Alan I. Green, M.D.: “Glee” club

By Jennifer Durgin

During the 1980s, when Alan Green was a medical student at Johns Hopkins University, he and others were working on a traumatic treatment for heroin addiction: a drug that would later become known as naltrexone.

Green, now chair of the Department of Psychiatry at Dartmouth, has been working on the biological basis of psychosis and the optimal treatment for severe mental illness. And he fell in love with a line of research that has led to some key discoveries about schizophrenia and what’s known as the brain reward circuitry.

In 2002, Green left MHMC and Harvard to become chair of the Department of Psychiatry at Dartmouth. He decided to take “the opportunity to create something of real greatness,” he says. “The ingredients were all here. This is a wonderful department of psychiatry. . . . and it has this ability to influence the care of people in a whole region. . . . The care in Boston is more Balkanized.”

Green points to a sprawling chart showing all the connections that DSM’s psychiatry department has with research groups and health-care institutions, both at Dartmouth and throughout the region. Members of the department’s faculty care for patients at DHMC, as well as at the VA Medical Center in White River Junction, Vt.; at the state Hampshire, and Massachusetts—as well as research collaborations with numerous institutions throughout the country.

“Although the majority of the faculty in the department are some of the nation’s top experts in co-occurring disorders (the combination of a severe mental illness with a substance-abuse disorder); posttraumatic stress disorder; paranoia; dreams and sleep disorders; and the effects of clozapine,” he says. “Green now does his own research ‘around the edges,’ as he puts it. ‘It’s been possible for me to have a large administrative job and continue to do research . . . because I have a number of terrific people to help me’

“The man loves his work,” says a colleague, who recalls Green “giggling with glee” about the results of his study.

The lab for the next three years. After medical school and a year of internship at Beth Israel Hospital, he took a research position at the National Institute of Mental Health, studying how morphine affects the brain. Then, in 1971, President Nixon’s drug czar, Dr. Jerome Jaffe, recruited Green as his personal assistant. It wasn’t long before Jaffe had promoted Green to be the director of biomedical research with Nixon’s Special Action Office for Drug Abuse Prevention. A primary focus of the office was to develop a treatment for heroin addiction, a major problem among soldiers serving in Vietnam. Green worked with private companies to develop various narcotic antagonists, and one of these drugs, naltrexone, eventually made it to market and is now used to treat alcoholism, too.

When Green returned to Boston to start his psychiatry residency at the Harvard-affiliated Massachusetts Mental Health Center (MMHC), it seemed as if he was on the fast track to an ambitious career as a physician-researcher. And then he got sick.

For six and a half years, his life was on hold. Now, when Green talks about that time, it’s as if it were just another milepost in the course of his life. Such an experience might have stymied, or at least dampened, the ambition of many people, but not Green.

“Many love his work,” says Mary Brunette, an associate professor of psychiatry at Dartmouth and medical director for the New Hampshire Bureau of Behavioral Health. Brunette recalls one of the first times she met Green. He was sitting in front of a computer and “giggling with glee about the results of his study,” she says. He called her over and said, “Look at these data!”

Green is energy and passion for research have served him well. Once he was able to return to MMHC to finish his residency, his career took off again. He spent the next 20 years there, in various clinical, research, and leadership roles at MMHC’s Commonwealth Research Center, whose mission is to “study research on the biological basis of psychosis and the optimal treatment for severe mental illness.” And he fell in love with a line of research that has led to some key discoveries about schizophrenia and what’s known as the brain reward circuitry.

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Green’s primary research interest has been a drug called clozapine, a highly effective but also highly toxic treatment for schizophrenia. Clozapine was studied in the late 1960s and early 1970s, Green explains, but was taken off the market because of its side effects. Then

Green has seen both ups and downs in his life. Now recognized internationally for his research on schizophrenia, he spent five years in the 1970s in ill he was bedridden.

Jennifer Durgin has been a member of the staff of Dartmouth Medicine since 2004 and was recently promoted to associate editor.

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Green or his doctors, CMV

Virus (CMV) infection. Most

ill with a systemic cytomegalovirus (CMV) infection. Most

students at Milton (Mass.) Academy.

Musical interests: Plays the piano and guitar.

What he did while he was bedridden: Listened to baseball games; wrote a novel about a scientist who gets sick; and read a lot, including novels by Charles Dickens and William Makepeace Thackeray and books “about people . . . confined against their will,” such as Thomas Mann’s Magic Mountain.

“That man loves his work,” says a colleague, who recalls Green “giggling with glee” about some study data.
addiction. Drake shared with Green some data that he had on patients with schizophrenia who had taken clozapine.

“We looked back and found that, in fact, those who had been put on clozapine had a dramatic decrease in alcohol abuse compared to those who hadn’t,” observes Green. Those initial findings led him to pursue a whole series of studies about clozapine, which, in turn, helped him to piece together his central theory about schizophrenia and substance abuse.

“Schizophrenia itself,” he explains, “is a disorder that is associated with certain brain abnormalities... in the area of the brain that, among other things, regulates brain reward circuitry—the [system] that perhaps allows us to appreciate things in the world.

“Drugs of abuse all work through this circuit,” Green continues. “Maybe the circuit is faulty in people with schizophrenia... and the drugs of abuse may make them transiently better even though, over time, it makes the disease much worse.”

For the past several years, Green has been exploring this theory by doing brain-imaging studies. At the same time, he and his lab have been “trying to take clozapine apart,” he explains, “take the pharmacologic actions of the drug apart and then add them back together to see if we can create a clozapine-like drug [that] would be safer.”

When Green reflects on his career, he chuckles at how his interests have come full circle. It was seeing patients who had experienced bad reactions to illicit drugs that first sparked his interest in the inner workings of the brain. Then, he muses, “I had nothing to do with substance abuse for years. And before you know it, I’m back in the field of substance abuse.”

Although his research interests may have followed a circuitous path, his compassion for people with chronic mental illness has been constant—in part because of his own struggle to get well. “I had a chronic illness... and I didn’t know whether I was going to get better,” he recalls.

But fortunately for him—and for those who suffer from schizophrenia and addictions—he did.