

Christine Brennan, Ph.D. CCC-SLP/L

Assistant Professor

Department of Speech, Language, and Hearing Sciences

University of Colorado, Boulder

2501 Kittredge Loop Drive, Boulder, CO 80309-0409

christine.brennan@colorado.edu

EDUCATION

- 2014 Ph.D., Communication Sciences and Disorders
Department of Communication Sciences and Disorders, Northwestern University
- 1999 M.A., Speech-Language Pathology
Department of Communication Sciences and Disorders, Northwestern University
- 1996 B.A., Communication Disorders
Department of Communication Disorders, Southern Connecticut State University

CERTIFICATIONS

- 2000-Present Certificate of Clinical Competence, ASHA
- 2000-Present License in Speech Language Pathology, Illinois

PROFESSIONAL EXPERIENCE

- 2015-Present Assistant Professor
Department of Speech, Language, and Hearing Sciences, University of Colorado Boulder
- 2015-Present Academic Fellow
Institute of Cognitive Sciences, University of Colorado Boulder
- 2015-Present Academic Fellow
Center for Neuroscience, University of Colorado Boulder
- 2014-2015 Visiting Assistant Professor
Department of Communication Sciences and Disorders, Northwestern University
- 2003-Present Owner/Partner and Clinical Consultant
Brennan & Burns, LLC, Skokie, IL
- 1999-2003 Speech-Language Pathologist
Niles Township District of Special Education (NTDSE), District 807, IL

GRANTS & AWARDS

- (in preparation) A language processing model of mathematical reasoning: Modulation of multiple networks related to performance on word-based versus equation format problems. Application to NSF Division of Behavioral and Cognitive Sciences in the Directorate for Social, Behavioral, and Economic Sciences. Role: PI. Due April, 2019.
- 2019 App-based reading intervention for adults with dyslexia. Application to CU Boulder RIO Seed Grant. Role: PI. Status: Under review.
- 2017 A systematic analysis of dynamic activation of multiple neural networks during mathematical tasks with incrementally increased language demands in typical school-aged children. Application to CU Boulder RIO Seed Grant. Role: PI. Not funded.

- 2016 Neural Bases of Language Scaffolding for Math Abilities. Application to the NSF Directorate for Education & Human Resources (EHR) Role: PI. Not funded.
- 2015 Neural organization of speech sound representation in children with and without dyslexia. University of Colorado Boulder Center to Advance Research and Training in the Social Sciences (CARTSS) Faculty Project Award. Role: PI. Funded.
- 2014 Hierarchical organization of the human auditory cortex: Evidence of a gradient for phonological grain size sensitivity. Cognitive Neuroscience Society Graduate Student Award: Role: Graduate student researcher. Funded.
- 2014 Hierarchical Organization of the human auditory cortex: The role of syllable structure and phonological grain size. Application to the NSF SBE Dissertation Improvement Grant in Linguistics. Role: Graduate student researcher. Not funded.
- 2012-2013 Joseph Levin Foundation Scholarship. Role: Graduate student researcher. Funded.
- 2009-2011 Ruth L. Kirschstein NRSA Institutional Research T32 Training Grant from the NIDCD (T32 DC009399-01A10). Role: Graduate student researcher. Funded.
- 2011 Method of reading instruction fosters processing speed and sensitivity to orthographic grain size. Northwestern University Graduate School Travel Grant (International Mind, Brain and Education Society Conference). Role: Graduate student researcher. Funded.
- 2010 Differences in the neural substrate for reading English and Chinese emerges over development Northwestern University Graduate School Travel Grant (Human Brain Mapping Conference). Role: Graduate student researcher. Funded.

**PEER-REVIEWED PUBLICATIONS (*indicates student author)
PUBLISHED OR IN PRESS**

- Wolk, L., Edwards, M. L., & Brennan, C. (2016). Phonological difficulties in children with autism: An overview. *Speech, Language and Hearing, 19*(2), 121-129.
- Brennan, C. & Booth, J. R. (2015). Large grain instruction and phonological awareness skill influence rime sensitivity, processing speed, and early decoding skill in adult L2 learners. *Reading and writing, 28*(7), 917-938.
- Cao, F., Brennan, C., & Booth, J. R. (2015). The brain adapts to orthography with experience: evidence from English and Chinese. *Developmental Science, 18*(5), 785-798.
- Wolk, L., & Brennan, C. (2013). Phonological investigation of speech sound errors in children with autism spectrum disorders. *Speech, Language and Hearing, 16*(4), 239-246.
- Brennan, C., Cao, F., Pedroarena-Leal, N., McNorgan, C., & Booth, J. R. (2013). Reading acquisition reorganizes the phonological awareness network only in alphabetic writing systems. *Human Brain Mapping, 34*(12), 3354-3368.
- Cao, F., Khalid, K., Lee, R., Brennan, C., Yang, Y., Li, K., Bolger, D.J. & Booth, J.R. (2011). Development of brain networks involved in spoken word processing of Mandarin Chinese. *NeuroImage, 57*(3), 750-759.
- Bray, D., Brennan, C., Rabe, H., and Shwarz, A. (2003). Best practices for students with autism. *Perspectives on School-Based Issues, 4*(2), 21-24.

**PEER-REVIEWED PUBLICATIONS
UNDER REVIEW OR IN PREPARATION**

- Brennan, C. & *Kiskin, J. (in preparation). Distinct benefits given large versus small grain orthographic instruction for English-speaking adults learning to read Russian Cyrillic. *Reading and Writing*.

Brennan, C. & *Newman, J. (in preparation). Compared to spoken word presentations, familiar melody presentations result in compromised novel word learning. *Language Learning*.

*Pepper, K., *Clerkin, M., *Pancoast, M., & *Miller, A., & Brennan, C. (in preparation). Age-based differences in preferences for empathetic versus factual diagnosis deliveries. *American Journal of Speech-Language Pathology*.

Brennan, C. & Booth, J.R. (in preparation). Phonological grain size selectivity in the human auditory cortex.

NON PEER-REVIEWED PUBLICATIONS PUBLISHED OR IN PRESS

Smith, A. C. M., Boyd, K. E., Brennan, C., & Charles, J. (2018). Medical management guidelines for an individual diagnosed with SMS. PRISMS. Retrieved from https://www.prisms.org/wp-content/uploads/pdf/mmg/PRISMS_Medical_Management_Guidelines2018.pdf

Brennan, C. (2008). Speech therapy ideas for school-age children with Smith-Magenis Syndrome. *Spectrum*, 12(1), 4-5.

Brennan, C. (2007). Speech therapy ideas for parents & therapists. *Spectrum*, 11(3), 11-13.

RESEARCH IN PROGRESS

*Henneman, E. & Brennan, C. (in preparation). Differential learning outcomes for large versus small grain orthographic instruction for English-speaking adults learning to read Korean-Hangul. Data collection is complete. Submission of publication to peer-reviewed journal anticipated in summer, 2019.

Brennan, C., *Vacek, L., & *Mellman, H. (in preparation). Development and skill-based differences in the relationship between reading skill and phonological grain size matching. Data collection is 50% complete. Submission of publication to peer-reviewed journal anticipated in summer, 2019.

*Weintraub, H. & Brennan, C. (in preparation). Speech and language deficits and treatment outcomes for a single child with pediatric autoimmune encephalitis. Data collection is 75% completed. Submission of publication to peer-reviewed journal in summer, 2019.

PRESENTATIONS

PEER-REVIEWED PRESENTATIONS (*indicates student presenter)

*Clerkin, C., *Pepper, K., & Brennan, C. (2018, November). Does bedside manner matter? Delivery preferences for speech & language diagnoses. American Speech-Language Hearing Association National Convention, Boston.

*Hannah, A. & Brennan, C. (2018, November). Perception of voice gender by members of the LGBT+ community. American Speech-Language Hearing Association National Convention, Boston.

*Heneman, H. & Brennan, C. (2018, November). A comparison of large versus small grain instruction for English-speaking adults learning to read Hangul. American Speech-Language Hearing Association National Convention, Boston.

*Kiskin, J. & Brennan, C. (2018, November). Learning outcomes for large versus small grain orthographic instruction in L2 learners of Russian Cyrillic. American Speech-Language Hearing Association National Convention, Boston.

*Park, Y., *Wade, K., Brennan, C., & Tennant, S. (2018, November). Trisomy 8 Mosaicism: A school-age case study in AAC intervention. American Speech-Language Hearing Association National Convention, Boston.

*Vacek, L. & Brennan, C. (2018, November). The relationship between reading & phonological skill in adults with a range of reading abilities. American Speech-Language Hearing Association National Convention, Boston.

*Weintraub, H., Tennant, S., & Brennan, C. (2018, November). A case study & review of pediatric autoimmune encephalitis, PANDAS, & ASD. American Speech-Language Hearing Association National Convention, Boston.

*Newman, J. & Brennan, C. (2017, November). Working memory: The effects of familiar melody presentation versus spoken presentation on novel word learning. American Speech-Language Hearing Association National Convention, Los Angeles, California.

*Mellman, H. & Brennan, C. (2017, November). The relationship between reading skill & performance on a phonological grain size matching task. American Speech-Language Hearing Association National Convention, Los Angeles, California.

*Heller, S. & Brennan, C. (2016, November). Large and small grain phonological detection correlates with reading skill. American Speech-Language Hearing Association National Convention, Philadelphia, Pennsylvania.

Brennan, C. & Booth, J. (2016, November). Phonological grain size sensitivity in auditory cortex is related to reading skill. American Speech-Language Hearing Association National Convention, Philadelphia, Pennsylvania.

Brennan, C. & Booth, J. (2016, June). Phonological grain size sensitivity in auditory cortex is related to reading skill. Human Brain Mapping Conference, Geneva, Switzerland.

Brennan, C. & Booth, J. (2014, April). Hierarchical organization of the human auditory cortex: Evidence of a gradient for phonological grain size sensitivity. Cognitive Neuroscience Society, Boston.

Brennan, C., Cao, F., Pedroarena-Leale, N., McNorgan, C., & Booth, J. (2012, April). Learning to read reorganizes the oral language network only in alphabetic writing systems. Cognitive Neuroscience Society, Chicago.

Brennan, C. & Booth, J. (2011, May). Method of reading instruction fosters processing speed and sensitivity to orthographic grain size. International Mind Brain Education Conference, San Diego, California.

INVITED PRESENTATIONS

Brennan, C. (2017, July). fMRI mapping of the auditory cortex related to reading experience, skill, and impairment. Frontiers in Hearing Symposium - Auditory Development and Disorders. Estes Park, Colorado.

Brennan, C. (2016, October). Neurophysiology of Dyslexia. Wyoming State Speech Language Hearing Association (WSHA) Convention, Casper, Wyoming.

Brennan, C. (2016, October). The role of the auditory cortex in speech sound processing and literacy acquisition. Ohio State Speech-language Pathologist and Educational Audiologists Consortium (OSSPEAC), Columbus, Ohio.

Brennan, C. (2016, January). Phonological grain size sensitivity in auditory cortex is related to reading skill. Institute of Cognitive Science (ICS), University of Colorado – Boulder.

Brennan, C. (2015, October). Organization of the Human Auditory Cortex: The Role of phonological grain size and syllable boundaries. MRI Users Meeting, University of Colorado – Boulder.

Brennan, C. (2014, July). The relationship between communication and behavior in children with SMS: Strategies for speech & language Intervention. PRISMS Conference, St. Louis, Missouri.

Brennan, C. (2014, July). A Talk for Teens and Adults with SMS: Communication in School, Work, and Your Social Life. PRISMS Conference, St. Louis, Missouri.

Brennan, C. (2014, March). Grain size influences reading acquisition and the neural bases of speech processing. Department of Communicative Disorders, San Francisco State University.

Brennan, C. (2013, March). Grain size influences reading acquisition and the neural bases of speech processing.

Speech Pathology, Northwestern University, Downers Grove, IL.

Brennan, C. (2012, October). Reading acquisition reorganizes the phonological awareness network only in alphabetic writing systems. Beckman Institute, University of Illinois, Champaign-Urbana.

Brennan, C. (2012, June). How addressing specific communication needs can foster more appropriate behavior: Speech therapy strategies for children and adults. PRISMS Conference, Denver, Colorado.

Brennan, C. (2012, May). Reading acquisition reorganizes the phonological awareness network only in alphabetic writing systems. Northwestern University Cognitive Brain Mapping Group.

Brennan, C. (2011, November). Method of reading instruction fosters processing speed and sensitivity to orthographic grain size. Northwestern University CSD Qualifying Research Project Defense.

Brennan, C. (2011, September). Learning to read reorganizes the oral language network only in alphabetic writing systems. Northwestern University CSD Department Data Blitz.

Brennan, C. & Van Santen, C. (2011, January). Subtypes of reading disability (dyslexia). Northwestern University CSD Department Translational Research Presentation.

Brennan, C. (2010, October). Whole brain strategies for children & adults: applying current research findings to clinical practice. Iowa State Speech-Language Hearing Association, Iowa City, Iowa.

Brennan, C. (2010, September). Developmental differences in the neural substrate for reading English and Chinese. Northwestern University CSD Department Data Blitz.

Brennan, C., Cao, F. Booth, J. (2010, June). Differences in the neural substrate for reading English and Chinese emerges over development. Human Brain Mapping Conference, Barcelona, Spain.

Brennan, C. (2009, September). Addressing communication deficits in young children with Smith-Magenis Syndrome. PRISMS Conference, Reston, Virginia.

Brennan, C. (2009, February). Apraxia vs. phonological disorders: approaches for evaluation and intervention. Virginia State Speech-Language Hearing Association Annual Convention, Richmond, Virginia

Brennan, C. (2009, January). Management of deficits in executive function: diagnostic & intervention strategies. Capernaum Pediatric Therapy, Inc., Minneapolis, Minnesota.

Brennan, C. (2008, November). Whole brain theory: applications in language intervention. American Speech Language Hearing Association National Convention, Chicago, Illinois.

Brennan, C., Wolk, L., & Edwards, M. (2008, November) Autism: integrative treatment for children with autism & phonological impairment. ASHA Annual Convention, Chicago, Illinois.

Wolk, L., Brennan, C., & Edwards, M. (2008, November). Speech production difficulties in autism: research update & clinical implications. ASHA Annual Convention, Chicago, Illinois.

Brennan, C. (2008, October). The neurology of memory: impact on language and learning in children and adults. Tennessee Association of Audiologists and Speech-Language Pathologists Annual Convention, Nashville, Tennessee.

Brennan, C. & Wolk, L. (2007, November). Speech production disorders in autism: approaches for Evaluation and Intervention. American Speech-Language Hearing Association National Convention, Boston, Massachusetts.

Burns, M. & Brennan, C. (2007, May). Autism Certification Course, Seattle, Washington.

Brennan, C. (2006, October). Whole brain theory: applications in language intervention. Tennessee Association of Audiologists and Speech-Language Pathologists Annual Convention, Nashville, Tennessee.

Brennan, C. (2006, June). Language and communication deficits in Smith-Magenis Syndrome. Symposium for

Research in Child Language Disorders, Madison, Wisconsin.

Brennan, C. (2006, November). Issues in four individuals with agenesis of the corpus callosum. American Speech-Language Hearing Association National, Miami, Florida.

Brennan, C. (2006, September). CAPD versus ADHD. Kansas State Speech Language Association Annual Convention, Wichita, Kansas.

Brennan, C. (2005, October). The neurology of memory: impact on language and learning. North Dakota State Speech-Language Hearing Association Annual Convention, Fargo, North Dakota.

Brennan, C. (2005, March). CAPD versus ADHD. Kentucky State Speech Language Association Annual Convention, Louisville, Kentucky.

Brennan, C. (2004, October). Whole brain theory: applications in language intervention. North Dakota State Speech-Language Hearing Association Annual Convention, Minot, North Dakota.

TEACHING

Assistant Professor, University of Colorado – Boulder, Department of Speech, Language, and Hearing Sciences

2015-present

- Language Disorders: School Age Children (grad)
- Clinical Counseling in Speech-Language Pathology (grad)
- Neuroanatomy and Neurophysiology of Communication (grad)
- Language Learning Disabilities (grad)
- Science of Human Communication (undergrad)
- Communication Neuroscience (undergrad)

Visiting Assistant Professor, Northwestern University, Department of Communication Sciences and Disorders

2014-2015

- Language Disorders (Assessment and Intervention) (grad)
- Clinical Assisting (Introduction to Clinical Methods) (undergrad)
- Overview of Language Disorders (grad)
- Typical and Atypical Development in Toddlers (undergrad)
- Motor Development and Learning (grad)
- Neuromotor Speech Disorders (grad)
- Evidence Based Practice (grad)
- Phonological and Articulation Disorders in Children (grad)
- Advanced Treatment of Articulation and Phonological Disorders Seminar (grad)
- Diagnostic Procedures (grad)
- The Scientific Exploration of Communication (undergrad)

Lecturer, Northern Illinois University, School of Allied Health and Communicative Disorders

2007 Introduction to Developmental Speech and Language Disorders (undergrad)

CLINICAL SUPERVISION

2004, 2006, 2008 ASHA Clinical Fellowship Supervisor

2004-2008 Northwestern University Off-Campus Clinical Supervisor (CSD)

TEACHING INTERESTS

Developmental Cognitive Neuroscience, Neuroscience of Language and Reading, Neurophysiology of Learning Disabilities, Developmental Disorders of Language and Reading, Autism Spectrum Disorders, Language Science

STUDENT RESEARCH ADVISING (+ indicates chair of thesis committee)

Doctoral Thesis Committee Member

Marcia Walsh (Ph.D. degree in SLHS anticipated in '18)

Hannah Glick (Ph.D. degree in SLHS, Behavioral Neuroscience, and Cognitive Science anticipated in '19)

Daniel Haught (Ph.D. degree in SLHS awarded in '16)

Andrew Reinberg (Ph.D. degree in Neuroscience, Cognitive Psychology awarded in '16)

Master's Thesis Committee Member

+ Katherine Bode (MA-SLP anticipated in '19)

+ Annaliese Hannah (MA-SLP anticipated in '19)

+ Katelyn Pepper (MA-SLP anticipated in '19)

+ Haley Weintraub (MA-SLP anticipated in '19)

Virginia Perng (MA-SLP anticipated in '19)

Joceyln Su (MA-SLP anticipated in '19)

+ Jennifer Kiskin (MA-SLP awarded in '18)

+ Suzanne Heller (MA-SLP awarded in '17)

+ Hannah Mellman (MA-SLP awarded in '17)

+ Jenah Newman (MA-SLP awarded in '17)

Alyssa Yee (MA-SLP awarded in '17)

Undergraduate Senior Honors Thesis Advising

+ Emily Henneman (BA in SLHS anticipated in '19)

+ Laura Vacek (BA in SLHS anticipated in '19)

Emily Valdez (BA in Psychology awarded in '17)

PROFESSIONAL AND RESEARCH AFFILIATIONS

American Speech-Language Hearing Association (ASHA)

Parents and Researchers Interested in Smith-Magenis Syndrome (PRISMS)

Human Brain Mapping (HBM)

Cognitive Neuroscience Society (CNS)

International Mind, Brain, & Education Society (IMBES)

SERVICE

Service to SLHS Department

SLHS Executive Committee (2017-present)

MA-SLP Committee (2016-present)

MA-SLP Comprehensive Exams Committee (2015-present)

MA-SLP Admissions Committee (2015-present)

Service to CU Boulder Campus

ICS (Institute of Cognitive Sciences) Executive Committee (2017-present)

SLHS representative to the College of Arts and Sciences Counsel (ASC) (2016-present)

Member of the ASC Budget Committee (2016-present)

External Service

Member of the Professional Advisory Board (PAB) for Parents and Researchers Interested in Smith-Magenis Syndrome (PRISMS) (2012-present)

Ad-hoc Reviewer

Journal Reviews

Cognition

Journal of Experimental Psychology: General

Journal of Speech, Language, and Hearing Research

Human Brain Mapping

The Journal of Experimental Psychology: General

Neuroscience

Other Ad-hoc Reviews

Plural Publishing: Book Proposal Review

Webinar: ASHA CEU Review