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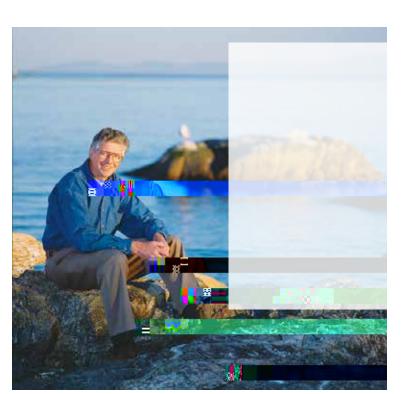
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Scientists trek to Everest to unlock mysteries of brain

B S ANNE AHEARNE

Tibetan Buddhist monks in Nepal get a lot of visitors—from trekkers to the spiritually curious. Until this summer, however, no one had ever made the trek to study their brainwaves while they were meditating.

" is study is the rst to be done at this altitude in their own temple," says UVic neuroscientist Olav Krigolson, who traveled to the Mt. Everest region with UBC-Okanagan researcher Gordon Binsted as a joint research venture to study the neural characteristics of meditation.

ough a number of studies have recorded monks' brainwaves while meditating, this study is the rst to use a large sample size of experienced monks and to work with them onlocation.

"We think that what we're nding will improve our understanding of mindfulness and meditation, and provide a level of ecological validity that's lacking in other studies of meditation done in an articial lab environment," says Krigolson, who is still analyzing the data.

Whether you call it meditation or mindfulness, there's no doubt that

humans are able to achieve a brain state during which they're happy, thoughtful and focused. "Scientists have quanti ed this, nding that deep levels of meditation are correlated with di erences in electrical signals produced by neurons," says Krigolson. "We have this evidence but no one really knows how it works." He and Binsted set out to provide more insight into what the corresponding neural activity means.

With the help of undergraduate students in Krigolson's neuroeconomics lab and an NSERC grant, they unlocked and modi ed the software of a headband-sized electroencephalography (EEG) system—a Canadian product called the "MUSE," marketed as a meditation aid—for research purposes.

One of those undergrad students, Brianna "Breezy" Beaudry was part of the research trip. "I can't really explain the experience of sitting in a room with so many holy men but it was breathtaking and made me feel overcome with emotion," she wrote about the rst testing day in the monastery in Namche Bazaar in a My UVic Life blog post about her experience.

" e colours were one of the rst

things I noticed: yellows, reds, oranges, greens and blues decorating every aspect of the room. ere was excitement and nervousness in the prayer room as we waited for our rst four senior monks to enter."

"Using a translator, we explained the experimental protocol to our rst group of monks. We were extremely fortunate to test a total of 15 senior and 10 junior monks that day, providing us with a sample size that, to the best of my knowledge, greatly surpasses any previously conducted studies involving monks."

With a total sample size of 27 monks from Namche and Tengboche monasteries, Krigolson says, "we now have a clearer picture of what's happening during meditation."

In line with previous work, preliminary ndings show increases in brain activity during meditation. Speci cally, they're seeing increased alpha activity (associated with relaxation), beta activity (associated with focus) and gamma activity (associated with increased synchronicity in the brain) during meditation as opposed to rest.

Further, they found that neural responses to visual stimuli were enhanced after focused attention

meditation. e research group had monks play a video game after rest and then after meditation.

"It's a standard test to measure general cognitive function," Krigolson says. "We found that the brainwave activity was enhanced after meditation.

eir brains were actually functioning better."

" ese preliminary ndings tell us that intentional brain training tech-

that intentional brain training techniques such as meditation may have long-lasting e ects on brain function," says Binsted.

"We don't know how much practice."

"We don't know how much practice you need to get those bene ts and how long the carry-over e ect lasts," he says. ey aren't able to determine yet how much the monks' expertise with meditating was a factor.

"We do know that changes in the brain are very rapid but we don't know that magic number yet," he says. Sudo-ku can be used to enhance, or at least maintain brain function as you get older, but, he points out, "you can't do Sudoku once and then everything will be ne. You need to do it on a regular basis. We suspect the same thing will be true with meditation." Finding out, will be part of the next study.

understanding of the consequences of sexualized violence; and focus on the supports and needs for survivors of sexualized violence.

Intervention can be as simple as challenging somebody who makes sexist remarks, to recognizing and acting when somebody is vulnerable in a social situation, or helping someone get out of a dangerous situation where they are at risk of being harmed.

Pringle, who graduated with a psychology degree in June, and Kate Lord, a second-year sociology and gender studies student, are among trainers conducting the workshops.

"It's not sensitivity training, but a leadership program and everyone has the capacity to be a leader—no matter your age or gender," says Lord.

"It's very simple, there are so manyin 1 (o maTc 0.09179 Tdo (p)5 (p78.227 -1.179 Td (i)0.t)1.8v-3 (c)4yu)0.8 (0d (. 679 Td[hfct)2 (o)-4.7 t)2 11.1 (i2r g)4 (e)

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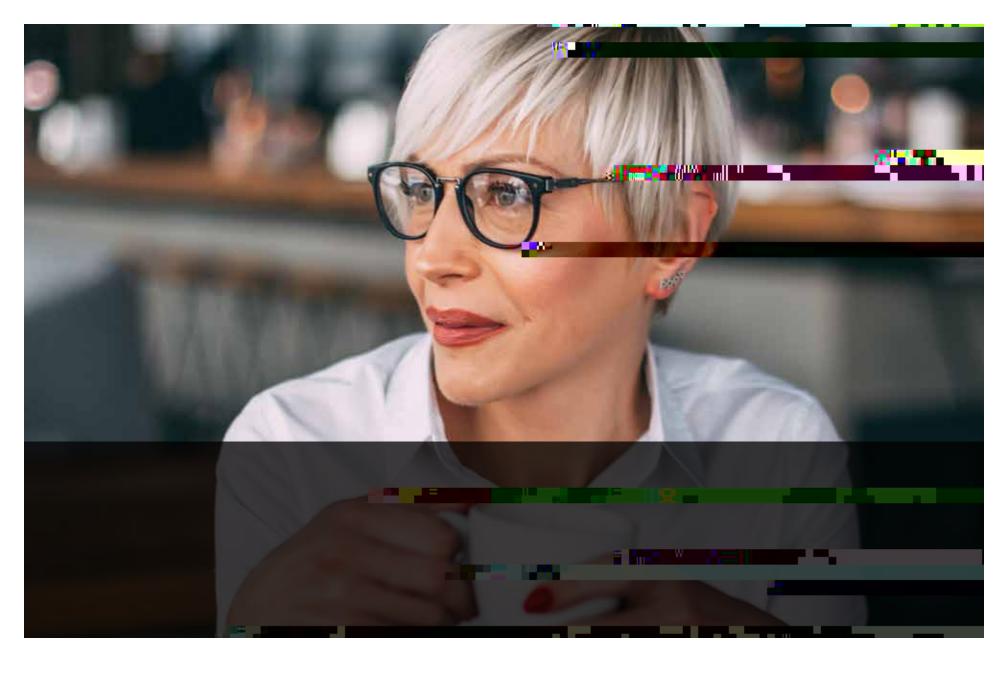
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B KA E HILDEBRAND

When asked how she felt about her invitation to volunteer on the federal task force for legalizing marijuana announced by the Government of Canada on June 30, Dr. Susan Boyd,

announced by the Government of Canada on June 30, Dr. Susan Boyd, a UVic distinguished professor with(e)1 (r)-2 (nmme)-6.8 (0 (t 656y)0.5 (t)2 F)48n fe-6 (ey)1 (n)3 Hd[ium (sand(r)5305)]





Fac I Reading Nigh fea e ina g al L na C ie Sch la hip ecipien

B JOHN HRELFALL

Even though she's now retired, beloved poet and professor Lorna Crozier continues to have an impact on campus: a highlight of the popular annual faculty reading night—happening 7 p.m. on Sept. 28 in Hickman 105—will be the announcement of the inaugural recipient of the Lorna Crozier Scholarship.

Awarded annually to a top-level, fourth-year poetry student, initial fundraising for the scholarship began at the celebration reading that marked Crozier's retirement from the writing department in 2013. Hosted by Shelagh Rogers (before she was Chancellor), that event saw past

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