



Jack Rowell

THE HEALING ARTS

Ben Blais ('15), one of the leaders of the Art for Kids program in 2012-13, works with a student at the AVA Gallery.

STOP BY THE AVA GALLERY IN LEBANON, N.H., on select Sundays throughout the year and you'll find half a dozen children from across the Upper Valley huddled in an arts studio working on craft projects with popsicle sticks, paper plates, and pipe cleaners. They laugh and talk, liberally employing both their vivid imaginations and dollops of Elmer's glue. In short, there's nothing unusual about this scenario, which is exactly the point.

For much of the time, the children in the program are unusual—some suffer from chronic illness, others struggle with disabilities or deformities—but when they're making art in AVA's Art for Kids program, they're simply children, exercising their creative muscles and focusing on what they can do, rather than what they can't. And they are led in their endeavors by some rather unconventional teachers: first- and second-year medical students from the Geisel School of Medicine at Dartmouth.

According to William E. Boyle, a professor of pediatrics and community and family medicine, emeritus, the program began in 2007 as a Schweitzer

Fellowship initiative led by second-year medical student Cindy Nu Chai ('10). An artist herself, Chai conceived the idea of Art for Kids and recruited a number of classmates to help. When she

“ART FOR KIDS IS A BEAUTIFUL EXPRESSION OF A PARTNERSHIP BETWEEN MEDICAL STUDENTS AND PATIENTS.”

approached AVA Director Bente Torjusen about partnering on the initiative, Torjusen didn't hesitate. “The timing was so wonderful,” Torjusen recalls. “We

had just completed the renovation of our building and we had two dedicated studios available for children's programming.” AVA's relative proximity to the medical school, together with its commitment to making art available to everyone, made the community gallery the perfect choice for Chai's endeavor, Torjusen notes.

The initial project was hugely successful, and the program continues to thrive today. Each year a trio of second-year medical students organizes and runs the project with assistance

from AVA arts faculty and staff from the nonprofit organization Child and Family Services' New Hampshire Partners in Health program, which identifies eligible

children and provides some funding for the initiative. The leaders for the 2012-13 academic year were Samantha Batman, Ben Blais, and Afton Chavez. All three are leaning toward a specialization in pediatrics and express great excitement for the program and the experience it offers, not only for the children but also for them. Each welcomed the break from intense studies and the opportunity to interact with the children as kids rather than as patients. “It’s important to be reminded that these kids are very capable, just like other kids,” Batman says.

The children are equally enthusiastic. “Why are you here?” Torjusen recalls asking one youngster. “To do art!” he gleefully replied. “The children come back again and again,” Torjusen observes, “and siblings are welcome too.” A child’s illness impacts the entire family, Torjusen says. Welcoming siblings to take part in the classes ensures that everyone gets attention, while the parents get a respite from caregiving. “We provide an open atmosphere and lots of positive reinforcement for all of the participants,” Torjusen notes.

“It’s a judgment-free zone,” agrees Blais. “The kids quickly discover that they’re not alone in their illnesses and can just be themselves. Art for Kids provides them with a support system without being overt.”

James Weinstein, chief executive officer and president of the Dartmouth-Hitchcock health system, and his wife, Mimi, are enthusiastic supporters of the program through the Brie Fund, a foundation they created in memory of their daughter Brieanna, a victim of childhood leukemia. “Art for Kids is a beautiful expression of a partnership between medical students and patients learning from each other,” Mimi Weinstein notes. “The medical students gain privileged access into what patients are experiencing during their treatment and, by creating art together, both benefit and become enriched in the process. The joy these classes bring is a delight to behold. John Ruskin said, ‘When love and skill work together, expect a masterpiece.’ There are many masterpieces being created at AVA Gallery!”

LORI FERGUSON



DISRUPTIONS IN NORMAL CIRCADIAN

RHYTHMS can increase susceptibility to alcohol and drug addiction—that much is known. What isn’t known is why this connection exists.

This elusive kinship between circadian function and addiction compelled two Geisel postdocs, Joshua Gamsby and Danielle Gulick, to explore how two key genes involved in regulating circadian rhythms affect alcohol consumption.

Working in the lab of Jay Dunlap and Jennifer Loros, who are both professors of genetics and of biochemistry at Geisel, Gamsby and Gulick compared male and female mice with mutated versions of the genes *Per1* and *Per2* to normal mice without the mutations. They used the mice to study how these mutations affected alcohol consumption, reinforcement, and metabolism between groups.

“*Per* mutant mice do not mind the taste of alcohol,” Gamsby says. “Essentially, they are little binge drinkers.” Mice without *Per* mutations drink at significantly lower levels.

He and Gulick observed that all mice with mutations in *Per1* or *Per2* found alcohol more rewarding. But among males, only those with *Per1* gene mutations had significantly higher blood alcohol levels than normal mice, whereas all female mice did regardless of whether the mutation was to *Per1* or *Per2*. The female mice with the mutations also drank more at all concentrations than did males with the mutations.

“The finding that the *Per* mutant mice drink more than normal mice was not

surprising,” Gamsby notes. “However, discovering that this phenomenon might be due to changes in alcohol reward and in part to changes in how alcohol is metabolized was surprising.”

From a basic science perspective this is an exciting development. Physiologically, the circadian clock governs the timing of metabolism, body temperature, and the sleep-wake cycle. Disruptions in these functions are associated with a wide variety of physical, mental, and emotional disorders, including substance abuse and dependence. Gamsby points out, however, that the question remains whether the effects on alcohol consumption are due to changes in the circadian clock generally or specifically to mutations in the *Per* genes.

The temptation to apply findings such as these to human behavior is difficult to resist, but while there are implications for further understanding alcoholism, Gamsby cautions that there is much more to learn. “This study is a starting point for how *Per* genes are related to alcohol reinforcement” he says. “Before we can develop treatments targeting this connection, we must have a better understanding of the biology behind it.”

Now adjunct faculty at the University of South Florida Morsani College of Medicine, Gamsby and Gulick are continuing their research into the relationship between alcohol consumption and changes in the circadian clock.

SUSAN GREEN