

CONTACT

Department of Communication Sciences and Disorders
Temple University
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EDUCATION

- 2006-2007 Post-doctoral training, Speech Motor Control
Boston University
Massachusetts Institute of Technology
Advisors: Frank H. Guenther, Ph.D., & Joseph S. Perkell, D.M.D., Ph.D.
- 1999-2006 Ph.D., Language and Communicative Disorders
San Diego State University
University of California, San Diego
Dissertation: *The Nature and Time Course of Motor Programming in Apraxia of Speech*
Advisor: Donald A. Robin, Ph.D., CCC-SLP
- 1995-1998 M.A., Neurolinguistics (cum laude)
University of Groningen (the Netherlands)
Thesis: *Sentence Comprehension and Sentence Anagrams in Broca's and Wernicke's Aphasics*
Advisor: Roelien Bastiaanse, Ph.D.
- 1994-1995 B.A., Dutch Linguistics and Literature
University of Groningen (the Netherlands)

POSITIONS and AFFILIATIONS

- 2018-present Associate Professor
Communication Sciences and Disorders, **Temple University**, Philadelphia, PA
- 2015-2018 Assistant Professor
Communication Sciences and Disorders, **Temple University**, Philadelphia, PA
- 2010-2015 Assistant Professor
Speech, Language, and Hearing Sciences, **University of Arizona**, Tucson, AZ
- 2008-2009 Research Associate
Speech, Language, and Hearing Sciences, **University of Arizona**, Tucson, AZ
- 2008-2009 Adjunct Lecturer
Speech, Language, and Hearing Sciences, **University of Arizona**, Tucson, AZ
- 2007 Adjunct Lecturer
Communication Sciences and Disorders, **Massachusetts General Hospital Institute of Health Professions**, Boston, MA
- 2006 Adjunct Lecturer
Speech-Language Pathology and Audiology, **Northeastern University**, Boston, MA

- 2003-2004 Adjunct Lecturer
Speech, Language, and Hearing Sciences, **San Diego State University**, San Diego, CA
- 1998-1999 Visiting Scholar
Speech, Language, and Hearing Sciences, **San Diego State University**, San Diego, CA
Psychology, **University of California, San Diego**, La Jolla, CA
- 1999 Clinical Linguist
Rotterdam Aphasia Foundation, **Rehabilitation Center Rijndam**, Rotterdam, the Netherlands
- 1999 Lab Manager
Linguistics, **University of Groningen**, Groningen, the Netherlands
- 1997-1998 Research Assistant
Linguistics, **University of Groningen**, Groningen, the Netherlands

AWARDS & HONORS

- 2014 Fellowship, *National Institutes of Health (NIH)*, Fourteenth Annual OBSSR/NHLBI Summer Institute on Randomized Behavioral Clinical Trials
- 2010 Fellowship, *American Speech-Language-Hearing Foundation & Research and Scientific Affairs Committee (ASHA-RSAC)*, Grant Review and Reviewer Training Program
- 2009 Fellowship, *American Speech-Language-Hearing Association & National Institute on Deafness and Other Communication Disorders (ASHA-NIDCD)*, Lessons for Success
- 2008 Editor's Award, *American Journal of Speech-Language Pathology*, for Maas et al. (2008)
- 2005 Student Research Travel Award, *American Speech-Language-Hearing Association (ASHA)*
- 2004, 2005 Student Fellowship, *National Institute on Deafness and Other Communication Disorders (NIDCD)*, Research Symposium in Clinical Aphasiology
- 2004 Graduate Student Scholarship, *American Speech-Language-Hearing Foundation*
- 2004 Kala Singh Memorial Scholarship
- 2002 Junior Mentor, *Clinical Aphasiology Conference*, First Annual Mentoring Luncheon
- 2001, 2003 Scholarship, *Friends of the International Center* at the University of California, San Diego
- 2001 International Student Scholarship, *Phi Beta Delta*
- 1998 Scholarship, *VSB Bank (the Netherlands)* for research training at San Diego State University and University of California, San Diego

RESEARCH SPECIALTIES

Speech-language production disorders in children and adults (aphasia, apraxia of speech, phonological disorders)

Speech motor planning, speech motor control and learning

Treatment for speech disorders in children and adults

RESEARCH FUNDING**Under review**

- 2018 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
R01 DC017768 (PI: Maas)
Optimizing Treatment Outcomes for Childhood Apraxia of Speech: A Phase I Trial of ASSIST
Role: PI (Co-Investigators: J. Wu & S. Caspari)
- 2018 National Health and Medical Research Council (Australian Government)
Medical Research Future Fund APP1169895 (PI: McCabe)
Role: Co-Investigator (PI: P. McCabe; Co-Investigators: A. Purcell, R. Heard, J. Preston, B. McNeill, E. Murray, D. Thomas, & P. Cronin)

Active

- 2017-2019 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
R21 DC015859 (PI: Hoover)
Role: Co-Investigator (PI: E. Hoover; Co-Investigators: G. DeDe & T. Dai)
Total award: \$300,000

Completed

- 2016-2017 Childhood Apraxia of Speech Association of North America (CASANA)
Treatment Research Grant (PI: Maas)
Bang for your Buck: A Systematic Investigation of Amount and Intensity of Practice in Treatment for Childhood Apraxia of Speech
Role: PI (Consultants: C. Gildersleeve-Neumann, K. Jakielski, & R. Stoeckel)
Total award: \$35,000
- 2016-2017 Cleft Palate Foundation
Junior Investigator Research Grant (PI: Scheer-Cohen)
Applying Principles of Motor Learning in Articulation Therapy for Children with Cleft Palate
Role: Mentor/Consultant (PI: A. Scheer-Cohen)
Total award: \$5,000
- 2013-2016 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
R03 DC013152 (PI: Preston)
Ultrasound Biofeedback for Therapy-Resistant Children with Speech Sound Disorders
Role: Consultant (PI: J. Preston)
Total award: \$545,442
- 2010-2015 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
K01 DC010216 (PI: Maas)
Psycholinguistic Investigations of Development and Disorders of Speech Production
Role: PI (Mentors: L. Gerken & B. Story)
Total award: \$691,285
- 2009-2012 American Speech-Language-Hearing Foundation
New Century Scholars Research Grant (PI: Maas)
Feedback and Feedforward Control Mechanisms in Apraxia of Speech
Role: PI (Collaborators: F. Guenther & B. Story)
Total award: \$10,000

2009-2010 Childhood Apraxia of Speech Association of North America (CASANA)
 Treatment Research Grant (PI: Maas)
Practice Schedule and Feedback Frequency in Treatment for Childhood Apraxia of Speech
 Role: PI (Co-Investigator: K. Farinella)
 Total award: \$12,000

OTHER FUNDING (training grants, conference grants, intramural funding)

Under review

2018 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
 T32 (PI: Reilly)
Plasticity in Learning and Communication: A Lifespan Perspective
 Role: Faculty Affiliate (PI: J. Reilly).

2018 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
 F31 (PI: Spencer)
Neural Mechanisms of Speech Production in Intervention for Residual Speech Sound Disorders
 Role: External Co-Sponsor (PI: C. E. Spencer; Sponsor: S. Boyce)

Active

2018 Temple University Graduate School
 First Summers Research Grant (PI: Beiting)
Treatment for speech disorders in children with autism spectrum disorder: A novel treatment
 Role: Mentor (PI: M. Beiting)
 Total award: \$6,500

Completed

2017 Temple University Graduate School
 First Summers Research Grant (PI: van Zelst)
Unpacking active ingredients and optimizing treatment outcomes for children with childhood apraxia of speech: Simultaneous Audio and Visual Entrainment (SAVE) treatment
 Role: Mentor (PI: A. van Zelst)
 Total award: \$6,500

2017 Once Upon A Time... Foundation
 Conference Grant (PI: Maas)
Treatment of Childhood Apraxia of Speech using DTTC (February 25-26, 2017)
 Role: PI (organizer)
 Total award: \$20,997

2015-2017 National Institutes on Deafness and Other Communication Disorders (NIH/NIDCD)
 F31 DC014375 (PI: Mailend)
Speech Motor Planning in Apraxia of Speech and Aphasia
 Role: Co-Sponsor (PI: M.-L. Mailend; Sponsor: P. Beeson)
 Total award: \$108,145

PUBLICATIONS (* indicates student co-author)Peer-reviewed journal articles*Submitted*

- a. Maas, E., Gildersleeve-Neumann, C., Jakielski, K., *Kovacs, N., Stoeckel, R., *Vradelis, H., *Welsh, M., & *van Zelst, A. (in revision). Bang for your buck: A single-case experimental design study of practice amount and distribution in treatment for childhood apraxia of speech. *Manuscript in revision.*
- b. Terband, H., Rodd, J., & Maas, E. (in revision). Testing hypotheses about the underlying deficit of apraxia of speech (AOS) through computational neural modeling with the DIVA model. *Manuscript in revision.*
- c. *Mailend, M.-L., Maas, E., Beeson, P., Story, B., & Forster, K. (submitted). Reprogramming the speech motor buffer: Evidence from apraxia of speech and aphasia. *Manuscript in review.*

Published

1. Preston, J. L., Leece, M. C., McNamara, K., & Maas, E. (2017). Variable practice during ultrasound visual feedback treatment for childhood apraxia of speech. *American Journal of Speech-Language Pathology*, 26, 840-852. doi: 10.1044/2017_AJSLP-16-0155.
2. Maas, E. (2017). Speech versus nonspeech: What are we talking about? *International Journal of Speech-Language Pathology*, 19, 345-359. doi: 10.1080/17549507.2016.1221995.
3. Maas, E., & *Mailend, M.-L. (2017). Fricative contrast and coarticulation in children with and without speech sound disorders. *American Journal of Speech-Language Pathology*, 26, 649-663. doi:10.1044/2017_AJSLP-16-0110.
4. Preston, J. L., Leece, M. C., & Maas, E. (2017). Motor-based treatment with and without ultrasound feedback for residual speech sound errors. *International Journal of Language and Communication Disorders*, 52, 80-94. doi: 10.1111/1460-6984.12259.
5. Preston, J. L., Leece, M. C., & Maas, E. (2016). Intensive treatment with ultrasound visual feedback for speech sound errors in childhood apraxia. *Frontiers in Human Neuroscience*, 10:440. doi: 10.3389/fnhum.2016.00440
6. McAllister Byun, T., Swartz, M. T., Halpin, P. F., Szeredi, D., & Maas, E. (2016). Direction of attentional focus in biofeedback treatment for /r/ misarticulation. *International Journal of Language and Communication Disorders*, 51, 384-401. doi: 10.1111/1460-6984.12215.
7. Preston, J. L., Maas, E., Whittle, J., Leece, M. C., & McCabe, P. (2016). Limited acquisition and generalisation of rhotics with ultrasound visual feedback in childhood apraxia. *Clinical Linguistics & Phonetics*, 30, 363-381. doi: 10.3109/02699206.2015.1052563.
8. Terband, H., Maassen, B., & Maas, E. (2016). Een procesgerichte aanpak van differentiaaldiagnose en therapieplanning bij spraakontwikkelingsstoornissen. *Stem-, Spraak-, en Taalpathologie*, 21, 1-31. [A process-oriented approach to differential diagnosis and treatment planning in childhood speech sound disorders.]
9. Ballard, K. J., Wambaugh, J. L., Duffy, J. R., Layfield, C., Maas, E., Mauszycki, S., & McNeil, M. R. (2015). Treatment for acquired apraxia of speech: A systematic review of intervention research between 2004 and 2012. *American Journal of Speech-Language Pathology*, 24, 316-337. doi:10.1044/2015_AJSLP-14-0118.

10. Maas, E., *Mailend, M.-L., & Guenther, F. H. (2015). Feedforward and feedback control in apraxia of speech (AOS): Effects of noise masking on vowel production. *Journal of Speech, Language, and Hearing Research*, 58, 185-200. doi:10.1044/2014_JSLHR-S-13-0300.
11. Preston, J. L., McCabe, P., Rivera-Campos, A., Whittle, J. L., Landry, E., & Maas, E. (2014). Ultrasound visual feedback treatment and practice variability for residual speech sound errors. *Journal of Speech, Language, and Hearing Research*, 57, 2102-2115. doi: 10.1044/2014_JSLHR-S-14-0031.
12. Maas, E., *Gutiérrez, K., & Ballard, K. J. (2014). Phonological encoding in apraxia of speech and aphasia. *Aphasiology*, 28 (1), 25-48. doi:10.1080/02687038.2013.850651
13. *Mailend, M.-L., & Maas, E. (2013). Speech motor planning in apraxia of speech: Evidence from a delayed picture-word interference task. *American Journal of Speech-Language Pathology*, 22, S380-S396.
14. Maas, E., & *Mailend, M.-L. (2012). Speech planning happens before speech execution: Contributions of on-line reaction time methods in the study of apraxia of speech. *Journal of Speech, Language, and Hearing Research*, 55, S1523-S1534.
15. Maas, E., *Butalla, C. E., & Farinella, K. A. (2012). Feedback frequency in treatment for childhood apraxia of speech. *American Journal of Speech-Language Pathology*, 21, 239-257.
16. Maas, E., & Farinella, K. A. (2012). Random versus blocked practice in treatment for childhood apraxia of speech. *Journal of Speech, Language, and Hearing Research*, 55, 561-578.
17. Ghosh, S. S., Matthies, M. L., Maas, E., Hanson, A., Tiede, M., Ménard, L., Guenther, F. H., Lane, H., & Perkell, J. S. (2010). An investigation of the relation between sibilant production and somatosensory and auditory acuity. *Journal of the Acoustical Society of America*, 128 (5), 3079-3087.
18. Austermann Hula, S. N., Robin, D. A., Maas, E., Ballard, K. J., & Schmidt, R. A. (2008). Effects of feedback frequency and timing on acquisition, retention, and transfer of speech skills in acquired apraxia of speech. *Journal of Speech, Language, and Hearing Research*, 51 (5), 1088-1113.
19. Maas, E., Robin, D. A., Wright, D. L., & Ballard, K. J. (2008). Motor programming in apraxia of speech. *Brain and Language*, 106, 107-118.
20. Maas, E., Robin, D. A., Austermann Hula, S. N., Freedman, S. E., Wulf, G., Ballard, K. J., & Schmidt, R. A. (2008). Principles of motor learning in treatment of motor speech disorders. *American Journal of Speech-Language Pathology*, 17, 277-298. (Received 2008 Editor's Award).
21. Ballard, K. J., Maas, E., & Robin, D. A. (2007). Treating control of voicing in apraxia of speech with variable practice. *Aphasiology*, 21 (12), 1195-1217.
22. Freedman, S. E., Maas, E., Caligiuri, M. P., Wulf, G., & Robin, D. A. (2007). Internal vs. external: Oral-motor performance as a function of attentional focus. *Journal of Speech, Language, and Hearing Research*, 50 (1), 131-136.
23. Love, T., Maas, E., & Swinney, D. (2003). The influence of language exposure on lexical and syntactic language processing. *Experimental Psychology*, 50 (3), 204-216.
24. Bastiaanse, R., Edwards, S., Maas, E., & Rispens, J. (2003). Assessing comprehension and production of verbs and sentences: The Verb and Sentence Test (VAST). *Aphasiology*, 17 (1), 49-73.
25. Maas, E., Barlow, J., Robin, D., & Shapiro, L. (2002). Treatment of sound errors in aphasia and apraxia of speech: Effects of phonological complexity. *Aphasiology*, 16 (4/5/6), 609-622.
26. Bastiaanse, R., Rispens, J., & Maas, E. (2000). De Werkwoorden- en Zinnentest (WEZT). Een nieuw diagnostisch instrument voor afasie. *Logopedie en Foniatrie*, 72 (12), 259-267. [The Verb and Sentence Test (VAST). A new diagnostic instrument for aphasia.]
27. Maas, E. (1998). Zinsbegrip en zinsanagrammen bij Broca-patiënten en Wernicke-patiënten. *Toegepaste Taalwetenschap in Artikelen*, 3, 65-76. Proceedings of the ANéLA/VKL/WAP conference, Amsterdam, May 1998). [Sentence comprehension and sentence anagrams in Broca's aphasia patients and Wernicke's aphasia patients.]

Invited articles*Submitted*

- a. Terband, H., Maassen, B., & Maas, E. (submitted). A model of speech development and disorders for diagnosis and treatment planning. *Folia Phoniatrica et Logopaedica*. Invited manuscript in review.

Published

1. Maas, E. (2015). Optimalisering van spraaktherapie: De toepassing van trainingsprincipes voor het leren van motorische vaardigheden. *Stem-, Spraak-, en Taalpathologie*, 20, 44-70. [Optimization of speech therapy: The application of principles of motor learning.]
2. Maas, E., Gildersleeve-Neumann, C. E., Jakielski, K. J., & Stoeckel, R. (2014). Motor-based intervention protocols in treatment of childhood apraxia of speech (CAS). *Current Developmental Disorders Reports*, 1 (3), 197-206. doi:10.1007/s40474-014-0016-4.
3. Maas, E. (2010). Conditions of practice and feedback in treatment for apraxia of speech. *Perspectives on Neurophysiology and Neurogenic Speech and Language Disorders*, 20 (3), 81-87.

Book chapters

1. Terband, H., Maassen, B., & Maas, E. (2016). Towards a model of pediatric speech sound disorders (SSD) for differential diagnosis and therapy planning. In P. van Lieshout, B. Maassen, & H. Terband, (Eds.), *Speech Motor Control in Normal and Disordered Speech: Future Developments in Theory and Methodology* (pp. 81-110). Rockville, MD: American Speech-Language-Hearing Association.
2. Maas, E., & Robin, D. A. (2009). Motor speech disorders: Apraxia and dysarthria. In L. Justice (Ed.), *Communication Sciences and Disorders: An Introduction (2nd edition)* (pp. 392-425). Columbus, OH: Merrill Prentice Hall.
3. Maas, E., Freedman, S. E., & Robin, D. A. (2009). Traumatic brain injury. In M.R. McNeil (Ed.), *Clinical Management of Sensorimotor Speech Disorders (2nd edition)* (pp. 391-393). New York: Thieme.
4. Freedman, S. E., Maas, E., & Robin, D. A. (2009). Neurofibromatosis. In M.R. McNeil (Ed.), *Clinical Management of Sensorimotor Speech Disorders (2nd edition)* (pp. 352-353). New York: Thieme.
5. Robin, D. A., Maas, E., Sandberg, Y., & Schmidt, R. A. (2007). Motor control and learning and childhood apraxia of speech. In P. Hall, L. Jordan, & D.A. Robin (Eds.), *Developmental Apraxia of Speech. Theory and Clinical Practice (2nd edition)* (pp. 67-86). Austin, TX: Pro-Ed.
6. Maas, E. & Robin, D. A. (2005). Motor speech disorders: Apraxia and dysarthria. In L. Justice (Ed.), *Communication Sciences and Disorders: An Introduction* (pp. 180-211). Columbus OH: Merrill Prentice Hall.

Tests

1. Bastiaanse, R., Maas, E., & Rispens, J. (2000). *De Werkwoorden en Zinnentest (WEZT)*. Lisse: Swets & Zeitlinger. [The Verb and Sentence Test (VAST).]

Published abstracts and conference proceedings

1. Hoover, E. L., DeDe, G., & Maas, E. (2018). Effects of group size on conversation treatment outcomes: results of standardized testing. *Aphasiology*, 32 (S1), 93-95.
2. Maas, E. (2017). Principles of motor learning in treatment for apraxia of speech. *Frontiers in Human Neuroscience*. Conference Abstract: Academy of Aphasia 55th Annual Meeting. doi: 10.3389/conf.fnhum.2017.223.00094.

3. *Mailend, M.-L., Maas, E., & Beeson, P. (2017). Examining the articulatory buffer in apraxia of speech. *Stem-, Spraak- en Taalpathologie*, 22 Supplement, 107.
4. *van Zelst, A., & Maas, E. (2017). Speech timing in children with and without speech sound disorders: Acoustic measures of absolute and relative timing accuracy. *Stem-, Spraak- en Taalpathologie*, 22 Supplement, 113.
5. Terband, H., Rodd, J., & Maas, E. (2015). Simulations of feedforward and feedback control in apraxia of speech (AOS): Effects of noise masking on vowel production in the DIVA model. In: *The 18th International Congress of Phonetic Sciences (ICPhS 2015)*.
6. Byun, T. M., Richtsmeier, P., & Maas, E. (2013). Covert contrast in child phonology is not necessarily extragrammatical. In *LSA 2013 Annual Meeting Extended Abstracts*. Linguistic Society of America.
7. Maas, E., *Mailend, M.-L., & Guenther, F. H. (2011). The role of auditory feedback in apraxia of speech: Effects of feedback masking on vowel contrast. *Stem-, Spraak- en Taalpathologie*, 17 (suppl.), 14.
8. Maas, E., Robin, D. A., Steinhauer, V., Ballard, K. J., Magnuson, C. E., & Wright, D. L. (2006). Motor programming in apraxia of speech: A reaction time approach. *Stem-, Spraak- en Taalpathologie*, 14 (suppl.), 69.
9. Rhee, J. H., Robin, D. A., Maas, E., & Wright, D. L. (2006). Motor programming during speech articulation: An application of Klapp's two-process model. *Journal of Sport and Exercise Psychology*, 28, S152-S153.
10. Wright, D. L., Robin, D. A., Maas, E., & Magnuson, C. E. (2006). A general motor programming deficit contributes to apraxia of speech. *Journal of Sport and Exercise Psychology*, 28, S195.
11. Bastiaanse, R., & Maas, E. (1998). Verb movement in agrammatic production. *Brain and Language*, 65, 52-55.

PRESENTATIONS

Peer-reviewed conference presentations

Oral presentations

1. Murray, E., Iuzzini-Seigel, J., Maas, E., Terband, H., & Ballard, K. J. (accepted). Diagnosis of childhood apraxia of speech compared to other speech sound disorders: A systematic review. Paper to be presented at the American Speech-Language-Hearing Association Convention (Boston, MA, November 2018).
2. Hoover, E., DeDe, G., Maas, E., & McFee, A. (accepted). Conversational group treatment approaches: The influence of group size. Oral seminar to be presented at the American Speech-Language-Hearing Association Convention (Boston, MA, November 2018).
3. *Van Zelst, A., & Maas, E. (accepted). Unpacking active ingredients for treatment of childhood apraxia of speech: Simultaneous Audio-Visual Entrainment (SAVE) treatment. Paper to be presented at the American Speech-Language-Hearing Association Convention (Boston, MA, November 2018). *WITHDRAWN*
4. DeDe, G., Hoover, E., & Maas, E. (2018). Effects of group size on conversation treatment outcomes: Results of standardized testing. Paper presented at the Clinical Aphasiology Conference (Austin, TX, May 2018).

5. Maas, E., Gildersleeve-Neumann, C. E., Jakielski, K., *Kovacs, N., Stoeckel, R., *Vradelis, H., *Welsh, M., & *van Zelst, A. (2018). Treatment amount and intensity in childhood apraxia of speech (CAS). Paper accepted for presentation at the Biennial Conference on Motor Speech (Savannah, GA, February 2018). *WITHDRAWN DUE TO ILLNESS*.
6. Terband, H., Rodd, J., & Maas, E. (2018). Testing hypotheses about the underlying deficit of apraxia of speech (AOS) through computational neural modelling: Effects of noise masking on vowel production in the DIVA model. Paper presented at the Biennial Conference on Motor Speech (Savannah, GA, February 2018).
7. Maas, E., Gildersleeve-Neumann, C. E., Jakielski, K., *Kovacs, N., Stoeckel, R., *Vradelis, H., *Welsh, M., & *van Zelst, A. (2017). Treatment for childhood apraxia of speech (CAS): Amount and intensity of practice. Paper presented at the American Speech-Language-Hearing Association Convention (Los Angeles, CA, November 2017).
8. *Mailend, M.-L., & Maas, E. (2016). The effect of phonetic similarity on speech motor planning in apraxia of speech and aphasia. Paper presented at the American Speech-Language-Hearing Association Convention (Philadelphia, PA, November 2016).
9. Maas, E. (2016). Principles of motor learning in treatment for CAS: An update and new findings. Paper presented at National Conference on Childhood Apraxia of Speech (Itasca, IL, July 2016).
10. *Mailend, M.-L., Beeson, P. M., & Maas, E. (2016). Reprogramming phonetically similar words in apraxia of speech and aphasia. Paper presented at the Clinical Aphasiology Conference (Charlottesville, VA, May 2016).
11. Maas, E. (2016). Speech and nonspeech: What are we talking about? Paper presented at the Biennial Conference on Motor Speech (Newport Beach, CA, March 2016).
12. Terband, H., Rodd, J., & Maas, E. (2015). Simulations of feedforward and feedback control in apraxia of speech (AOS): Effects of noise masking on vowel production in the DIVA model. Paper presented at the International Congress of Phonetic Sciences (Glasgow, Scotland, Aug. 2015).
13. *Mailend, M.-L., Maas, E., & Forster, K. I. (2014). Interference from phonetic similarity in masked priming. Paper presented at the American Speech-Language-Hearing Association Convention (Orlando, FL, November 2014).
14. Maas, E., *Alvarez, L., & *Mailend, M.-L. (2014). Fricative production in children with speech sound disorders. Paper presented at the American Speech-Language-Hearing Association Convention (Orlando, FL, November 2014).
15. Maas, E., *Bueno, F., *Mailend, M.-L., & Guenther, F. (2014). Feedback and feedforward control in apraxia of speech (AOS): Noise masking effects on fricative production. Paper presented at the Clinical Aphasiology Conference (St. Simon's Island, GA, May-June 2014).
16. Maas, E., *Bueno, F., *Mailend, M.-L., & Guenther, F. H. (2014). Effects of feedback masking on fricative contrast in speakers with and without apraxia of speech. Paper presented at the Biennial Conference on Motor Speech (Sarasota, FL, February-March 2014).
17. Ballard, K. J., Wambaugh, J. L., Duffy, J. R., Layfield, C., Maas, E., Mauszycki, S. C., & McNeil, M. R. (2013). Updated treatment guidelines for acquired apraxia of speech: Systematic review of studies 2004 to 2012. Paper presented at the American Speech-Language-Hearing Association Convention (Chicago, IL, November 2013).
18. Maas, E., & *Phillips, E. (2013). Phonological representations in children with and without speech sound disorders. Paper presented at the American Speech-Language-Hearing Association Convention (Chicago, IL, November 2013).
19. McAllister Byun, T., Maas, E., & Swartz, M. T. (2013). Motor learning principles in /r/ treatment: Direction of attentional focus. Paper presented at the American Speech-Language-Hearing Association Convention (Chicago, IL, November 2013).

20. Maas, E., *Mailend, M.-L., & Guenther, F. H. (2013). Feedback and feedforward control in speech production in apraxia of speech and aphasia. Paper presented at the Clinical Aphasiology Conference (Tucson, AZ, May-June 2013).
21. Maas, E., *Mailend, M.-L., & Guenther, F. H. (2012). The role of auditory feedback during speech production in apraxia of speech. Paper presented at the Biennial Conference on Motor Speech (Santa Rosa, CA, March 2012).
22. Maas, E. (2011). Speech planning happens before speech execution: An argument for using reaction time measures in apraxia of speech. Paper presented at the symposium "Apraxia of Speech: Mechanisms and Symptoms" (Groningen, The Netherlands, June 2011).
23. Maas, E., *Mailend, M.-L., & Guenther, F. H. (2011). The role of auditory feedback in apraxia of speech (AOS): Effects of feedback masking on vowel contrast. Paper presented at the International Conference on Speech Motor Control (Groningen, The Netherlands, June 2011).
24. Maas, E., & Farinella, K. A. (2010). Feedback frequency in treatment for childhood apraxia of speech. Paper presented at the American Speech-Language-Hearing Association Convention (Philadelphia, PA, November 2010).
25. Perkell, J. S., Matthies, M. L., Ghosh, S. S., Maas, E., Hanson, A., Guenther, F. H., Lane, H., Ménard, L., & Tiede, M. (2008). Auditory and somatosensory goals for sibilants. Paper presented at the Acoustical Society of America meeting (Paris, France, June 2008).
26. Maas, E., Robin, D., Magnuson, C., Wright, D., & Ballard, K. (2005). Motor programming in apraxia of speech: central or modality-specific deficit? Paper presented at the American Speech-Language-Hearing Association Convention (San Diego, CA, November 2005).
27. Ballard, K. J., Maas, E., Robin, D. A., Guo, L.-Y. (2005). Treating interarticulator coordination in apraxia of speech with variable practice. Paper presented at the Clinical Aphasiology Conference (Sanibel Island, FL, May-June 2005).
28. Wright, D. L., Magnuson, C. E., Robin, D., Maas, E., & Ballard, K. (2005). Programming timing during movement sequences: An investigation of apraxia of speech. Paper presented at the European Workshop on Movement Science (Vienna, Austria, June 2005).
29. Austermann, S., Robin, D., Ballard, K., Maas, E., & Schmidt, R. (2004). Low versus high frequency feedback in apraxia of speech. Paper presented at the Biennial Conference on Motor Speech (Albuquerque, NM, March 2004).
30. Maas, E., Barlow, J., Robin, D., & Shapiro, L. (2001). Treatment of phonological errors in aphasia and apraxia of speech: Effects of phonological complexity. Paper presented at the Clinical Aphasiology Conference (Santa Fe, NM, June 2001).
31. Maas, E., Barlow, J., Morris, D., Robin, D., & Shapiro, L. (2000). Treatment of phonological errors in aphasia: Effects of complexity. Paper presented at the Annual International Aphasia Rehabilitation Conference (Rotterdam, the Netherlands, August 2000).
32. Maas, E. (1998). Zinsbegrip en zinsanagrammen in Broca-patiënten en Wernicke-patiënten. Paper presented at the ANÉLA/VKL/WAP Conference (Amsterdam, the Netherlands, May 1998).

Poster presentations

1. *Beiting, M., *Mailend, M.-L., *Gross, L., & Maas, E. (accepted). Development of speech motor control: Evidence from coarticulation in adults, typical, and speech disordered children. Poster to be presented at the American Speech-Language-Hearing Association Convention (Boston, MA, November 2018).
2. *Sanwald, T., & Maas, E. (accepted). Phonological versus speech motor priming in apraxia of speech and aphasia. Poster to be presented at the American Speech-Language-Hearing Association Convention (Boston, MA, November 2018).

3. Hoover, E. L., DeDe, G., & Maas, E. (2018). Effects of group size on conversation treatment outcomes: results of standardized testing. Poster presented at the International Aphasia Rehabilitation Conference (Aveiro, Portugal, September 2018).
4. *van Zelst, A., & Maas, E. (2018). Is timing really everything? Absolute and relative timing of speech in children with and without speech sound disorders. Poster presented at the Biennial Conference on Motor Speech (Savannah, GA, February 2018).
5. Terband, H., Maassen, B., & Maas, E. (2018). A model of speech development and disorders for diagnosis and treatment planning. Poster presented at the Biennial Conference on Motor Speech (Savannah, GA, February 2018).
6. *van Zelst, A., & Maas, E. (2017). Speech timing in children with and without speech sound disorders. Poster presented at the American Speech-Language-Hearing Association Convention (Los Angeles, CA, November 2017).
7. *Mailend, M.-L., Maas, E., & Beeson, P. (2017). Examining the articulatory buffer in apraxia of speech. Poster presented at the International Conference on Speech Motor Control (Groningen, the Netherlands, July 2017).
8. *van Zelst, A., & Maas, E. (2017). Speech timing in children with and without speech sound disorders: Acoustic measures of absolute and relative timing accuracy. Poster presented at the International Conference on Speech Motor Control (Groningen, Netherlands, July 2017).
9. Maas, E., & *Mailend, M.-L. (2017). Speech motor planning in apraxia of speech and aphasia: Effects of auditory distractors on vowel acoustics. Poster presented at the Clinical Aphasiology Conference (Snowbird, UT, May-June 2017).
10. *Cochran, E., *Soghomonian, A., *Nally, A., Goss, M., Maas, E., & Garcia, F. (2016). “Chata,” “Kata,” or “Casa?”: Assessment & treatment of childhood apraxia of speech in a dual language learner. Poster presented at the American Speech-Language-Hearing Association Convention (Philadelphia, PA, November 2016).
11. *Mailend, M.-L., Maas, E., & Beeson, P. M. (2016). Examining the speech motor planning buffer in apraxia of speech and aphasia. Poster presented at the Annual Eleanor M. Saffran Conference on Cognitive Neuroscience and Rehabilitation of Communication Disorders (Philadelphia, PA, September 2016).
12. Maas, E., & *Mailend, M.-L. (2016). Fricative contrast and coarticulation in children with and without speech sound disorders. Poster presented at the Biennial Conference on Motor Speech (Newport Beach, CA, March 2016).
13. *Mailend, M.-L., Maas, E., & Beeson, P. M. (2016). Phonetic similarity effects in apraxia of speech. Poster presented at the Biennial Conference on Motor Speech (Newport Beach, CA, March 2016).
14. Powers, C., Gildersleeve-Neumann, C. E., Maas, E., Jakielski, K. J., & Stoeckel, R. (2015). Investigating amount and intensity of practice in treatment of childhood apraxia of speech. Poster presented at the American Speech-Language-Hearing Association Convention (Denver, CO, November 2015).
15. *Mailend, M.-L., Maas, E., & Forster, K. I. (2014). Phonetic similarity effects in masked priming. Poster presented at the International Workshop on Language Production (Geneva, Switzerland, July 2014).
16. McAllister Byun, T., Swartz, M. T., & Maas, E. (2014). Direction of attentional focus in speech-motor learning: Evidence from biofeedback intervention. Poster presented at the Biennial Conference on Motor Speech (Sarasota, FL, March 2014).

17. Maas, E., & *Phillips, E. (2013). Segmental or holistic phonological representations in children with and without speech sound disorders (SSD)? Evidence from a mispronunciation detection task. Poster presented at the Symposium on Research in Child Language Disorders (Madison WI, June 2013).
18. McAllister Byun, T., Richtsmeier, P., & Maas, E. (2013). Covert contrast in child phonology is not necessarily extragrammatical. Poster presented at the Annual Meeting of the Linguistic Society of America (Boston, MA, January 2013).
19. *Mailend, M.-L., & Maas, E. (2012). Speech motor planning in the face of distraction: Evidence from apraxia of speech. Poster presented at the International Workshop on Language Production (New York, NY, July 2012).
20. Maas, E., *Tellez, A.-A., & *Mailend, M.-L. (2012). Phonological planning in children with and without speech sound disorders. Poster presented at the Symposium on Research in Child Language Disorders (Madison WI, June 2012).
21. *Mailend, M.-L., & Maas, E. (2012). Apraxia of speech: Impaired access to motor programs or impaired motor programs? Poster presented at the Clinical Aphasiology Conference (Lake Tahoe, CA, May 2012). (*NIDCD Research Symposium in Clinical Aphasiology Student Fellowship* to 1st author)
22. Maas, E., *Mailend, M.-L., & *Swanson, L. T. (2012). Anticipatory coarticulation in typically developing children and in children with speech disorders. Poster presented at the Biennial Conference on Motor Speech (Santa Rosa, CA, March 2012).
23. *Gutiérrez, K., Maas, E., & Ballard, K. J. (2011). Phonological priming in apraxia of speech and aphasia. Poster presented at the Clinical Aphasiology Conference (Ft. Lauderdale, FL, May-June, 2011). (*NIDCD Research Symposium in Clinical Aphasiology Student Fellowship* award to 1st author)
24. *Lopez, A. A., & Maas, E. (2011). Vowel errors and their treatment in childhood apraxia of speech. Poster presented at the Annual Convention of the Arizona Speech-Language-Hearing Association (Phoenix, AZ, April 2011).
25. *Tellez, A.-A., & Maas, E. (2011). Phonological representations in speech planning in children with speech disorders. Poster presented at the Annual Convention of the Arizona Speech-Language-Hearing Association (Phoenix, AZ, April 2011).
26. *Butalla, C. E., Farinella, K. A., & Maas, E. (2011). Feedback frequency effects in treatment for childhood apraxia of speech. Poster presented at the Annual Convention of the Arizona Speech-Language-Hearing Association (Phoenix, AZ, April 2011).
27. Maas, E., & Farinella, K. A. (2010). Random versus blocked practice in treatment for childhood apraxia of speech. Poster presented at the Biennial Conference on Motor Speech (Savannah, GA, March 2010).
28. Maas, E., Robin, D. A., Steinhauer, V., Ballard, K. J., Magnuson, C. E., & Wright, D. L. (2006). Motor programming in apraxia of speech: A reaction time approach. Poster presented at the International Conference on Speech Motor Control (Nijmegen, the Netherlands, June 2006).
29. Maas, E., Robin, D. A., Steinhauer, V., Magnuson, C. E., Wright, D. L., & Ballard, K. J. (2006). Apraxia of speech as an impairment of preprogramming. Poster presented at the Clinical Aphasiology Conference (Ghent, Belgium, June 2006).
30. Rhee, J. H., Robin, D. A., Maas, E., & Wright, D. L. (2006). Motor programming during speech articulation: An application of Klapp's two-process model. Poster presented at the annual conference of the North American Society for the Psychology of Sport and Physical Activity (Denver, CO, June, 2006).
31. Wright, D. L., Robin, D. A., Maas, E., & Magnuson, C. E. (2006). A general motor programming deficit contributes to apraxia of speech. Poster presented at the annual conference of the North American Society for the Psychology of Sport and Physical Activity (Denver, CO, June, 2006).

32. Ballard, K. J., Maas, E., & Robin, D. A. (2006). Treating control of voicing in apraxia of speech with variable practice. Poster presented at the Western Australia 2006 Speech Pathology Australia National Conference, Frontiers (Fremantle, Australia, May 2006).
33. Maas, E., Robin, D. A., Ballard, K. J., Magnuson, C. E., & Wright, D. L. (2006). Speech motor programming in apraxia of speech: A reaction time approach. Poster presented at the Biennial Conference on Motor Speech (Austin, TX, March 2006).
34. Austermann, S. N., Robin, D. A., Maas, E., Ballard, K. J., & Schmidt, R. A. (2006). Principles of motor learning applied to the treatment of acquired apraxia of speech: Feedback frequency and timing. Poster presented at the Biennial Conference on Motor Speech (Austin, TX, March 2006).
35. Freedman, S. E., Maas, E., Caligiuri, M. P., Wulf, G., & Robin, D. A. (2006). Oral-motor learning, retention, and transfer as a function of attentional focus. Poster presented at the Biennial Conference on Motor Speech (Austin, TX, March 2006).
36. Freedman, S. Maas, E., Wulf, G., Caligiuri, M., & Robin, D. (2005). Effects of attentional focus on oral motor control and learning. Poster presented at the American Speech-Language-Hearing Association Convention (San Diego, CA, November 2005).
37. Maas, E., Robin, D. A., Magnuson, C. E., Wright, D. L., & Ballard, K. (2005). Motor programming in apraxia of speech and aphasia. Poster presented at the Clinical Aphasiology Conference (Sanibel Island, FL, June 2005). (*NIDCD Research Symposium in Clinical Aphasiology Student Fellowship award to 1st author*)
38. Austermann, S., Robin, D. A., Maas, E., Ballard, K., & Schmidt, R. (2005). The effect of feedback delay on the treatment of acquired apraxia of speech. Poster presented at the Clinical Aphasiology Conference (Sanibel Island, FL, June 2005).
39. Freedman, S., Maas, E., Wulf, G., Caligiuri, & Robin, D. A. (2005). Effects of attentional focus on oral-motor control and learning. Poster presented at the Clinical Aphasiology Conference (Sanibel Island, FL, June 2005).
40. Austermann, S., Maas, E., Robin, D., Ballard, K., & Schmidt, R. (2004). The role of feedback frequency in the treatment of acquired apraxia of speech. Poster presented at the Clinical Aphasiology Conference (Park City, UT, May 2004). (*NIDCD Research Symposium in Clinical Aphasiology Student Fellowship award to 1st and 2nd author*)
41. de Goede, D., Wester, F., Bastiaanse, R., Maas, E., den Ouden, D. B., Shapiro, L., & Swinney, D. (2003). Verb movement and gap-filling in Dutch sentence processing. Poster presented at the Verb and Sentence Processing in Aphasia Group conference on Verbs: Properties, Processes and Problems (London, UK, April 2003).
42. Wester, F., de Goede, D., Bastiaanse, R., Maas, E., den Ouden, D. B., Shapiro, L., & Swinney, D. (2003). Verb activation in on-line sentence processing. Poster presented at the Annual CUNY Conference on Human Sentence Processing (Cambridge, MA, March 2003).
43. Maas, E., Shapiro, L., & Swinney, D. (2003). The nature of gap-filling: syntactic or semantic order? Poster presented at the Annual CUNY Conference on Human Sentence Processing (Cambridge, MA, March 2003).
44. Bastiaanse, R. & Maas, E. (1998). Verb movement in agrammatic production. Poster presented at the Annual Academy of Aphasia (Santa Fe, NM, November 1998).

Invited presentations

1. Maas, E. (2018). Evidence-based treatment for childhood apraxia of speech. Invited presentation at the International Conference on Special Education and Speech Therapy, dedicated to the 50th anniversary of Special Education & Speech Therapy at Tartu University (Tartu, Estonia, Oct. '18)

2. Maas, E. (2018). Zijn principes voor het leren van motorische vaardigheden relevant voor spraakontwikkelingsdyspraxie (SOD)? [Are principles of motor learning relevant for childhood apraxia of speech (CAS)?]. Invited talk in special session (with Ben Maassen, Veerle Waelkens, & Karin Brinkmann), presented at the annual conference of the VVL (Vlaamse Vereniging voor Logopedisten) [Flemish Speech-Language Pathology Association] (Gent, Belgium, March 2018).
3. Maas, E. (2018). Theoretisch kader bij spraakontwikkelingsdyspraxie (SOD): Waar gaat het mis? [Theoretical framework for childhood apraxia of speech (CAS): What goes wrong?]. Invited talk in special session (with Ben Maassen, Veerle Waelkens, & Karin Brinkmann), presented at the annual conference of the VVL (Vlaamse Vereniging voor Logopedisten) [Flemish Speech-Language Pathology Association] (Gent, Belgium, March 2018).
4. Maas, E. (2017). Principles of motor learning in treatment for apraxia of speech. Invited presentation in symposium on learning (with Gary Dell, Erica Middleton, Brenda Rapp, & Sofia Vallila Rohter), presented at the annual meeting of the Academy of Aphasia (College Park, MD, November 2017).
5. Maas, E. (2017). Principles of motor learning: What are they and do they work for speech motor learning? Invited presentation at the Winter School on *Speech Perception and Production* (Berlin, Germany, January 2017).
6. Maas, E. (2016). Phonological planning and speech motor planning: Insights from speech-language production disorders. Invited presentation (*Speech and Language Science* committee) for panel entitled *Disorders at the interface of language and motor control: Experiments and modeling* (with Joe Duffy, Lisa Goffman, & Frank Guenther), presented at the American Speech-Language-Hearing Association Convention (Philadelphia, PA, November 2016).
7. Baker, E., & Maas, E. (2016). Making evidence-based decisions for children with speech sound disorders. Invited short course (*Speech Sound Disorders* committee), presented at the American Speech-Language-Hearing Association Convention (Philadelphia, PA, November 2016).
8. Maas, E. (2016). Principles of motor learning in treatment of apraxia of speech. Invited presentation at the Annual Eleanor M. Saffran Conference on Cognitive Neuroscience and Rehabilitation of Communication Disorders (Philadelphia, PA, September 2016).
9. Maas, E. (2016). An introduction to principles of motor learning in treatment for CAS: What are they and do they work? Invited presentation at the National Childhood Apraxia of Speech Conference (Itasca, IL, July 2016).
10. Maas, E. (2016). Apraxia of speech: Treatment approaches and their evidence. Invited oral seminar presented at the Annual Illinois Speech-Language-Hearing Association Convention (Rosemont, IL, February 2016).
11. Maas, E. (2016). Apraxia of speech: Current views on assessment and diagnosis. Invited oral seminar presented at the Annual Illinois Speech-Language-Hearing Association Convention (Rosemont, IL, February 2016).
12. Maas, E. (2014). Principles of motor learning in childhood speech disorders. Invited oral seminar for the *Motor Speech Disorders in Adults and Children* committee, presented at the American Speech-Language-Hearing Association Convention (Orlando, FL, November 2014).
13. Maas, E. (2013). An introduction to principles of motor learning and their relevance for speech and voice. Invited short course entitled *Motor Learning Principles: Clinical Implications for Voice Disorders*, presented at the American Speech-Language-Hearing Association Convention (Chicago, IL, November 2013).
14. Maas, E. (2013). State of the Art in CAS Neurocognitive-Behavioral Research: Some thoughts for moving forward in assessment and treatment. Panel response presented at the Childhood Apraxia of Speech Research Symposium (Atlanta, GA, February 2013).

15. Maas, E. (2012). Snake oil, fish oil, ethics, and evidence in the field of communication pathology. Invited short course, Department of Communication Pathology, University of Pretoria (Pretoria, South Africa, August 2012)
16. Maas, E. (2011). Interpreting the evidence in evidence-based practice: A tutorial on single-subject treatment research. Paper presented at the National Childhood Apraxia of Speech Conference (San Diego, CA, July 2011).
17. Maas, E. (2010). Principles of motor learning: A brief introduction. Invited presentation for short course entitled *Motor Learning Principles: Clinical Implications for Stuttering & Other Disorders*, at the American Speech-Language-Hearing Association Convention (Philadelphia, PA, Nov. 2010).
18. Maas, E. (2010). Principles of motor learning in childhood apraxia of speech. Invited presentation at the Grunewald-Blitz Workshop (Tucson, AZ, September 2010).
19. Maas, E. (2010). Principles of motor learning applied to childhood apraxia of speech: An overview and new evidence. Invited presentation at the National Conference on Childhood Apraxia of Speech (Pittsburgh, PA, July 2010).
20. Farinella, K., & Maas, E. (2010). Applying principles of motor learning to treatment for childhood apraxia of speech: New evidence. Invited presentation at the Arizona Speech-Language Hearing Association Convention (Phoenix, Arizona, April 2010).
21. Maas, E. (2009). Speech / spoken language planning in children. Invited presentation at the Auditory Cognitive Neuroscience Society Meeting (Tucson, AZ, January 2009).
22. Shapiro, L., Swinney, D., & Maas, E. (2003). The contributions of lexical and structural information in language comprehension. Invited symposium presented at the Clinical Aphasiology Conference (Orca's Island, WA, May 2003).
23. Maas, E. & Barlow, J. A. (2003). Complexity in language and learning: implications for planning treatment. Invited presentation at the First Annual Southern California Conference on Speech, Language and Hearing Sciences (San Diego, CA, February 2003).

Professional education/outreach presentations, workshops, and colloquia

1. *van Zelst, A., & Maas, E. (2018). Is timing really everything? Absolute and relative timing of speech in children with and without speech sound disorders. Poster presented at the College of Public Health Research Day (Philadelphia, PA, April 2018)
2. Maas, E. (2018). More BANG for your buck: Amount and intensity of treatment for childhood apraxia of speech. Presentation at the Communication Sciences and Disorders Proseminar, Temple University (Philadelphia, PA, March 2018).
3. Maas, E. (2018). Apraxia of Speech (AOS): A problem in speech motor planning. Presentation at the Philadelphia Aphasia Community at Temple (PACT) Second Saturday Community Group (Philadelphia, PA, February 2018).
4. *van Zelst, A., & Maas, E. (2017). Speech timing as a potential measure for differential diagnosis of speech disorders in children. Poster presented at the College of Public Health Research Day (Philadelphia, PA, April 2017).
5. Maas, E. (2017). Speech planning in apraxia of speech (AOS): Evidence from acoustic and reaction time studies. Invited presentation at New York University's Department of Communicative Sciences and Disorders colloquium (New York City, NY, February 2017).
6. Maas, E. (2016). Current research and clinical applications for childhood apraxia of speech. Invited in-service presentation at Children's Hospital of Philadelphia (Philadelphia, PA, December 2016).
7. Maas, E. (2016). Current research in the treatment of childhood apraxia of speech. Invited in-service presentation at AGSpeech Language Potential, LLC (Media, PA, September 2016).

8. Maas, E. (2016). Evidence-based diagnosis and treatment of childhood apraxia of speech. Invited in-service presentation at School District of Philadelphia (Philadelphia, PA, September 2016).
9. Maas, E. (2016). Diagnosis and treatment of childhood apraxia of speech. Invited in-service presentation at Montgomery County Intermediate Unit (Norristown, PA, August 2016).
10. Maas, E. (2016). Treatment for apraxia of speech in adults and children. Invited in-service presentation at Jefferson Hospital Outpatient Rehabilitation (Philadelphia, PA, June 2016).
11. Maas, E. (2016). Diagnosis and treatment of childhood apraxia of speech. Invited in-service presentation at St. Christopher's Pediatric Therapy (Jenkintown, PA, May 2016).
12. Maas, E. (2016). Bang for your buck: Optimizing treatment for childhood apraxia of speech. Presentation at the Communication Sciences and Disorders Proseminar, Temple University (Philadelphia, PA, April 2016).
13. Maas, E. (2016). Apraxia of speech: Assessment, diagnosis, and treatment. Invited in-service at the Rehabilitation Institute of Chicago (Chicago, IL, February 2016).
14. Maas, E. (2015). Speech planning in apraxia of speech (AOS): Some recent evidence from acoustic and reaction time studies. Invited presentation at Moss Rehabilitation Research Institute (Elkins Park, PA, November 2015)
15. Maas, E. (2015). Understanding speech sound disorders in children. Invited in-service presentation at Tucson Unified School District (Tucson, AZ, April 2015).
16. *Fisk, D., & Maas, E. (2015). The size of phonological units in children with speech sound disorders (SSD): Evidence from preparation priming. Poster presented at the University of Arizona Undergraduate Biology Research Program Conference (Tucson, AZ, January 2015).
17. Maas, E., & *Mailend, M.-L. (2014). Diagnosis of apraxia of speech in children and adults: Current state of the art and considerations for the future. Invited presentation at the University of Arizona's NSSLHA Educational Forum (Tucson, AZ, September 2014).
18. Maas, E. (2014). Randomized controlled trials for behavioral interventions: Application to communication disorders. Presentation at the Speech, Language, and Hearing Sciences colloquium, University of Arizona (Tucson, AZ, October 2014).
19. Maas, E. (2013). A whirlwind tour of principles of motor learning and their relevance for speech and voice. Presentation for forum organized by graduate students, Department of Speech, Language, and Hearing Sciences, University of Arizona (Tucson, AZ, December 2013).
20. Maas, E. (2013). Treatment for childhood apraxia of speech: Some recent evidence. Presentation at the Department of Speech, Language, and Hearing Sciences Open House Homecoming (Tucson, AZ, November, 2013)
21. Maas, E., & *Phillips, E. (2013). Mispronunciation detection as a window into phonological knowledge. Presentation at the Speech, Language, and Hearing Sciences colloquium, University of Arizona (Tucson, AZ, October 2013).
22. Maas, E. (2013). Demystifying the principles of motor learning in speech therapy. Invited presentation, Childhood Apraxia of Speech Association of North America webinar (Sept. 2013).
23. Maas, E. (2013). Principles of motor learning in Childhood Apraxia of Speech. Invited presentation, SpeechPathology.com webinar (March 2013).
24. Maas, E. (2013). Feedback and feedforward control in apraxia of speech. Presentation at Speech, Language, and Hearing Sciences colloquium, University of Arizona (Tucson, AZ, January 2013).
25. Maas, E. (2012). Phonological planning in children with and without speech disorders. Presentation at the Speech, Language, and Hearing Sciences colloquium, University of Arizona (Tucson, AZ, October 2012).
26. Maas, E. (2012). Phonological planning in typical development and in children with speech sound disorders. Invited presentation at the Speech Research Laboratory colloquium, Indiana University (Bloomington, IN, June 2012).

27. Maas, E. (2012). Speech planning in children with and without speech disorders. Invited presentation at the Speech, Language, and Hearing Sciences colloquium, Purdue University (West Lafayette, IN, June 2012).
28. Maas, E., & *Gutiérrez, K. (2012). Phonological representations in bilingual speakers. Presentation at Sound Minds, Department of Linguistics, University of Arizona (Tucson AZ, March 2012).
29. Maas, E. (2011). Apraxia of speech: Current views on diagnosis and treatment. Invited presentation, SpeechPathology.com webinar (November 2011).
30. Maas, E. (2010). It's not what you say, it's how you say it: Studies of speech production. Invited presentation at the Minority Access to Research Careers colloquium (Tucson, AZ, Nov. 2010).
31. *Lopez, A. A., & Maas, E. (2010). Insight into vowel errors and their treatment in childhood apraxia of speech. Poster presented at the University of Arizona Undergraduate Biology Research Program / Summer Research Institute Program (Tucson, AZ, August 2010).
32. *Tellez, A.-A., & Maas, E. (2010). Speech output planning in children: Bigger or smaller units? Poster presented at the University of Arizona Undergraduate Biology Research Program / Minority Health Disparity Program (Tucson, AZ, August 2010).
33. Maas, E. (2010). Treating speech production deficits in childhood apraxia of speech. Invited presentation at the Minority Health Disparities colloquium (Tucson, AZ, July 2010).
34. Maas, E. (2010). Treating speech production deficits in childhood apraxia of speech: Practice schedules and generalization patterns. Invited presentation at the University of Arizona Linguistics Colloquium (Tucson, AZ, April 2010).
35. Maas, E. (2009). Severe articulation disorders. Invited presentation at the L4 Forum, University of Arizona (Tucson, AZ, October 2009).
36. Maas, E., & Farinella, K. A. (2009). Childhood Apraxia of Speech: Diagnosis and treatment. Invited in-service presentation, STARS Student Therapy (Tucson, AZ, October 2009).
37. *Gutiérrez, K., & Maas, E. (2009). Insight on segmental and holistic speech planning in children via auditory priming. Poster presented at the University of Arizona Undergraduate Biology Research Program / Minority Health Disparity Program (Tucson, AZ, August 2009).
38. Maas, E. (2009). Conditions of practice in treatment for motor speech disorders. Invited presentation at University of Arizona's NSSLHA Educational Forum (Tucson, AZ, March 2009).
39. Maas, E. (2008). Principles of motor learning applied to speech motor learning. Presentation at Speech, Language, and Hearing Sciences colloquium, Univ. of Arizona (Tucson, AZ, Jan. 2008).
40. Ballard, K. J., Maas, E., & Robin, D. A. (2007). Principles of motor learning in treatment of motor speech disorders. Workshop presented at the Speech Pathology Australia National Conference (Sydney, Australia, May 2007).
41. Maas, E. (2004). Speech motor programming in apraxia of speech. Invited presentation at the Human Performance Laboratory, Texas A & M University (College Station, TX, March 2004).
42. Maas, E. (2003). Factors influencing the efficacy of treatment for acquired language disorders. Invited in-service at Braintree Rehabilitation Hospital (Braintree, MA, March 2003).
43. Maas, E. (2002). Psycho gap-filling. Paper presented at the annual Joint Doctoral Program Colloquium, UCSD (San Diego, CA, September 2002).
44. Maas, E. (2001). Treatment of sound production errors in aphasia and apraxia of speech: effects of phonological complexity. Paper presented at the annual Joint Doctoral Program Colloquium, SDSU (San Diego, CA, October 2001).
45. Maas, E. (2000). Processing recalcitrant pronouns. Paper presented at the annual Joint Doctoral Program Colloquium, UCSD (San Diego, CA, September 2000).
46. Maas, E. (1998). Zinsbegrip en zinsanagrammen in Broca-patiënten en Wernicke-patiënten. Paper presented at the TABU-day, Lectures in Linguistics (Groningen, Netherlands, June 1998).

TEACHING EXPERIENCE**Instructor***Graduate courses*

- 2016-2018 Foundations and Management of Motor Speech Disorders (*Temple U.*)
 2012-2013 Introduction to Research Methods in Speech and Hearing Sciences (*U. of Arizona*)
 2010 Software Applications in SLHS – E-Prime (*U. of Arizona*)
 2010 Speech Perception (combined with undergraduate section) (*U. of Arizona*)
 2007 Neuromotor Speech Disorders (*MGH Institute of Health Professions*)
 2007 Research Design (*MGH Institute of Health Professions*)
 2006 Language Disorders in Children (*Northeastern University*)

Undergraduate courses

- 2017-2018 Introduction to Research Methods in Communication Sciences (*Temple U.*)
 2017, 2019 Topics in Communication Sciences & Disorders – Clinical Phonetics (*Temple U.*)
 2010-2011 Speech Perception (combined with graduate section 2010) (*U. of Arizona*)
 2008-2015 Phonetics (*U. of Arizona*)
 2003-2004 Phonetics (*San Diego State University*)

Teaching Assistant

- 2006 Language as a Cognitive System (*University of California, San Diego*)
 2004 Speech Instrumentation (*San Diego State University*)
 2002 Introduction to Cognitive Science (*University of California, San Diego*)
 2000-2002 Phonetics (*San Diego State University*)

Guest Lectures

- 2017-2018 Topics in Speech, Language, & Hearing – Childhood Apraxia of Speech (*Temple U.*)
 2016-2017 Topics in Communication Sciences & Disorders – Apraxia of Speech (*Temple U.*)
 2015 Foundations and Management of Motor Speech Disorders (*Temple U.*)
 2015-2016 Foundations and Management in Phonological Disorders (*Temple U.*)
 2012 Evaluation Process in Speech-Language Pathology (*U. of Arizona*)
 2010-2011 Introduction to Research Methods in Speech and Hearing Sciences (*U. of Arizona*)
 2010, 2016-17 Normal Bases of Speech Production (*U. of South Carolina; on-line*)
 2008-2016 Neuromotor Speech Disorders (*U. of Arizona*)
 2008-2011 Scientific Thinking (*U. of Arizona*)
 2005-2006 Motor Speech Disorders (*San Diego State University*)
 2005 Communication Processes & Aging (*San Diego State University*)
 2004-2005 Neurological Foundations of Cognition (*University of California, San Diego*)
 2004 Speech and Language Neuroscience (*San Diego State University*)
 2003-2004 Research Methods (*San Diego State University*)
 2002 Language Acquisition (*San Diego State University*)

MENTORING EXPERIENCE

Dissertation and thesis committees

Ph.D. student committees (= Chair; EE = external examiner; Com = committee member; UA = University of Arizona)*

Year	Student	Title	Role	Institution	Chair
2018	Anne Marie Lewis	<i>Phonological and Speech Motor Abilities in Children with Childhood Apraxia of Speech and Phonological Disorder</i>	EE	Curtin U.	Hennessey
2017-2016-18	*Molly Beiting *Anne van Zelst	[withdrawn]	Chair Chair	Temple Temple	
2017	*Marja-Liisa Mailend	<i>Speech Motor Planning in Apraxia of Speech and Aphasia</i>	Chair	UA	
2017	Stacie Park	<i>Be Clear: A Novel Treatment for Non-progressive Dysarthria</i>	EE	U. Queensland (Australia)	Theodoros
2016	Salomé Geertsema	<i>Application of Principles of Motor Learning in the Treatment of Speech Sound Disorders</i>	Com	U. Pretoria (South Africa)	van der Merwe
2015	Christina Meyers	<i>Investigation of Treatment Dose Schedule for Children with Specific Language Impairment</i>	Com	UA	Plante
2015	Ka Yu (Kelvin) Chong	<i>The role of cognitive complexity, task sequencing and modality in picture difference tasks</i>	Com	UA	Bever
2013	Elizabeth Murray	<i>Treatment Efficacy for Children with Childhood Apraxia of Speech</i>	EE	U. Sydney (Australia)	McCabe
2011	Jessamyn Schertz	<i>More or Less Voiced: Exaggerating Featural Contrasts in English Stops and Vowels</i>	Com	UA	Archangeli

Master's thesis committees (= Chair; UA = University of Arizona)*

Year	Student	Title	Institution	Chair
2018-	*Grace Potkovic	<i>Feedback Control in Treatment for Apraxia of Speech</i>	Temple	
2018-	*Phillip Mahoney	<i>Knowledge of Performance vs. Knowledge of Results Feedback in the Treatment of Apraxia of Speech</i>	Temple	
2018-	Corinne Leach		Temple	Martin
2018	Rebecca Goldenberg	<i>Effects of Conversational Group Treatment on Patient-Reported Outcome Measures of Communication and Social Isolation</i>	Temple	DeDe
2017	*Mackenzie Welsh	<i>A Systematic Examination of Practice Amount in Childhood Apraxia of Speech (CAS) Treatment using an Integral Stimulation Approach</i>	Temple	
2017	*Nicolette Kovacs	<i>Treatment of Childhood Apraxia of Speech: A Single-Case Experimental Design Study of Intensity of Treatment</i>	Temple	
2017	Bridget Parkes	<i>Is Verb Network Strengthening Treatment (VNeST) Effective at a Lower Dosage?</i>	Temple	DeDe
2016	Elizabeth Brophy	<i>Generalization across Verb Types after Verb Network Strengthening Treatment (VNeST): A Treatment Study.</i>	Temple	DeDe
2014	Kimberly Neely	<i>Variation in F2 Trajectories as Evidence for Articulatory Gesture Overlap: A Modeling Study.</i>	UA	Story
2011	*Jenna Beltrami	<i>Changes in Vowel Space after Treatment in Childhood Apraxia of Speech.</i>	UA	
2011	*Christine Butalla	<i>The Effects of Feedback Frequency in Childhood Apraxia of Speech: Retention and Transfer</i>	UA	

Undergraduate Honors thesis advisor (UA = University of Arizona)

Year	Student	Title	Institution
2017	Helen Vradelis	<i>Intelligibility Measures for Children with Childhood Apraxia of Speech: A Review</i>	Temple
2012	Leah Swanson	<i>Anticipatory Coarticulation in Typically Developing Children and in Children with Speech Disorders.</i>	UA
2011	Erin Chute	<i>The Nature of Phonological Representations in Adults and Children: Evidence of Mispronunciation Detection.</i>	UA

Faculty mentoring

Year	Mentoring program	Faculty	Institution
2017-18	ASHA Advancing Academic Research Careers (AARC)	Ramesh Kaipa, Ph.D.	Oklahoma State University
2017-18	ASHA Pathways Program	Ramesh Kaipa, Ph.D.	Oklahoma State University
2016-17	ASHA Advancing Academic Research Careers (AARC)	Alison Scheer-Cohen, Ph.D., CCC-SLP	California State University, San Marcos

Undergraduate student mentoring

Year	Mentorship program	Students	Institution
2018	Diamond Research Scholars (DRS)	Talia Irgangladen	Temple
2017-18	ASHA Students Preparing for Academic and Research Careers (SPARC)	Taryn Sanwald	Temple
2011-15	Arizona Assurance Scholars (AZA)	Jessie Hogan Monica Martinez Dasha McKinney Kevin Mollica Pauline Muñoz	UA*
2011, 14-15	Undergraduate Biology Research Program (UBRP)	Danielle Fisk Leah Swanson Anna-Alyse Tellez	UA
2010, 13-14	Minority Health Disparities (MHD)	Lizbeth Alvarez Fernanda Bueno Anna-Alyse Tellez	UA
2011-13	Arizona Science, Engineering, & Math Scholars (ASEMS)	Mun Aw Amie Wolter	UA
2013	Student Affairs Research (STARS)	Lizbeth Alvarez	UA
2011	ASHA SPARC (not awarded)	Anna-Alyse Tellez	UA
2009-10	McNair Achievement Program	Keila Gutiérrez	UA
2010	Summer Research Institute (SRI)	Amanda Lopez	UA
2010	Biomedical Research Abroad: Vistas Open! (BRAVO)	Keila Gutiérrez	UA
2010	Minority Access to Research Careers (MARC)	Anna-Alyse Tellez	UA

* UA = University of Arizona

High school student mentoring

Year	Mentoring program	Student	Institution
2012	Southern Arizona Regional Science & Engineering Fair (SARSEF)	Emily Tran	University High School / UA*

* UA = University of Arizona

REVIEWING and EDITORIAL EXPERIENCE**Grant review**

Grant review panel chair

Childhood Apraxia of Speech Association of North America (CASANA) (2012)

Ad hoc grant reviews

*American Speech-Language-Hearing Foundation (ASH Foundation)**Childhood Apraxia of Speech Association of North America (CASANA)**Fonds Wetenschappelijk Onderzoek – Vlaanderen (Research Foundation Flanders)**Lee Silverman Voice Treatment Foundation (LSVT Foundation)**National Institutes of Health – National Institute of Neurological Disorders and Stroke (NIH-NINDS)**National Science Foundation (NSF)**Neurological Foundation of New Zealand (NFNZ)**Technologiestichting STW (Dutch Technology Foundation)**Veterans Health Administration Rehabilitation Research & Development – Sensory Systems panel (VA)***Editorial Service**

Associate Editor

International Journal of Speech-Language Pathology (2018-2020)

Guest Editor

*Journal of Speech, Language, and Hearing Research (2018)**American Journal of Speech-Language Pathology (2018)*

Guest Associate Editor

American Journal of Speech-Language Pathology (2013, 2015)

Editorial Consultant

International Journal of Speech-Language Pathology (2015-2017)

Ad hoc journal reviewer

*American Journal of Speech-Language Pathology**Archives of Physical Medicine and Rehabilitation**Aphasiology**BioMed Research International**Cerebral Cortex**Clinical Linguistics & Phonetics**Contemporary Issues in Communication Sciences and Disorders**Cortex**Developmental Neuropsychology**Folia Phoniatica et Logopaedica**Human Brain Mapping**International Journal of Language and Communication Disorders**International Journal of Speech-Language Pathology**Journal of the Acoustical Society of America**Journal of Communication Disorders**Journal of Developmental & Behavioral Pediatrics**Journal of Phonetics**Journal of Medical Speech-Language Pathology**Journal of Motor Learning and Development**Journal of the Neurological Sciences**Journal of Neuroscience**Journal of Pediatric Rehabilitation Medicine**Journal of Speech, Language, & Hearing Research**Language and Cognitive Processes**Language and Speech**Language, Learning, and Development**Language, Speech, and Hearing Services in Schools**Motor Control**NeuroImage**Perceptual & Motor Skills**South African Journal of Communication Disorders**Speech, Language, and Hearing*

SERVICE and LEADERSHIP**National & International Service**

2018-present	Chair, ANCDs Writing Committee on Acquired and Childhood Apraxia of Speech
2018	Invited host of roundtable discussion <i>Undergraduates in Your Lab: A Win-Win</i> , at ASHA Convention (Boston, November 2018)
2018	Mentor, ASHA Mentoring Academic Research Careers (MARC) program (Suzanne King; Elgustus Polite)
2018	Mentor, ASHA Student to Empowered Professional (STEP) program (Shawna Moreland)
2017-2018	Member, reading committee & student award judge, 2018 <i>Conference on Motor Speech</i>
2017-present	Member, Research Advisory Board, PROMPT Institute
2017-present	Member, Advisory Board for the E. M. Saffran <i>Conference on Cognitive Neuroscience and Rehabilitation of Communication Disorders</i>
2017	Consultant, ASHA Clinical Practice Research Institute (PIs: Preston, McAllister)
2017	Mentor, ASHA Pathways program
2016-present	Member, ASHA Pathways program leadership team
2016-present	Member, ANCDs Committee on Childhood Apraxia of Speech
2016-2017	Member, program committee for 7 th <i>International Conference on Speech Motor Control</i>
2016-2017	Faculty-Research partner, ASHA PROMoting the next GENERation of Researchers (PROGENY) program (Taylor Robbins; Keziah St. Louis)
2016	Reviewer, ASHA Students Preparing for Academic Research Careers (SPARC) program
2016	Member, <i>Motor Speech in Adults and Children</i> subcommittee for ASHA Convention
2016	Member, <i>Speech Sound Disorders</i> subcommittee for ASHA Convention
2015-2016	Reviewer, 2016 <i>Conference on Motor Speech (Motor Speech Disorders track)</i>
2015	Reviewer, ASHA Practice Portal content (Acquired Apraxia of Speech topic)
2013	Member, Local Arrangements Committee, <i>Clinical Aphasiology Conference</i>
2012-present	Member, Prof. Advisory Board, <i>Childhood Apraxia of Speech Association of North America</i>
2012-2014	Member, <i>Motor Speech in Adults and Children</i> subcommittee for ASHA Conventions
2012-2013	Member, Steering Committee for 2013 CASANA Research Symposium
2011	Reviewer and session moderator, 6 th <i>International Conference on Speech Motor Control</i>
2011-present	Member, ANCDs Practice Guidelines Committee on Treatment for Acquired Apraxia of Speech
2010, 2012, 2018	Reviewer, <i>American Speech-Language-Hearing Foundation scholarships</i>
2010	Member, <i>Language Disorders in Adults</i> subcommittee for ASHA Convention
2005	Member, <i>Motor Speech in Adults and Children</i> subcommittee for ASHA Convention
2001	Student Reviewer, 31 st <i>Clinical Aphasiology Conference</i>
1999-2009	Contributor, <i>Afasiologie</i> (research summaries for speech-language pathologists)

University Service

2018	Member, Academic Misconduct committee (CSD, Temple University)
2016	Member, College of Public Health Building Steering committee (Temple University)
2015-	Member, Ph.D. program update committee (CSD, Temple University)
2015	Member, Speech-Language Pathology Masters program Admissions Committee (SLHS, University of Arizona)
2013-2015	Chair, Colloquium Committee (SLHS, University of Arizona)

2011-2015	Member, Scholarship Committee (SLHS, <i>University of Arizona</i>)
2010-2012	Chair, Undergraduate Committee (SLHS, <i>University of Arizona</i>)
2005	Doctoral student representative, Speech Science search committee (SDSU)
2002-2005	Graduate Seminar Series Coordinator (SDSU/UCSD)
2002-2003	Graduate student representative, UCSD Student Regulations and Revisions Committee
2001-2005	Committee Member, UCSD Graduate Student Association, Finance Committee
2001-2005	Graduate student rep, UCSD Office for Students with Disabilities Advisory Committee
2001-2005	Graduate student representative, UCSD Academic Dishonesty Hearing Board
2001	Member, UCSD Graduate Student Association, Finance Reform Committee
2000-2005	Program representative, UCSD Graduate Student Association

PROFESSIONAL MEMBERSHIPS

2017-present	Academy of Neurologic Communication Disorders and Sciences (ANCDs)
2016-present	ASHA Special Interest Division 19: Speech Science
2008-present	ASHA Special Interest Division 2: Neurogenic Communication Disorders
2008-present	American Speech-Language-Hearing Association (ASHA)
1998-present	Vereniging voor Klinische Linguïstiek (<i>Clinical Linguistics Association</i>)