THE INFANT VOCAL DEVELOPMENT LAB

The Infant Vocal Development Laboratory in the Department of Communication Sciences and Disorders (Pocatello Campus), under the direction of Dr. Heather L. Ramsdell-Hudock, CCC-SLP, currently houses ground-breaking research projects to study vocal development in infants who are at risk for future speech and/or language delay or disorder. Infants at risk are those who have experienced pre- and/or perinatal problems; ear, nose, and throat problems; swallowing/ sucking problems; and/or family history of speech and/or language problems prior to 7 months of age. The research is laying the groundwork for deeper understanding of speech and language development, and may make possible the early detection of disorders to

THE NEUROSCIENCE OF SPEECH LAB

The Neuroscience of Speech Lab in the Department of Communication Sciences and Disorders at ISU (Pocatello campus) researches aspects of speech perception and production through behavioral, computational neural network modeling, and high density (128-channel) electroencephalography (EEG) paradigms.

Our current research investigates audiovisual speech integration through reaction time and accuracy measures, as well as reactions to typical and disordered speech through bio and neurophysiological measures.
The Auditory Research Lab

The Auditory Research Lab at Idaho State University houses state-of-the-art equipment used for translational auditory research projects. The main study currently underway is funded by the National Institutes of Health (NIH) to explore how age-related changes in the middle ear influence new and innovative tests of middle ear function. The NIH’s Institute on Deafness and other Communication Disorders (NIDCD) awarded the 3-year $426,000 grant in September 2014. Chris Sanford, PhD, Gabriel Bargen, PhD, and Jeff Brockett, EdD, co-investigators and faculty in the Department of Communication Sciences and Disorder at ISU. Our research focuses on 1) understanding how the brains of people who stutter plan for and execute speech through computational neural network modeling and use of high-density (128-channel) electroencephalography (EEG) recordings, 2) applying interprofessional treatment from Counselors and Speech Language Pathologists to people with fluency disorders, 3) examining how stuttering can be effectively reduced, 4) exploring send receiver dynamic through behavioral and biophysiological measures (self-report, eye-tracking, skin conductance, heart-rate, electromyographic “EMG” activity, etc), and 5) evaluating pseudostuttering for training and clinical purposes. We offer a 2-week intensive interprofessional stuttering clinic, NWCFD-IISC, the first two weeks in August. Clients from around the world come to ISU to receive interprofessional Speech Language Therapy and Counseling using Acceptance and Commitment Therapy (ACT). We also offer an annual school-aged day camp for children who stutter in the summer at our Meridian Campus. Lastly, we perform outreach by consulting with regional Speech-Language Pathologist free of charge, offering scholarships for people with fluency disorders to attend the ISU University Clinic in Pocatello, and sponsoring an annual FRIENDS of People who Stutter Winter One-Day Workshop.

THE AUDITORY RESEARCH LAB

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**THE EEG LAB**

The EEG Lab at ISU (Meridian Campus) under the direction of Dr. Diane Ogiela, uses Net Station hardware and software in combination with E-Prime software to conduct ERP studies. Currently, we are looking at N400 and P600 ERP responses to congruent vs. incongruent word-picture matches and auditorily-presented sentences in children with language impairment as well as in children with cochlear implants. We are comparing ERP data to behavioral data for receptive/expressive language.

**THE HATCH LAB**

The HATCH (Helping Adults Talk to Children) Lab on the Meridian campus is under the direction of Kristina Blaiser, PhD CCC-SLP. The lab focuses on research related to early intervention and assessment with children who are deaf/hard-of-hearing. Additionally, the lab focuses on how the integration of technology can be utilized to facilitate adult learning such as integrating tele-intervention (TT) into the delivery of early intervention services such as using telehealth technology to optimize clinical outcomes.

**CHILD LANGUAGE LAB**

The ISU-Meridian Child Language Lab, directed by Dr. Diane Ogiela, focuses on research related to school-age language development and disorders. Current projects include: a comparison of oral and written narrative skills in school-age children; studies of complex syntax used by school-age children with language impairment; SLP language assessment practices, and a grant funded EEG study of plural -s processing in children with language impairment and typical language.
THE SLAB LAB
The Scharp Language and Brain Lab (SLAB Lab) at Idaho State University is on the Pocatello campus and directed by Victoria (Tori) Scharp, Ph.D., CCC-SLP. Dr. Scharp’s academic training and interests include the cognitive-linguistic processes associated with aging and maximizing communication outcomes for adults with acquired neurogenic disorders. The SLAB Lab’s psycholinguistic research line examines how world knowledge and temporal processing cues integrate to influence event processing across the lifespan. The clinical research arm examines functional communication outcomes of clients who participate in an intensive service delivery model that provides clinical services for adults with aphasia and graduate student training.

THE AACCT LAB
Dr. Kris Brock directs the Idaho State University Assisting Adults and Children to Communicate using Technology (AACCT) Lab on the Meridian campus. Dr. Brock has extensive training with respect to cognitive psychology, human factors (the psychology, effectiveness, and efficiency of how humans interact within a system), and multimedia learning (e.g., animations). The AACCT Lab has two lines of research investigating the effects of interface displays and symbol format across various communicative outcome measures in children with developmental disabilities and stroke survivors with nonfluent aphasia. The AAC child research line focuses on using animations to enhance linguistic and operational competency outcomes in children with developmental disabilities. The AAC aphasia line investigates the effects of symbol format and interface displays on functional communication (naming through conversation with partners). Eventually, the AACCT Lab will adapt aphasia treatments to include AAC, because AAC is not a last resort therapy nor does it produce substandard outcomes when compared to natural speaking interventions.

THE BBLab
The Brain and Behavior Lab (BBLab) is a developmental neuropsycholinguistic research laboratory in the Department of Communication Sciences and Disorders at Idaho State University – Meridian, directed by Dr. Alycia Cummings, CCC-SLP. Our research focuses on the underlying mechanisms of developmental speech sound disorders and incorporates treatment techniques that can help remediate speech impairments. By recording brain activity (i.e., electroencephalogram or EEG), we are discovering how children with speech sound disorders perceive and produce speech sounds. Through our speech treatment programs, we are creating efficient and effective intervention methods.