

EXPLORING THE LAST GREAT FRONTIER

UC Davis' Unique Center for Mind and Brain

BY KATE WASHINGTON

It's not every day you see a cognitive neuroscientist sitting down with His Holiness, the Dalai Lama. But that's what happened this April. Research scientist Clifford Saron, of the Center for Mind and Brain (CMB) at UC Davis, presented results from the Shamatha Project—a study of how intensive meditation affects attention, emotion and mood—to the Dalai Lama and others in Dharamsala, India, as part of a special Mind and Life Institute conference on the latest findings in attention and memory research.

For the Shamatha Project (the name means “calm abiding”), 60 study participants spent three months at retreats held at the Shambhala Mountain Center in Colorado in 2007, meditating for 8 to 10 hours daily and receiving instruction from Buddhist scholar Alan Wallace in shamatha practice and the “four immeasurables:” loving kindness, compassion, empathetic joy and equanimity.

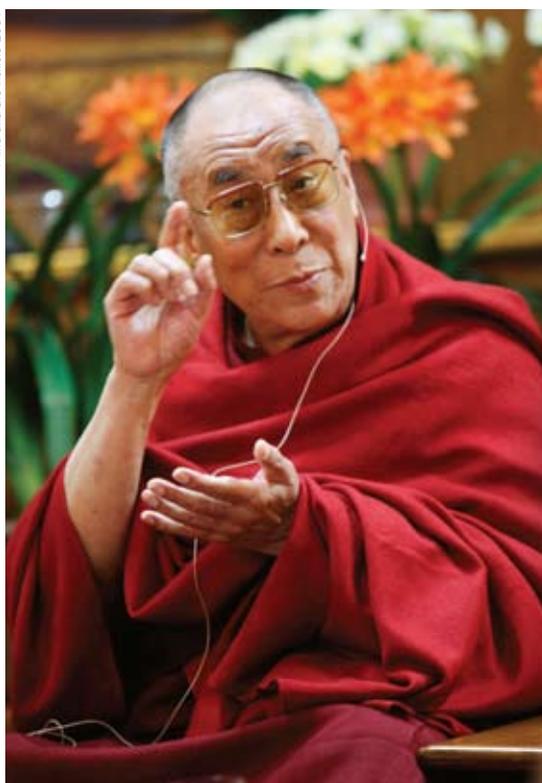
While those qualities might be immeasurable, the study participants' reactions were not. Indeed, Saron and his research team meticulously observed their reactions before, during and after the retreat through biochemical measurements, questionnaires, interviews, behavioral assessments, coded facial expressions and brain-wave analyses taken during attention-related and emotion-related tasks and meditation. The team built two state-of-the-art labs at the Shambhala Center and hooked up participants with soft white caps, bristling with wires that measure brain-wave activity; the meditators' heads looked a little like space-age hedgehogs.

The result? “These tasks generate a lot of data,” Saron said. Indeed, since the 2007 retreats, that data has been sifted, quantified and

intently examined. The study's results have not yet been published—but Saron's summary indicates that they will be striking: Early results from the Shamatha Project indicate that intensive meditation training affects both attention and emotional functioning in positive ways.

Performance on laboratory tasks showed training-related enhancements in perceptual sensitivity and the ability to sustain attentional focus and withhold habitual responses when instructed to do so. Analyses of facial expressions in response to film clips revealed increased emotional resonance with human suffering and reductions in emotions that distance people from others. Also, overall psychological functioning improved across the duration of the retreat, and these psychological benefits corresponded to improvements in performance on some cognitive tasks and biological indicators of physical health related to cellular aging. In short, repeated practice in focusing the mind and opening the heart appears to stabilize attention, promote health and well-being and lead to more compas-

sionate emotional responses. These results and others are being submitted for publication; they were also presented this summer at the meeting of the International Society for Psychoneuroimmunology and will be presented at the upcoming meeting of the Society for Neuroscience this fall.



His Holiness the Dalai Lama at the Mind and Life XVIII Conference in Dharamsala, India



AT THE HEART

Measuring the seemingly immeasurable: That paradox, whether it takes the form of studying an age-old Buddhist practice or gauging how babies understand the world, is at the heart of the Center for Mind and Brain. Founded in 2002, the CMB brings together cognitive neu-