CATSS | CENTER FOR APPLIED & TRANSLATIONAL SENSORY SCIENCE

**News from the Center for Applied and Translational Sensory Science
at the University of Minnesota**

April 21, 2016

Plan now to attend the CATSS spring symposium:

Neural interfaces for sensory loss

May 19, 2016, 12:30 to 5 pm McNamara Alumni Center

Invited Speakers:

- Dr. Robert V. (Bob) Shannon, Professor of Research in Otolaryngology, Biomedical Engineering and Neuroscience, Univ. of Southern California: ***Adventures in Auditory Prostheses***

- Dr. Geoff Ghose, Associate Professor of Neuroscience, Radiology, and Psychology, University of Minnesota: ***Optimizing the behavioral efficacy of cortical stimulation for perception***

- Dr. Inyong Choi, Assistant Professor of Communication Sciences and Disorders, University of Iowa: ***Brain-computer interface operated by selective auditory attention: a neurofeedback-use scenario***

Please see schedule and register on our website: ***catss.umn.edu***
or email ***catss@umn.edu***

**The vision and mission of CATSS:
to enhance the capability and well-being of persons
living with sensory deficits
by translating fundamental scientific research
into functional and accessible devices and therapies**

CATSS member, **Aurelie Calabrese**, just finished her post-doc with Dr. Gordon Legge at the Minnesota Laboratory for Low Vision Research. Her work is focused on understanding perceptual issues related to reading with low vision.

Age-related Macular Degeneration (AMD) is the most common cause of vision loss in the industrialized world in older adults. The macula (central retina) degenerates and becomes non-functional. As a consequence, the individual perceives a black spot in the center of the visual field.
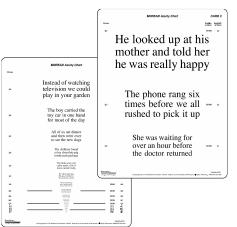

Reading with AMD

To compensate for this impairment, AMD patients have to rely on parts of their peripheral vision to substitute for the missing central vision. Their major complaint is that reading is either impossible or very slow. Indeed, even with the best optical correction and appropriate magnification, AMD patients still read more slowly than readers with normal vision. Calabrese's earlier thesis work focused on understanding the difficulties encountered by AMD patients during reading tasks by analyzing their oculomotor patterns; her long-term research goal is to develop ways to enhance or customize text displays, or alternatively modify content, in order to improve comfort and reading performance.

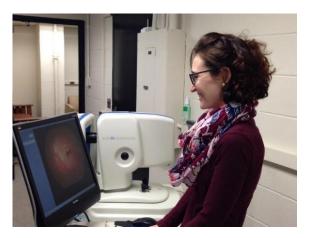### How is reading performance measured?

One major project that Calabrese has been working on involves the MNREAD acuity chart, a reading test designed here at the U of M (Mansfield et. al, 1993).

She worked on developing an application to run the test on an iPad. The automated test allows an examiner to measure reading speed as a function of print size.

Tools for Vision Research

The Microperimeter MP1 (Nidek Technologies) is used to assess the functional and anatomical visual impairment of each individual. It allows measuring the characteristics of the blind spot, including its position, size and shape, or the position of the preferred retinal location (PRL) used to fixate in periphery. All this information is useful when analyzing reading performance.

To find out more, visit CATSS (catss.umn.edu).