



JOHN BRAVMAN: LIFE IS WHAT HAPPENS WHEN YOU PLAN

by Alan S. Brown

This series explores what it means to be a leader through the lives of member engineers who attained leadership positions in their fields.

JOHN C. BRAVMAN, Ph.D.
CALIFORNIA GAMMA '79
**PRESIDENT, BUCKNELL
UNIVERSITY**

Six months ago, John Bravman, president of Bucknell University, was contemplating how to invest the \$513 million his school had raised. It was a mind-boggling sum for a college with only 3,600 undergraduates and no graduate programs.

Despite its size and rural Pennsylvania location, Bucknell is one of the nation's top liberal arts schools and an engineering powerhouse. Among engineering schools without Ph.D. programs, *U.S. News & Review* ranks it sixth overall and first in biomedical, second in civil, third

in computer and electrical, and fourth in mechanical engineering.

Bravman's team had ambitious plans: new buildings, added faculty to reduce faculty teaching load, investments in sustainable systems, a new college of business management, and more scholarships and loans to make the school's hefty \$70,000 price tag affordable to a wider range of students.

COVID-19 CHANGED EVERYTHING

Bucknell, like many schools, was on spring break when cases started mounting. "It was clear that there was no way this was blowing over in a week," Bravman said. He decided to close the school and pivot to online learning.

"It was not a popular decision with anybody, especially the students and their parents," he recalled. "They said, 'other schools are just sending students home for an extra week and you just canceled our term.' It was tough to tell the board we needed to do this, but we all knew this was the right thing to do."

Within days, Bucknell's IT department had trained the school's professors to put their courses online. Yet, the new pandemic reality forced Bravman to grapple with how to deliver on what he calls "the Bucknell promise."

"At Bucknell," he explains, "we have a 9:1 student-to-faculty ratio and small classes. This allows us to do what we want to do best, which is educate our students in a highly personalized way."

“Online courses are okay if you’re sitting in a class of 300 students because there’s little advantage to being there physically, right? But if you’re in a small class, you lose a lot of its advantages, and that’s what we had to give up.”

To keep Bucknell’s promise, Bravman wants to reopen campus. Yet, his team is struggling with how to do it safely. After all, he notes, only the armed service academies can truly dictate student behavior once they return to residence halls. His students may feel they are invincible, while faculty and staff—some older or immunocompromised—worry about contracting the virus.

It is a difficult balancing act. In just 10 weeks, Bravman said his hair turned white and he lost 23 pounds. The pandemic’s sudden onslaught seemed to justify one of Bravman’s favorite phrases: “Life is what happens when you plan.”

THE ROAD TO STANFORD

Bravman arrived at Bucknell in 2010, after 35 years at Stanford University as a student, professor, and administrator. Not a bad run for someone who almost flunked out of his sophomore year.

Bravman was born in Queens Village, a middle-class enclave on the outer edge of New York City. His father was a

quick enough study to teach radio field repair during World War II, learning each lesson at night and demonstrating it to soldiers the next day. After the war, he earned an accounting certificate at night.

Bravman, one of three children, walked to the local school and came home for lunch. He and his friends biked all over the city and in the summers they piled in the family sedan and headed to the beach. His father sparked an interest in science, which Bravman sated by checking out 10 library books at a time on topics ranging from astronomy and science to engineering.

At home, he had a big chemistry set and liked to blow things up. One time, he and his friends dug a hole, dropped in a container of gasoline, covered it up, and lit a fuse. “We blew a hole three feet down and three feet wide,” he recalled. “Let’s just say my parents were not pleased.”

When he was 11, the family moved to a suburban town, Smithtown (NY). There, he discovered sports, especially softball and frisbee, while continuing to tinker with old TVs and anything with a motor.

He was hooked on engineering and planned to apply to MIT. “I was a New



THE PROFILE

NAME: John C. Bravman

CURRENT POSITION: President, Bucknell University, 2010-present.

BIRTHPLACE: NYC, New York, 1957.

HIGHEST DEGREE: Ph.D., Materials Science and Engineering, Stanford University, 1984.

MAJOR CAREER HIGHLIGHTS: Stanford University, rising from assistant to Bing Centennial Professor of Materials Science & Engineering, 1985-2010; Senior Associate Dean, School of Engineering, 1993-2001; Chair, Materials Science & Engineering Dept., 1996-99; Dean, Freshman/Sophomore College, 1999-2010; Freeman-Thornton Vice Provost for Undergraduate Education, 1999-2010; President, Bucknell University, 2010-present.

BOARD MEMBERSHIPS: President, Materials Research Society, 1994; Director, Geisinger Health System, 2012-present; Chair, Geisinger Health System, 2016-present.

HONORS: Eight Stanford University teaching awards, including the Walter J. Gores Award for Excellence in Teaching, Stanford’s highest teaching honor, and the Bing Centennial Professorship. He also received the Kenneth M. Cuthbertson Award for Exceptional Contributions to Stanford University.

GREATEST ACCOMPLISHMENT: Rising from a first-generation college student to university president.

FAMILY: Wendy Wright, wife, 2005. He has four children (including two from a previous marriage) Christopher, Matthew, Cole, and Cooper.

LEADER MOST ADMIRER: Winston Churchill, who never gave up, was indefatigable, principled, and saved his nation against all odds.

HOBBIES: Reading widely in history, current events, and classic literature; cooking; wine; music ranging from classical to jazz to rock; and, when he gets time, golf.



Bravman stands with former U.S. Secretary of State Madeleine K. Albright (left), Bucknell’s 2019 Commencement keynote speaker; and his wife Wendelin Wright, Ph.D., P.E., CA G ’98, a professor of mechanical and chemical engineering at Bucknell.

York nerd, and that's what you did," he said. "But one of my best friends had vacationed in California and came with tales of what could only be described as a religious experience of walking among redwoods in the fog and this heaven on earth called Stanford."

The two friends applied to MIT and Stanford. Then life happened—MIT chose his friend and Stanford picked Bravman.

"It was a land of milk and honey and sun 365 days per year," he said. "It was also a land where freshman drove Porsches. I was receiving financial aid and couldn't go to McDonald's to buy a hamburger. It was just in your face, the type of wealth you see in movies."

Bravman fit in socially and had a strong work ethic, but he was not prepared for Stanford's academic demands. By the end of his freshman year, he was hanging on by a thread.

"Then I did something really smart and joined a fraternity," he said. "I was struggling. It was hard. I never had to study in high school. That doesn't work in college, especially in the Stanfords of the

world, and especially in engineering."

In his sophomore year, Bravman received the type of letter he would later send to students when he was vice provost of student affairs, the one that starts, "Your academic performance has come to our attention."

He realized he did not want to leave. Fortunately, Stanford was more encouraging than harsh, and his advisor really cared about him. This gave him the confidence to build the study skills he needed to succeed.

Still, he continued to struggle in electrical engineering, a competitive and growing department as nearby Silicon Valley began to take off. Then, in the spring of his sophomore year, he took an introduction to materials science class to fulfill an engineering breadth requirement. Again, life changed his plans.

"Materials science was more like physics," he said. "It seemed more conceptual, which I liked. Plus, my professor, Robert Sinclair, was very approachable as a human being. I fell in love with the subject and switched my major before the term was over. The next semester,

I aced a really, really tough class on crystallography and atomic structure. If he had been a different man or I had not stumbled into that class, I would not be here today."

Bravman came away from his undergraduate days with a new set of values, including compassion for students with academic difficulties, the importance of hard work, the make-or-break power of financial aid, and the value of strong mentor relationships. These values set his course as a professor and, very quickly, an administrator.

ADMINISTRATION

As he neared graduation, Bravman planned to spend a year getting a master's degree and then go to work. Sinclair, however, noted that he would have to pay for his master's degree but that doctoral students were subsidized. Bravman changed course. He flunked his qualifying exam, but he retook it and passed. He emerged five years later with a Ph.D. in materials science and engineering, focusing on thin film integrated circuits.

During those years, Bravman had to teach classes. At first, he was shy, but learned to become a better public speaker. He went on to win several Stanford teaching awards, including Stanford's coveted Walter J. Gores Award for Excellence in Teaching, as well as a national award for teaching. Part of his success came from letting the boy who blew a hole in his parents' backyard show through. Bravman did a live demonstration for almost every class. Some were prosaic, like turning two slabs of silicon into a transistor. Others failed, sometimes spectacularly. Some, like etching silicon dioxide with hydrofluoric acid, were dangerous.

"I must have been crazy to think I could do that in a classroom," he said. "I probably would be fired for doing that today. But, I loved the tinkering and the students loved it too. Even as I became more involved in administration, I insisted on teaching to stay connected with the students."

Bravman believes his innate desire for order made him an administrator. When he was four, he wandered away from his parents in a store. When



Bravman speaks at Stanford University Convocation.



Cole, Wendy, Cooper, and John — 2017 Christmas card.

his parents finally found him, he had crawled into the bottom shelf, rearranging bars of soap by manufacturer.

“I just like things being stacked up,” he said. “It seemed like a better way to run the world. Since then, I have learned this works well in some places and terribly in others.”

Within eight years, Bravman, now an associate professor, had become associate chair of the materials department and senior associate dean of the school of engineering. In between, he was named associate dean for undergraduate affairs. He was named a full professor in 1995 after five years and was soon appointed chair of the materials department. On the same day in 1999, Stanford named him dean of the freshman/sophomore college and vice provost for undergraduate education.

He started the freshman/sophomore college by talking the administration into letting him turn a house across from some of Stanford’s dorms into his residence. His home soon became the center of a vibrant community.

The vice provost job grew out of a year-long study on how to address Stanford’s shortcomings in undergraduate education. The position involved fundraising. As long as Bravman was talking about

something he really loved—Stanford—it proved easy. “Just wind me up, put me in front of a crowd, and let me talk,” he quipped.

In 2010, Bravman turned 53. He had served 10 years as vice provost and been at Stanford for 35 years.

“So, I asked myself, ‘What’s the thing I haven’t done?’” he said. “I haven’t stepped out of my comfort zone. Of course, no one would have expected me to join a fraternity when I was 18 or lecture when I was so stage shy. But that was nothing compared to leaving the mothership.”

Bravman combined a fine record of research, administration, and fundraising and had founded an undergraduate college. This combination of factors drew Bucknell to him. A half-hour meeting with Ken Freeman, chair of Bucknell’s board of trustees and CEO of Quest Diagnostics, turned into a three-hour conversation.

Afterwards, Bravman drove home and told his wife, “Maybe our lives just changed.” A few months later, Bucknell’s trustees selected him as the school’s 17th president.

Bravman felt prepared. Others have described a university president’s job as running a company and being a mayor

at the same time. This is because shared governance—building consensus among students, parents, alumni, faculty, trustees, and townspeople—is an academic tradition that often works better in theory than in practice.

“None of these groups are aligned within themselves and sometimes there is open hostility between them, such as the classic case of faculty who don’t like sports and townies who do, but hate students,” he said.

At the same time, university presidents are under increasing pressure as the number of college-aged students declines and schools face a problematic financial future. When Bravman joined Bucknell in 2010, the average tenure of a university president was 10 years—now, it is just over five years.

The COVID-19 pandemic is sure to intensify those pressures going forward. While schools have discovered many ways to cut costs, Bravman will not embrace them if it means renegeing on the Bucknell promise.

Bravman’s plan—despite the pandemic—is to find a way to continue to provide small, intimate gatherings of faculty and students, a great residential experience, deep provision of services, rich recreational opportunities—one in five students is an NCAA Division I athlete—and financial aid to students who need it. Even if life happens while he is planning it.



ALAN S. BROWN has written broadly about engineering, technology, and science for more than 30 years. He is a board member of Science Writers in New York, a writer for The Kavli

Foundation, and a former senior editor of ASME’s *Mechanical Engineering* magazine, and contributes to a wide range of publications. He graduated New College at Hofstra University *magna cum laude* in 1974 and can be reached at insight01@verizon.net