

Georgetown University

# COGNITIVE RECOVERY LAB

Issue 2 • Summer 2018

## RECENT NEWS

We have a lot of exciting news to share with you! We have made significant progress on the two major research studies advertised in the Fall newsletter and we hope to be able to share findings with you soon.



In May, graduate student Mackenzie Fama defended her dissertation on *The Subjective Experience of Inner Speech in Aphasia*. She will begin a position this fall as Assistant Professor of speech-language pathology at Towson University in Maryland.

*Mackenzie with her two mentors, Dr. Turkeltaub and Dr. Friedman*

Two of our undergraduate research assistants graduated in May. Ayan Mandal received a Gates Scholarship to pursue a Ph.D. in psychiatry at Cambridge University in England and Rami Mizher will start medical school at Georgetown University this fall.

Lab manager Zainab Anbari is going to pursue a Graduate Certificate in Advanced Biomedical Sciences. Research assistant Maria DeGraba was accepted into a Master's of Social Work program at University of Maryland and started her new program this summer. We wish them the best in their new endeavors!

## Announcing the BUILD Study!

We are starting to recruit participants for a large NIH-funded study on language recovery after stroke. See the last page of this newsletter for more information.

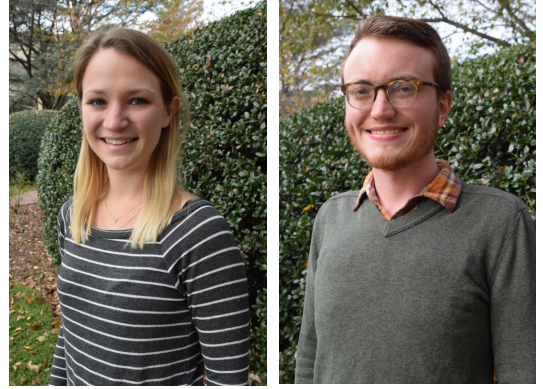
Thanks for reading!

## ALUMNI NEWS

In alumni news, prior graduate student William Hayward is finishing his first year in the MedStar Georgetown – National Institutes of Health Neurology Residency Program. Prior postdoctoral researcher Laura Skipper-Kallal welcomed a baby girl, Ruth, in January.

## WELCOMING NEW LAB MEMBERS

We have a lot of new lab members to celebrate this year. We are excited to have two new graduate students, Kelly Martin, B.A. and Viv Dickens, B.A.. Kelly is a rising 2<sup>nd</sup> year student in the Neuroscience Ph.D. program, and Viv is a rising 4<sup>th</sup> year M.D., Ph.D. student.



*Kelly (left) and Viv (right)*

Candace van der Stelt, M.S., CCC-SLP has joined as our new lab manager. She brings a wealth of clinical experience in speech-language pathology from MedStar National Rehab



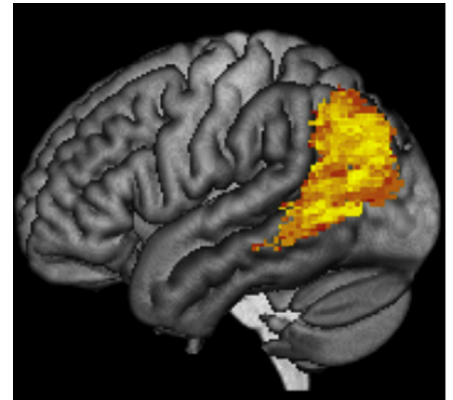
Hospital. Stephen Tranchina, B.A. and Liz Dvorak, B.S. have both joined as full-time research assistants as of this summer. Welcome!

*Candace, Stephen and Liz (respectively) are pictured at left.*

## NEW RESEARCH PUBLICATIONS

Andrew DeMarco published a paper in *Human Brain Mapping*. This paper presents new computer software that uses machine learning to map the relationship between stroke location and language or cognitive difficulties. We use this method to help us understand why people have the particular problems they do after stroke. With Andrew's paper, other researchers will be able to use this method too.

Maryam Ghaleh published a paper in *Cortex* that examines participants' knowledge of the sound combinations in language. Her results show that posterior left-hemisphere brain areas support this skill in stroke survivors and in control participants who have not suffered a stroke. Brain regions that are related to this skill are shown in yellow (*right*).



Shihui Xing, a previous visiting neurologist, published a study in *Neurorehabilitation and Neural Repair*. He mapped out a network of brain areas and connections between them that are important for word finding. We found that in stroke survivors, word finding problems relate mostly to damage in certain key white matter tracts between brain areas, not to damage in the brain areas themselves.

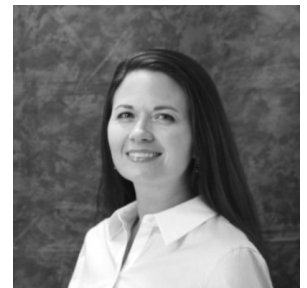
This work is only possible with the help of our participants, so we thank you for your contributions! Please email us at [crlab@georgetown.edu](mailto:crlab@georgetown.edu) if you have any questions or if you would like a copy of any of our publications.

## RECENT CONFERENCE PRESENTATIONS

Elizabeth Lacey presented a poster at the annual **MedStar Research Symposium** in Bethesda, MD in April. Mackenzie Fama gave a talk at the **Clinical Aphasiology Conference** in Austin, TX in May. Kelly Michaelis presented a poster at the annual meeting of the **Organization for Human Brain Mapping** in Singapore in June.

## CURRENT STUDIES

We have two NIH-funded studies going on in the lab and we are looking for participants. The first study (**CELIA**) uses a type of noninvasive brain stimulation called Transcranial Direct Current Stimulation (tDCS). It uses weak electrical currents on the head and has no known major side effects. This research is being done because tDCS has shown promise for improving various aspects of brain function, but there are very few good studies on whether it helps improve aphasia. The research will include tDCS, MRI, participation in computerized speech therapy, and tests of language and other abilities. Treatment can be done at your home, at MedStar NRH, or at Georgetown.

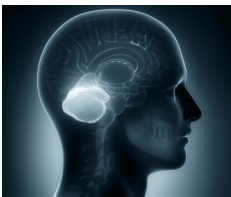


Our second study, the **BUILD** project, will begin in the Fall. Have you ever wondered why you recovered so well after your stroke? Have you wondered why you didn't recover as well as you'd hoped? Have you wondered why your strengths and weaknesses are so different from other stroke survivors you meet? In **BUILD**, we're studying whether these differences are due to the nature of your stroke and also the strength of brain structures and connections that were not affected by your stroke. By understanding these "individual differences" in language and the brain, we hope in the future to predict who will recover well and who may need extra help after their stroke. We also hope that **BUILD** will guide us toward new targets for brain stimulation treatment in the future. Participation requires just a few sessions of language testing and an MRI scan.

Please call or e-mail Dr. Elizabeth Lacey ([Elizabeth.Lacey@georgetown.edu](mailto:Elizabeth.Lacey@georgetown.edu)) if you are interested in any of our studies.

#### The CELIA study

- Mild electrical stimulation (tDCS) of the cerebellum during speech therapy
- 1 week of treatment Monday-Friday
- MRI scans and speech/language tests before and after the treatment period



#### The BUILD project

- Brain-based Understanding of Individual Language Differences after stroke
- 3-4 sessions of language testing can be done at Georgetown or at NRH
- One MRI scan (at Georgetown)
- Help us understand more about aphasia and the brain
- After the study, you will receive a report with our observations about your language abilities

Need to update your contact information with us? Let us know!

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