TDLC and the Ethics of Emerging Technologies

TDLC scientists Drs. Andrea Chiba, Janet Wiles, Pat Churchland and Terry Sejnowski were awarded a grant from the National Science Foundation to create a cross-disciplinary network of scientists and ethicists to consider the ethical use of a select set of emerging technologies for application to the science of learning, education, rehabilitation, medicine, and augmented humans.

In March 2016, they held an international symposium, TOMORROW'S WORLD: The Ethical Use of Emerging Technologies Symposium, to bring technologists, scientists, ethicists, and policymakers together to explore the most pressing issues with respect to use of these technologies for learning, rehabilitation, and teaching. The workshop was co-sponsored by the Australian Research Council, and the Centre of Excellence for the Dynamics of Language at the University of Queensland, Brisbane, Australia. The event was facilitated by Roger Bingham, Director of the UCSD Science Collaboratory and the Science Network, an online science agora. Click here for more information about the symposium, and here to view the program.

To continue the conversation, we are holding another workshop in San Diego on November 10-11, 2016 that will feature a public forum co-sponsored by the International Society for Neuroethics as a satellite event of the Annual Meeting Of the Society for Neuroscience and a workshop at UC San Diego.

Keep your eyes out for more information about this event!

Focus: Bright Minds Battling Dark Diseases

The San Diego Union-Tribune hosted "13 of San Diego's top scientists, engineers and physicians for the group photo shoot and story about "how the region is shaping President Obama's initiatives on the brain, cancer, the microbiome and precision medicine." TDLC / Salk researcher Dr. Terry Sejnowski is featured in the article. (SD U-T, 6/25/16) Read the article here

In addition, UC San Diego Chancellor Pradeep
Small Molecule Keeps New Adult Neurons From Straying, May Be Tied to Schizophrenia (The Salk Institute, 7/6/16)
Dr. Rusty Gage, TDLC investigator and Salk scientist, is a senior author of the study. More

Princess Leia brainwaves may help you learn in your sleep (New Scientist, 6/24/16)
TDLC's Dr. Terry Sejnowski discovered patterns of electrical activity that "sweet through the sleeping brain in a circular motion that resembled the headphone-like hairstyle made famous by Carrie Fisher in the Star Wars movies." More

Remembering the bold and brilliant Francis Crick (San Diego U-T, 6/4/16)
TDLC Investigators Drs. Terry Sejnowski and Fred "Rusty" Gage share memories of their time with Francis Crick at the Salk Institute. More

Could early music training help babies learn language? (UW LIFE Center, 5/12/16)
Research at UW LIFE Center (NSF Science of Learning Center) with Dr. Patricia K. Kuhl. More

Powerful Brain Signals between Seizures May Explain Memory Problems in Patients with Epilepsy (4/25/16, NYU Langone Medical Center)
TDLC investigator Dr. Gyorgy Buzsaki is co-author of the study.

Adult brain prunes branched connections of new neurons (Salk News, 5/2/16)
Salk study is first to closely follow development of new neurons in the adult brain, giving potential insight into neurodevelopmental disorders such as autism and schizophrenia (photo: Goncalves, Gage; Credit: Salk Institute)
TDLC investigator Dr. Fred Gage is a senior author of the study. Read more in Salk News Nature Neuroscience article (May 2, 2016)

25 Geniuses who are Creating the Future of Business (WIRED, 4/26/16)
Dr. Marni Bartlett (cofounder & Lead Scientist of Emotient) is featured with Rana El Kaliouby (Cofounder and Chief Strategy and Science Officer of Affective), for their face-recognition technology. Wired: "There are two scientific
Former TDLC trainee Tim Mullen: Currently Founder and CEO of Qusp!
As a Ph.D. graduate from UC San Diego in the Dept. of Cognitive Science and Institute for Neural Computation, Dr. Tim Mullen envisioned creating a company that embedded advanced neurotechnology into everyday life. And it appears that he has done just that! He recently founded a company called Qusp. As their website describes: "Qusp offers customized scientific and R&D solutions for corporate, academic, medical, government, and pharmaceutical sectors. Our expert research scientists will work with you to identify and develop advanced neurotechnology solutions for your most challenging problems."

Dr. Mullen explains, "We focus mainly on Brain Computer Interfaces and on advanced methods for neural state decoding to interpret the signals that come out of our brains, and then relate them to behavior and cognition." He helped to create Qusp to "allow anybody, anytime, anywhere to access powerful neurotechnology that comes out of laboratory environments, but to do that with very little expertise, very little domain knowledge. To be able to find out with one line of code, your attention state, your emotional state, and with a system that provides that information through the Cloud." In fact, Dr. Mullen believes that their company's API framework is the world's first platform for neural computation operating on the Cloud through a Web API interface in real time! Learn more about Qusp

TDLC Research

App promotes interaction for children on autism spectrum
(Oak Bay News, 3/29/16)
The article features the Let's Face It scrapbook app developed by TDLC's Jim Tanaka and his team at the University of Victoria's Centre for Autism Research Technology Education (CARTE). More

Meditation and the Brain: There may be a neurological basis for the benefits that many people report from meditation

A new study from Yale University suggests that the brains of experienced meditators may actually work differently than brains of those who don't meditate. The Yale team conducted fMRI scans on both experienced and beginning meditators as they practiced three different meditation techniques. The researchers found that experienced meditators had "decreased activity in areas of the brain called the default mode network,"
which has been implicated in lapses of attention and disorders such as anxiety, attention deficit and hyperactivity disorder, and even the buildup of beta amyloid plaques in Alzheimer's disease.

The results suggest that meditators may have developed a "new" default mode in which there is more present-centered awareness, and less "self"-centered.

(Reference: Yale News)