

FRIDAY, MARCH 1, 2013

## Gary Cottrell's TDLC is a NSF Science of Learning Center

UCSD's Temporal Dynamics of Learning Center (TDLC) is a NSF Science of Learning Center focusing on the role of time and timing in learning. TDLC had a very successful All Hands Meeting February 8&9th. Over 150 faculty, trainees, staff, and advisory board members attended the event, which was held at the San Diego Supercomputer Center. Attendees came from all 18 affiliated institutions in the US, Canada, and Australia. Mark Churchland of NYU gave the opening keynote address on The neural dynamics of movement generation. His talk attracted Philosophy Department faculty, Pat and Paul Churchland to the meeting, to see their son in action! Our other guest speaker (and TDLC Advisory Board chair) was Bruce McCandliss of Vanderbilt, who spoke on the Temporal dynamics of learning in language and literacy, and led a panel on cognitive neuroscience and education. The meeting also featured talks by four former TDLC trainees on their current research. The main goal of the meeting was to decide on new directions in research.

TDLC has developed a strong foundation in the science of learning, with several fruitful exchanges between computational models and experiments. One exciting recent development is the translation of Mike Mozer's work on spacing effects to the classroom. Spacing effects refer to the fact that spacing out study episodes is better than studying items multiple times in the same session. Mike has developed a highly accurate model of how quickly items are forgotten, depending on the spacing between study episodes. He has developed a program that predicts when a student is

about to forget an item, and schedules it for study. He has performed an experiment scheduling vocabulary items for study in a Colorado middle school Spanish class, and found that his program provides a 14% better retention rate than the standard approach. The experiment is especially strong in that it is all within subject: The same student has items scheduled for study by three different mechanisms, and the improvement is over other study schedules for the same student. This is just one example of the research being carried on at TDLC, which spans time scales from the study of spike-timing dependent plasticity - the mechanism by which synapses between brain cells are strengthened and weakened, all the way up to months and years, the scale of spacing effects. Eventually, we hope to develop the theory to connect these two very different time scales.

## CSE Alum receives NSF award

CSE Ph.D. alumna and Assistant Professor Chengmo Yang of the University of Delaware has been awarded an NSF Faculty Early Career Development (CAREER). The CAREER program is NSF's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations. Her CAREER is on the use of fine-grained adaptability in systems to cope with the higher fault rates in silicon devices. The award posting can be found at [http://nsf.gov/awardsearch/showAward?AWD\\_ID=1253733](http://nsf.gov/awardsearch/showAward?AWD_ID=1253733). Chengmo, who was advised by Alex Orailoglu, received her Ph.D. in September 2010 and joined the Electrical and Computer Engineering Department at the University of Delaware that year.



### Faculty ? GPS



#### Geoff Voelker

is currently traveling from 02/27-03/01 for a Distinguished Lecture Series talk that he will be



#### Bill Griswold

will be traveling on 03/08-03/09 to the 4th Workshop on Uniting the Californias: "Building