



# Aging Research News



THE OFFICIAL NEWSLETTER FOR RESEARCH VOLUNTEERS OF THE ADULT VOLUNTEER POOL

DEPARTMENT OF PSYCHOLOGY  
UNIVERSITY OF TORONTO

FALL - WINTER 2020-21

30TH EDITION

## Thank you to all of our research volunteers!

We would like to extend our thanks to all of our volunteers and to share with you some information about the studies you may have recently participated in. Since our humble beginnings at the start of the century, the Adult Volunteer Pool volunteer program has now grown to include over 5000 active volunteers who have participated in close to 400 different studies. Your time and commitment has been an invaluable contribution to the progress of our research.

Over the past several years, our research has focused on various aspects of cognition (e.g., memory, learning), social attitudes, and more recently, neuropsychology as people grow older. On many occasions, you have asked us about our research and the results that we have obtained. While it has often been too early for us to answer those questions definitively, we have tried to summarize some of our results in this newsletter (see reverse). We hope that this newsletter will provide you with a better understanding of our research and our department's contribution to the field of psychology, and that you will find it to be as interesting as we do.

We are continuously looking for new volunteers to participate. If you have any friends or family between the ages of 50 and 80 who would be interested in becoming research volunteers, please have them contact us. Please also call us if you have recently moved, changed phone numbers, or believe your personal information has changed. Once again, we would like to thank you and hope you enjoy this edition of our newsletter.

### Directions to the Psychology Department

- To 100 St. George St. from the St. George subway station:

Exit through the St. George St. exit (not the Bedford Rd. exit). Turn left and walk south on St. George St. past Bloor St. and Harbord St. The building will be on your right.

*Aging Research News* is designed to keep our volunteers up to date on news and research at the University of Toronto. Questions or comments can be addressed to:

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## FACULTY PROFILE

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### Dr. Morgan Barense: Memory and Perception Lab



Millions of Canadians live with brain damage that affects their memory. Acquired brain injury (e.g., from viral infection, tumor removal, epilepsy, or stroke) and Alzheimer's disease cause profound memory problems that make it hard to remember life's daily events. These memory problems can diminish one's autonomy and sense of identity, leading to a vicious cycle of social isolation and depression, which in turn hurts memory.

Digital Memory Augmentation (DMA) is a new and promising approach to lessen memory loss by harnessing advances in digital technology. Here, portable devices capture information about everyday events, allowing for later recall. DMA can produce memory benefits – more so than common strategies such as keeping a diary. However, prior DMA approaches have not been informed by our understanding of brain function and often neglect basic principles from cognitive science about how best to learn and retain information.

We have created a simple and effective DMA tool that is based on our understanding of how the brain optimally stores and retains memories. This smartphone-based app uses principles from cognitive science and neuroscience to create powerful memory cues that trigger memory for the original event. It then replays these memory cues in a manner known to optimize learning and long-term retention. Our prototype has dramatically improved memory for real-life events in healthy older adults. These memory gains lasted up to 3 months, they were superior to the gains from typical smartphone event recording, and they were accompanied by enhanced brain function.

Toward our goal of aiding memory, our future work will therefore (i) disseminate this new memory tool to people with severe memory impairments; (ii) measure the benefits for event memory and overall wellbeing; (iii) measure the brain reorganization associated with the app's use; and (iv) make the app publicly available on any modern smartphone so that its benefits can be enjoyed on a large scale.

**Do you have any feedback on your experience with us today?**

If you have any questions or concerns, please contact the Adult Volunteer Pool by phone or email (see front), or visit our website at [www.adultvolunteerpool.psych.utoronto.ca](http://www.adultvolunteerpool.psych.utoronto.ca)

