**Anesthesia and the Brain**

“Watch what happens,” Emery Brown, AB ’78, AM ’84, MD ’87, PhD ’88, says as he plays a video of brain wave recordings, using electroencephalography, from one of his patients starting to receive anesthesia at Massachusetts General Hospital. “You’re going to see when the drug starts to work. Boom. See those small, regular oscillations? The patient is becoming sedated. And now these big oscillations come on, and the patient becomes unconscious.”

Brown, an anesthesiologist, statistician, and neuroscientist with endowed professorships at Harvard Medical School and MIT, studies how anesthetics work in the brain. His pioneering research holds promise for improving the delivery and safety of general anesthesia and for developing new ways to create, monitor, and control the state of general anesthesia.

**In the News**

**Sporadic Alzheimer’s in a Dish**

HMS geneticists have created a new model-in-a-dish of sporadic Alzheimer’s disease, which accounts for more than 90 percent of cases and tends to strike people without a family history of the disease. This could lead to drugs for preventing or reversing the effects of Alzheimer’s.

**Connecting Environment to Neurologic Diseases**

Investigators at HMS and Brigham and Women’s Hospital have developed an approach to systematically and simultaneously evaluate the effects of hundreds of environmental factors on the development of neurological diseases.

**Brain Expansion**

Over the past two years, a team composed of biologists, microscopists, physicists, and computer scientists worked together to capture and analyze images of sections of mouse cortex and entire fruit fly brains, which could ultimately help scientists better understand diseases of the brain.