive Science, Johns Hopkins University), 2016-present. Chris is a full-time Research Assistant in my lab, working on models of phonological working memory in speech perception and production. His second line of research focuses on exploring the cognitive architecture of spoken and written production. He has two posters with me, has co-authored a paper with me (Nozari & Hepner) that is currently under review, and is currently writing up three finished projects.

Jessa Sahl, BA (Music and pre-med, University of Connecticut), 2016-present. Jessa is a full-time Research Assistant in my lab and has been working on language learning in children and individuals with post-stroke aphasia. She has a poster with me, and has also finished a project on second language learning in children in Baltimore schools, the data for which are currently being analyzed. As of December 2017, Jessa has been accepted into medical school at the University of Connecticut, and she is waiting to hear back from other schools.

Part-time trainees (students working part-time in the lab for 1-3 semesters for research credit for Neuroscience, Cognitive Science programs or for Medical Tutorial):

2014: Alex Serafini (freshman, Biomolecular Engineering and Neuroscience double major), Raghav Matta (freshman, Neuroscience major), Rebecca Zhang (freshman, Cellular Biology and Neuroscience double major), 2015-2016: Biobele Braide (junior/senior, Neuroscience major), Katie Link (sophomore/junior, Neuroscience). 2016/2017: Karis D'Alessandro (sophomore/junior, Neuroscience major), Hannah Miller (sophomore, Cognitive Science & Spanish double major), Linyuan Shi (sophomore, Neuroscience), Siri Tummala (freshman, Economics).

Post-doctoral Advisees /Mentees

2015-16 **Alison Trude**, PhD (Psychology, University of Illinois at Urbana-Champaign) currently a language scientist in the Alexa team at Amazon. Alison received her NRSA (F32 grant) from NIH: NIDCD

under my mentorship. She has three conference abstracts with me, as well as a 6-page paper in the proceedings of the Annual Meeting of the Cognitive Science Society, 2017. The data she collected during her time in my lab are ready to be written up as two potential papers.

2016-present **Svetlana Pinet**, PhD (Psychology, Aix-Marseille University). Svetlana works on cognitive and neural basis of typing. She has a poster with me (SNL, 2017), a paper (Pinet & Nozari) that has been invited for revision and resubmission, and another project that is ready for write-up in which she examines the contribution of internal and external channels to monitoring in typing. In addition, she was part of a third project with Chris Hepner, exploring the architecture of the typing system, the data for which are currently being analyzed.

Thesis committees

9/2016 Bonnie Breining, PhD candidate in Cognitive Science, Johns Hopkins University. Dissertation committee member.

2017 Niloofar Akhavan, MA candidate in Psychology, Koc University, Istanbul, Turkey. Dissertation committee member.

2017 Behnoush Tahanzadeh, PhD candidate in Speech and Hearing Sciences, Tehran University of Medical Sciences, Tehran, Iran.

2018 Robert Wiley, PhD candidate in Cognitive Science, Johns Hopkins University. Dissertation committee member.

Educational Program Building / Leadership

2011-2013. Mentor in the PURM (Penn Undergraduate Research Mentorship) program to promote excellence in undergraduate research. Trainee was awarded the Morris Viteles Award for Excellence in Undergraduate Research in Psychology.

2014-present. Mentor in Neuroscience research program. Providing cognitive training on an individual basis for undergraduates in the Neuroscience program.

2014-present. Mentor in the Medical Tutorial program. Providing a unique experience for pre-med students to learn the basics of translational research, as well as modern techniques in cognitive research such as eye-tracking.

2016. Proposed a new course for teaching (Cognitive and Neural Basis of Executive Control) in the department of Cognitive Science.

2016. Mentor in the Women's Mentorship Network sponsored by The American Women's Medical Association.

2016-2017. Head of the search committee for the new faculty hire for the Cognitive Neurology division.

Educational Demonstration Activities to external audiences, on or off campus

2015-present. Supervising HASA (Hopkins Association for Stroke Awareness) volunteer students in an educational community outreach program which engages individuals with post-stroke aphasia in long-distance communication via video or phone. Part of this program's goal is to familiarize students with the communication disorders after stroke, and to help them learn how to communicate with individuals with brain damage.

RESEARCH ACTIVITIES

Research Focus

My research focuses on understanding the cognitive and neural architecture of the language production system and how it interacts with other cognitive systems, especially the executive control system. Together with my students and my collaborators, we have several lines of research, studying the role of executive control in lexical retrieval and grammatical encoding in children, younger and older adults, bilinguals, and individuals with aphasia, with the overarching goal of understanding how the language production system is monitored and regulated. My

recent work has expanded this focus to language learning, as well as re-learning of the lost language after brain damage.

Research Program Building / Leadership

Promoting interdisciplinary research at Johns Hopkins

2014-present. I have supported the mission of the Science of Learning Initiative (SLI), which is to promote inter-departmental collaboration within JHU, by submitting two proposals to the SLI, one in 2014 in collaboration with the Computer Science department, and one in 2016 in collaboration with the School of Education. The first proposal was funded, and the second proposal is under consideration at the moment.

2016-present. In collaboration with Akira Omaki from the department of Cognitive Science, we have submitted a proposal to the National Science Foundation to merge research on adult and child speakers with the goal of understanding the role of executive control in grammatical encoding. This proposal was accepted for funding.

Promoting interdisciplinary research internationally

2005-2006. I acted as a liaison between Kings College London and Tehran University of Medical Sciences, and launched the first phase of the 10/66 international dementia project in Iran. This project entailed translating and standardizing the dementia screening materials in Iran, and conducting the first pilot phase of the study. The results were published in Nozari et al. (2009) in the *International Psychogeriatrics*.

2014-present. In collaboration with Tilbe Goksun in Koc University in Istanbul, Turkey, I launched a program of cross-cultural students involving Persian student in Turkey, to recruit and test Iranian patients with post-stroke aphasia. This effort, which allows us to study a typologically distinct language, Farsi, along Turkish and English, provided us with a unique opportunity for cross-cultural studies. The first student in this program, Niloofar Akhavan, is defending her MA thesis in July and will start her PhD in UCSD in Fall 2016. Based on this work, she has published two 6-page papers in the proceedings of the Cognitive Science Annual Meeting in 2015 and 2016, with another article under review, and one in preparation.

2015-present. Together with the Basque Center on Brain, Language, and Cognition (BCBL) in Spain, I have launched a series of collaborative projects to investigate how language production is regulated and monitored in bilingual English-Spanish speakers. The unique aspect of this collaboration is to allow comparisons between bilinguals whose dominant language is English (the US center) vs. those whose first language is Spanish (the Spain center), and to recruit a wide range of bilingual participants with different degrees of proficiency in either language. The preliminary results of this collaboration are submitted to two conferences this year, the IWLP in San Diego, and the AMLaP conference in Spain.

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2016. Elected to the Academy of Aphasia Membership Board.

2016. Elected to the editorial board of *Frontiers in Psychology* journal (Cognition section)

Journal/conference peer review activities

Reviewer for *Journal of Memory and Language*

Reviewer for *Cognitive Neuropsychology*

Reviewer for *Memory and Cognition*

Reviewer for *Journal of Experimental Psychology: Learning, Memory and Cognition*

Reviewer for *International Journal of Speech-Language Pathology*

Reviewer for *Frontiers in Psychology*

Reviewer for *PLoS One*

Reviewer for *Neuropsychologia*

Reviewer *Acta Psychologica*

Reviewer for *Experimental Brain Research*

Reviewer for Language and Cognitive Processes (now Language, Cognition, and Neuroscience)
Reviewer for Journal of Cognitive Neuroscience
Reviewer for Psychological Science
Reviewer for the 37th Annual Meeting of the Cognitive Science Society
Reviewer for the 29th Annual CUNY Conference on Human Sentence Processing
Reviewer for the 38th Annual Meeting of the Cognitive Science Society
Reviewer for Brain & Language
Reviewer for the Journal of Experimental Psychology: Human Perception and Performance
Reviewer for the Journal of Neurolinguistics
Reviewer for Brain Stimulation
Reviewer for Bilingualism: Language and Cognition
Reviewer for Scientific Reports - Nature Research
Reviewer for Language Learning and Development
Reviewer for the 30th Annual CUNY Conference on Human Sentence Processing
Reviewer for Cognition.
Reviewer for the 38th Annual Meeting of the Cognitive Science Society
Reviewer for Trends in Cognitive Sciences (TICS)

Advisory Committees, Review Groups/Study Sections

2014 Reviewer for the Netherlands Organization for Scientific Research (NWO)
2016 Reviewer for the National Science Foundation (NSF) (Ad hoc reviewer)
2016 Reviewer for the National Science Foundation (NSF) – Dissertation proposals
2017 Reviewer for the William Orr Dingwall Foundation (language processing fellowships for students with Asian ancestry)
2018 Reviewer for the Summer Training and Research (STAR) undergraduate award at Johns Hopkins
2018 Reviewer for the National Science Foundation (NSF) (Panel member, Perception, Action, & Cognition)
2018 Reviewer for l'Agence Nationale de la Recherche (ANR; the French National Research Agency)

Professional Societies

2009-present. Member - Academy of Aphasia
2010-present. Member - Cognitive Science Society
2011-2013. Associate Member - Psychonomic Society
2013-2015. Member - Psychonomic Society
2016- present. Fellow - Psychonomic Society
2016-present. Membership Committee - Academy of Aphasia
2017-present. Member - Society for the Neurobiology of Language
2017-2018. Chair of the Membership Committee - Academy of Aphasia

Session Chair

2010. Chair of the language production session at the 33rd Annual Conference of the Cognitive Science Society.

RECOGNITION

Awards, Honors

2004. Outstanding Chief Intern Award, Children Medical Center, Tehran, Iran.
2005. Travel grant for participation in the 2nd Congress on Brain and Behavior, Thessaloniki, Greece. \$500.
2009. Academy of Aphasia's best student presentation award, Boston, MA.
2010. Outstanding teacher, as ranked by the undergraduate students at University of Illinois at Urbana-Champaign, Lab in Cognitive Psychology.
2010. Robert J. Glushko Award for best dissertation in Cognitive Science. \$10,000.
2013. American Psychological Association's New Investigator Award.
2016. Selected for the Emerging Women Leadership Program, sponsored by the Office of Women in Science and Medicine, Johns Hopkins University.

Invited Talks

National

“A computational case-series approach to investigating the architecture of the lexical access system”, Moss Rehabilitation Institute, March 12, 2009, Philadelphia, Pennsylvania.

“Producing, monitoring and correcting speech: A collaborative effort between two systems”. Invited talk, December 6, 2012, Temple University, Philadelphia, PA.

“What can domain-general buy us? At least a better theory of speech monitoring”. Invited talk, December 13, 2012, Department of Brain and Cognitive Sciences, University of Rochester, Rochester, NY.

“Are speech fluency and executive abilities linked?” Invited talk, December 19, 2012, Albert Einstein Hospital, Elkins Park, PA.

“Monitoring conflict: A domain-general principle of implicit metacognition”, Invited talk, January 22, 2013, Department of Cognitive Science, Johns Hopkins University, Baltimore, MD.

“A new theory of error detection in adults, children and aphasic patients”. Invited talk, February 12, 2013, Department of Communication Sciences and Disorders, New York University, New York, NY.

“Producing, monitoring and correcting speech: A collaborative effort between two systems”. Invited talk, February 18, 2013, Department of Psychology, University of Connecticut, Storrs, CT.

“Language production and executive control: revising the old theories”. Invited talk, March 29, 2013, Department of Psychology, Lehigh University, Bethlehem, PA.

“On selective attention and taming in”, Invited talk, January 23, 2013, School of Education, Johns Hopkins University, Baltimore, MD.

“Prefrontal cortex and language: tDCS as a teacher and a helper”. Invited talk, May 16, 2013, Department of Neurology, Johns Hopkins, Baltimore, MD.

“A new theory of monitoring in language production”. Invited talk, September 30, 2013, department of Psychology, University of Delaware, Newark, DA.

“Speaking with attention: Does it help or does it hurt?”. Invited talk, October 17, 2013, Beckman Institute of Sciences, University of Illinois at Urbana-Champaign, Champaign, IL.

“Pathways for Auditory Word Repetition: Convergence of Computational Models and Lesion Findings”. Invited talk, April 21, 2014, Clinical Neuroscience Conference Series, Johns Hopkins Hospital, Baltimore, MD.

“Cognitive control in word production”. Invited talk, October 28, 2015, University of Maryland at College Park, College Park, MD.

“How do we talk? Understanding a system by looking at its errors” Keynote talk, April 2, 2016, in “Monkeys to Infants to Humans. The first Omega Psi Conference for Undergraduates in Cognitive Science”, Johns Hopkins University, Baltimore, MD.

“Throwing out the baby and keeping the bathwater: Freud’s major contribution to cognitive science of language”, Invited talk, April 18, 2016. HEAD talk series, Johns Hopkins University, Baltimore, MD.

“Monitoring and control of language production”. Invited talk, April 12, 2017. Center for Cognitive Science at the University at Buffalo.

“Aphasia: is it always a language problem?” Invited video-talk, scheduled for February 22, 2018. Center for the Study of Aphasia Recovery (C-STAR).

“Inhibitory control in all levels of the language production system: words, sentences, and conversations”. Invited talk, scheduled for April 17, 2018. Cognitive Science Colloquium series. Northwestern University, Evanston, IL.

International

“Regulation and control of the language production system”. Keynote speech, September, 2016, in 22nd annual meeting of Architectures and Mechanisms for Language Processing Psychology (AMLaP), Basque Center on Cognition, Brain and Language (BCBL), Basque Country, Spain.

“How do we monitor and regulate our speech?” Keynote speech, scheduled for May 1, 2017, in the 7th biennial International Conference of Cognitive Science in Tehran, Iran.

“Production-based monitoring”. Invited speaker for the “Self-monitoring in speech production” proposed by Prof. Robert Hartsuiker, and Dr. Andreas Lind. September 4, 2017, 20th Conference of the European Society for Cognitive Psychology (ESCoP), Potsdam, Germany.

“The role of the left lateral prefrontal cortex in language comprehension and production”. Invited talk, September 12, 2017, the Donders Institute for Brain, Cognition and Behavior in Nijmegen, Netherlands.

“Monitoring and attention in language production”. Invited talk, scheduled for July 2-4, 2018, in the International Workshop on Language Production (IWOLP), Nijmegen, Netherlands.

OTHER PROFESSIONAL ACCOMPLISHMENTS

Posters and Oral/Podium Presentations

Nozari, N. & Daryaei, P. (2005, April). *Effects of a major social stressor (war) on the patterns of tumor extension in breast cancer patients*. Poster presented at the 29th Annual Symposium of the American Society of Breast Disease, Las Vegas, NV.

Nozari, N., & Dell, G.S. (2007, August). *Monitoring or feedback? Evidence from the lexical bias effect*. Paper presented at the University of Illinois’s Psychology Department’s Cognitive Brown Bag Series, Urbana, IL.

Nozari, N. & Dell, G.S. (2007, November). *Lexical bias in speech production: how efficient can a lexical editor be?* Poster presented at the Psychonomic Society’s 48th annual meeting, Long Beach, CA.

Nozari, N. (2008, November). *30 years of lexical bias war: time to call a truce*. Paper presented at the Beckman Institute’s Language Processing Brown Bag Series, Urbana, IL.

Nozari, N., Kittredge, A.K., & Dell, G.S. (2009, March). A computational case-series approach to frequency effect in aphasic word repetition. Poster presented at the CNS annual meeting, San Francisco, CA.

Nozari, N., Kittredge, A.K., & Dell, G.S. (2009, September). *Parallel case-series analysis of aphasic word production*. Poster presented at the Beckman Institute Seminar. Urbana, IL.

Nozari, N., Kittredge, A.K., & Dell, G.S. (2009, October). *A computational case-series approach to frequency effect in aphasic word repetition*. Paper presented at 47th annual meeting of the Academy of Aphasia, Boston, MA.

Nozari, N. & Dell, G.S. (2010, October). *Does error detection require comprehension?* Paper presented at the University of Illinois’s Psychology Department’s Cognitive Brown Bag Series, Urbana, IL.

- Nozari, N.** (2010, December). *A new model of monitoring in speech production*. Paper presented at the Outstanding Graduate Student Seminar, Beckman Institute of Sciences, Urbana, IL.
- Nozari, N. & Dell, G.S.** (2011, July). *Selective attention and speech errors: feature migration in time.* Paper presented at the 33rd Annual Meeting of the Cognitive Science Society, Boston, MA.
- Nozari, N. & Schwartz, M.F.** (2012, July). *Does fluency of speech depend on executive abilities?* Poster presented at the 7th International Workshop on Language Production, New York, NY.
- Nozari, N. & Dell, G.S.,** (2012, October). *Who are the lexical-routers? An investigation into the nature of word repetition in aphasia.* Poster presentation, 50th Annual Meeting of the Academy of Aphasia, San Francisco, CA.
- Nozari, N., Schwartz, M.F., & Coslett, H.B.** (2012, October). *Fluency of speech depends on executive abilities: evidence for two levels of conflict in speech production.* Poster presented at the 50th Annual Meeting of the Academy of Aphasia, San Francisco, CA.
- Nozari, N. & Thompson-Schill, S.L.** (2012, November). *What can you expect from boosting prefrontal cortex?* Poster presented at the Psychonomic Society's 53rd Annual Meeting, Minneapolis, MN.
- Nozari, N., Arnold, J.E., & Thompson-Schill, S.L.** (2013, March). *What does the left prefrontal cortex do for sentence production? Evidence from tDCS.* Poster presented at the 26th Annual CUNY Conference, Columbia, SC.
- Nozari, N., Woodard, K., & Thompson-Schill, S.L.** (2013, April). *Cathodal tDCS: excitatory, inhibitory, or both?* Poster presented at the CNS annual meeting, San Francisco, CA.
- Arnold, J.E., **Nozari, N., & Thompson-Schill, S.L.** (2014, August). *Stimulation of Left Prefrontal Cortex Increases Discourse Connectedness and Reduced References.* Paper presented at RefNet workshop on psychological and computational models of reference comprehension and production, Edinburgh, UK.
- Nozari, N.** (2014, October). *Using Transcranial tDCS to test cognitive hypotheses.* In **N. Nozari** (Chair), Using Transcranial Direct Current Stimulation (tDCS) to study and treat aphasia. Symposium conducted at the 52nd Annual Meeting of the Academy of Aphasia. Miami, FL.
- Nozari, N., Mirman, D., & Thompson-Schill, S. L.** (2014, October). *The role of the left ventrolateral prefrontal cortex in online sentence processing.* Paper presented in the 52nd Annual Meeting of the Academy of Aphasia.
- Middleton, E. L., Schwartz, M. F., Graziano, K., Brown, D, & **Nozari, N.** (2014, October). *Learning from your mistakes: The functional value of spontaneous error monitoring in aphasia.* Poster presented in the 52nd Annual Meeting of the Academy of Aphasia.
- Schwartz, M.F., Middleton, E.L., **Nozari, N., Brecher, A., Gagliardi, M., & Garvey, K.** (2014, October). *A Paradigm for Investigating Executive Control Mechanisms in Word Retrieval in Language-Impaired and Neurotypical Speakers.* Poster presented in the 52nd Annual Meeting of the Academy of Aphasia.
- Arnold, J.E., **Nozari, N., & Thompson-Schill, S.L.** (2014, November). *Stimulation of the prefrontal cortex increases discourse connectedness and reduced references.* Poster presented at the Psychonomic Society's 55th Annual Meeting, Long Beach, CA.
- Nozari, N., Trueswell, J.C., & Thompson-Schill, S.L.** (2014, November). *Local attraction in sentence comprehension is reined in by global constraints and executive abilities,* Poster presented at the Psychonomic Society's 55th Annual Meeting, Long Beach, CA.
- Akhavan, N., Nozari, N., & Goksun, T. (2015, July). *Motion event expressions in language and gesture: Evidence from Persian.* Poster presented at the 37th Annual Conference of the Cognitive Science Society,

Pasadena, CA.

Nozari, N., Dell, G.S., Schneck, K., & Gordon, B. *Implementation of selective attention in sequential word production.* (2015, July). Paper presented at the 37th Annual Conference of the Cognitive Science Society, Pasadena, CA.

Nozari, N., Freund, M., Breining, B., Rapp, B., & Gordon, B. (2015, November). *Two types of cognitive control in word production.* Poster presented at the Psychonomic Society's 56th Annual Meeting, Chicago, IL.

Freund, M., Gordon, B., & Nozari, N. (2016, May). Regulation of language production by conflict-driven, domain-specific control. Poster presented at the 28th APS Annual Convention, Chicago, IL.

Nozari, N., Martin, C., McCloskey, N., & Gordon, B. (2016, July). An adjustable-resource model of cognitive control in sentence production. Poster presented at the International Workshop on Language Production (IWLP), La Jolla, CA.

Trude, A., Gordon, B., & Nozari, N. (2016, July). Recruitment of cognitive resources during perspective-taking varies with contextual demands. Poster presented at the International Workshop on Language Production (IWLP), La Jolla, CA.

Freund, M. & Nozari, N. (2016, July). Conflict-based regulation of control in language production. Poster presented at the International Workshop on Language Production (IWLP), La Jolla, CA.

Nozari, N., Martin, C., & McCloskey, N. (2016, September). An adjustable-resource model of cognitive control in sentence production: insights from English and Spanish. Poster presented at the 22nd Architectures and Mechanisms for Language Processing Psychology (AMLAP), Bilbao, Spain.

Nozari, N. & Faroqi-Shah, Y. (2016, October). How should we approach the study of fluency? A corpus analysis. Platform presentation at the 54th Annual Academy of Aphasia Meeting, Llundudno, Wales.

Akhavan, N., Goksun, T., & Nozari, N. (2016, October). Integrity and function of gestures in aphasia" was accepted for the Conference. Poster presentation at the 54th Annual Academy of Aphasia Meeting, Llundudno, Wales.

Trude, A., & Nozari, N. (2016, October). Cognitive costs of perspective-taking in an individual with nonfluent aphasia. Poster presentation at the 54th Annual Academy of Aphasia Meeting, Llundudno, Wales.

Freund, M., & Nozari, N. (2016, November). Online regulation of language production. Platform presentation at the Psychonomic Society's 57th Annual Meeting. Boston, MA.

Nozari, N., Omaki, A., Sahl, J., & Ovens, Z. (2017, March). Attentional resource allocation in children's subject-verb agreement production. Poster presentation at the 30th Annual CUNY conference. Cambridge, MA.

Hepner, C. & Nozari, N. (2017, September). A resource model of phonological working memory in language production and perception. Poster presentation at the 20th Conference of the European Society for Cognitive Psychology (ESCoP). Potsdam, Germany.

Hanley, R., & Nozari, N. (2017, September). Is working memory involved in monitoring self and other people's speech? Platform presentation at the 20th Conference of the European Society for Cognitive Psychology (ESCoP). Potsdam, Germany.

Nozari, N. (2017, September). Production-based monitoring and control. Platform presentation at the Monitoring symposium in the 20th European Society for Cognitive Psychology (ESCoP). Potsdam, Germany.

Freund, M., Rapp, B., & Nozari, N. (2017, November). Does semantic relatedness help or hurt re-learning of

object names in aphasia? Poster presentation at the 55th Annual Academy of Aphasia Meeting. Baltimore, MD.

Nozari, N. (2017, November). The dual origin of semantic errors in access deficits: activation deficit vs. inhibition deficit. Platform presentation at the 55th Annual Academy of Aphasia Meeting. Baltimore, MD.

Pinet, S., & **Nozari, N.** (2017, November). Electrophysiological correlates of internal performance monitoring in typed language production. Poster presentation at the Ninth Annual Meeting of the Society for the Neurobiology of Language. Baltimore, MD.

Hepner, C. & **Nozari, N.** (scheduled for 2018, July). A resource model of phonological working memory. Platform presentation at the 40th Annual Conference of the Cognitive Science Society. Madison, WI.

Hepner, C., Pinet, S. & **Nozari, N.** (scheduled for 2018, July). An enhanced model of gemination in spelling: Evidence from a large corpus of typing errors. Platform presentation at the 40th Annual Conference of the Cognitive Science Society. Madison, WI.

Nozari, N. & Omaki, A. (scheduled for 2018, July). Syntactic production is not independent of inhibitory control: Evidence from agreement attraction errors. Platform presentation at the 40th Annual Conference of the Cognitive Science Society. Madison, WI.

Community Services

2015-present. Supervising HASA (Hopkins Association for Stroke Awareness) volunteer students in an educational community outreach program which engages individuals with post-stroke aphasia in long-distance communication via video or phone. In addition to raising awareness on communication problems after stroke among university students, this program aims to provide a free service to the individuals in the community who suffer from such communication difficulties to practice their communication skills without leaving their home.