Their backgrounds differ and so do their plans, but engineering alumni Douglas Gabauer, Johanna Kline-Kim and Michael Muhlbaier have one thing in common: they are among nearly 900 students who have graduated in the first 10 Rowan College of Engineering classes and benefited from the investment made in then-Glassboro State College by South Jersey entrepreneur, businessman and philanthropist Henry Rowan and his late wife, Betty.

Today, thanks to the Rowans’ astounding generosity and the resulting first-class education, the three young Engineering graduates are pursuing professional dreams for which that education solidly prepared them.

Gabauer is an assistant professor in the Department of Civil and Environmental engineering at Bucknell University, Lewisburg, Pa. Kline-Kim, an M.D., is a third-year family medicine resident at Underwood-Memorial Hospital in Woodbury. And Muhlbaier is president of Spaghetti Engineering, a West Berlin firm that designs and manufactures high-performance products for the automotive aftermarket.

The story behind how these engineering alumni—and the hundreds of others—got where they are today starts with what led to establishing the College.

CREATING A COLLEGE

Many people in the Garden State, in philanthropy circles and in higher education marveled at the story when it came to be in 1992. The founder, president and CEO of Burlington County-based Inductotherm Industries Inc. thought there was a market for an engineering school in New Jersey. So, he pledged $100 million to the small state college with few caveats: offer scholarships to the children of Inductotherm employees and create that engineering school.

Glassboro State did just that—and much more—with the gift from the Massachusetts Institute of Technology alumnus, which at that time was the largest contribution ever made to a public institution. And although it wasn’t something Rowan asked for, today the school bears his name.

“I was interested in having an engineering education institution in South Jersey, which I think it needed,” said Rowan, who credited Philip Tumminia, then vice president for Institutional Advancement, for persuasiveness in soliciting his contribution.

And while many know of the gift, not everyone may know the bottom line. But Gabauer, Kline-Kim and Muhlbaier do.
“In addition to a strong engineering background, I left Rowan having been exposed to an enormous variety of effective, student-centered teaching styles and techniques,” said Gabauer, a Lewisburg, Pa., resident who earned a civil engineering B.S. in 2001 and a civil engineering M.S. in 2003. “This exposure has proved absolutely invaluable, and I use a myriad of these techniques to better engage the students in my classes and help them build new knowledge.”

Kline-Kim, of Cherry Hill, decided in her junior year to become a physician. A 2003 graduate with a chemical engineering B.S., she believes Rowan prepared her to follow her dream by encouraging collaboration; developing her communication and presentation skills; and increasing her ability to think critically, logically and creatively at the same time to solve any problem. “In Rowan Engineering, I constantly worked on projects with other professionals from chemical...to electrical engineers,” she said. “(There), the importance of being able to communicate an idea clearly and concisely so that others understand the thought process was evident.”

Muhlbaier, of Blackwood, who graduated in 2004 with an electrical engineering B.S. and in 2006 with an electrical engineering M.S., said, “I pride myself on being a graduate of the best engineering school in the area. Rowan not only prepared me to start a business through engineering clinics, it also helped me start the business through courses like new venture developments and entrepreneurial grant programs. Rowan’s engineering college is structured to build multidisciplinary skills, teach creative thinking and encourage entrepreneurship, allowing students like me to turn an idea into a business.”

Perhaps College of Engineering Dean Dianne Dorland summed things up best: “We deliver tomorrow’s education today.”

**UNIQUE FROM THE START**

The College headed in the right direction from the beginning when then-Rowan President Herman James, members of the science and math faculties and others worked with a national advisory council to develop the vision for the college.

That vision made sure that the education this alumni trio applauds was unique from the start, when in 1996 the school welcomed into its ambitious programs 102 students. That number, three dozen or so more than anticipated, included many who had declined hard-won seats in long-established colleges.

While most engineering programs introduce their students to hands-on projects in their junior year, Rowan students tackle them in their first freshman semester. “This reflects our belief that the best way to learn is by doing,” said Dorland.

The most visible form of that learning by doing is the eight semesters of clinics that Muhlbaier praised, clinics patterned loosely after the medical school model. During freshman year, students focus on introductory skills, including reverse engineering—taking an object apart to see how it works in order to duplicate or enhance the object. In their sophomore year, they get more of the cross-disciplinary training Rowan Engineering prides itself on—projects that stress technical writing and public speaking. During their junior and senior years, students participate in real-world, interdisciplinary team projects that feature joint ventures with industry partners.

While the clinics reflect Rowan’s approach to a hands-on, minds-on education, they also stand out for focusing on multidisciplinary teamwork that mimics the professional environment, emphasizing the need
for exceptional communication skills and promoting entrepreneurial potential for those so inclined.

**EDUCATING GLOBAL ENGINEERS**

One person in at the start was chemical engineering professor Zenaida Otero Gephardt. Then a member of the mathematics department, Gephardt served as director of engineering and assistant dean of the new school. She developed curricula, chaired the search committees for the founding dean and program chairs, among others, and wrote the documentation required to establish the new school.

“The goal was to develop engineering curricula that would serve to educate global engineers for the future,” Gephardt said. “We succeeded in including elements that are essential for students to be successful contributors to the engineering profession and the global community.”

The dean Gephardt and others recruited to lead the nascent program was James Tracey, who came to Rowan in fall 1994 from his position as director of research for the College of Science and Engineering at the University of Texas at San Antonio.

Tracey retired from Rowan in 2000 after witnessing the first class graduate. Today, he still speaks of the College with great pride and calls his time here the “crowning point” of his professional career.

“The most important part of building the Rowan Engineering program was attracting the best people, faculty and students,” Tracey said of the formation of the new school. “The first order of business was to recruit the four program chairs (T.R. Chandrupatla, Ralph Alan Dusseau, John Schmalzel and C. Stewart Slater). They were key in developing the program to the point where it is now.”

Said Rowan President Donald Farish, “Rowan’s College of Engineering has been gifted with faculty and staff who are second to none. While the program in and of itself is first-rate, the College never could have been as successful as it is without the right people teaching, leading the research and working side by side with our students.”

**IN AND OUT OF ROWAN HALL**

Rowan Engineering’s outstanding points are diverse and many.

Visit Rowan Hall classrooms and labs or the dozen labs for sponsored research in the South Jersey Technology Park a mile or so down Route 322 in neighboring Mantua Township.

Stop in at scores of business and government offices scattered throughout the Delaware Valley and New Jersey.

Leaf through photos from trips to The Gambia, India or Thailand.

Talk with K-12 students and teachers who participate in Rowan Engineering outreach efforts.

Of those activities provides a snapshot of what the College of Engineering offers.

On any given day, classes learn textbook examples of engineering fundamentals and labs are filled with students conducting experiments on topics such as solar heating. Undergraduate and graduate students work side by side with professors who themselves graduated from some of the most highly regarded engineering programs in the country. The youngest students often use equipment—such as an environmental chamber for hologram production—and work on projects—like Alzheimer’s research—that freshmen and sophomores at other colleges and universities can’t even dream of approaching until they’re in a master’s program.

“I’m just delighted with the engineering curriculum and the capabilities of the students,” said Henry Rowan, who noted the hands-on education and the attention of faculty to students as highlights of the College.

Delighted, too, is senior chemical engineering major Kathryn Whitaker of Iselin, president of the Rowan chapter of engineering honor society Tau Beta Pi. “The small classes provide students and faculty the opportunity to get to know one another personally and work on an individual basis,” Whitaker said. “The faculty members always encourage us to come to them outside of class for help in any course, regardless of who is teaching it.

“In addition to our core classes, the program emphasizes both written and oral communication skills, which are essential to being a successful engineer,” she said. “I took those parts of the curriculum for granted until I talked to students in chemical engineering programs at other universities and realized that they were not given the opportunities to practice those skills, especially in regard to technical presentations.”

At the South Jersey Technology Park, among teams working on projects in several engineering disciplines, professor Peter Jansson conducts research on alterna-
Without Borders-USA. Working on Environment, known as a CAVE®, for water and road projects for villages during their undergraduate career, and Rowan engineering students regularly death and possibly saving lives.

Rohrer College of Business Incubator at conducting virtual reality research in a outreach director. "We are educating organizations are a major draw for our extraordinary relationships with General Electric and the Navy. A few students have had as many as three internships during their undergraduate career, and some of those internships turn into full-time employment upon graduation. Throughout the region and beyond, Rowan engineering students regularly land internships during the school year and during the summer with companies and organizations such as DuPont, General Electric and the Navy. A few students have had as many as three internships during their undergraduate career, and some of those internships turn into full-time employment upon graduation. "Our internship program and indeed our extraordinary relationships with so many companies and government organizations are a major draw for our students," said Melanie Basantis, outreach director. "We are educating tomorrow's engineers, and we are preparing them to enter appropriate career paths when they graduate."

Since 2003, students and faculty teams have been traveling to developing countries as part of Engineers Without Borders-USA. Working on water and road projects for villages and towns in Central America, Africa and Asia, the students have conducted preliminary research at Rowan before going into the field in lands about which most of them have only read. Their EWB work has helped the students expand their technical skills, exposed them to different people and countries and enabled them to make a potentially huge difference in the lives and lifestyles of others.

Throughout the year, Rowan Engineering draws visitors to campus for a taste of engineering education. Year-round, it’s possible to run into teachers and counselors from New Jersey school districts learning how to teach K-12 students technology fundamentals in programs such as Project Lead the Way and Engineering Clinics for Teachers. During the summer, the school hosts students for hands-on engineering projects in Attracting Women Into Engineering, Rowan’s Introduction for Students to Engineering and the High School Scholars Program.

ACCOMPLISHMENTS Rowan, accredited by ABET, the accrediting board for all engineering programs, has not gone unnoticed. Not in New Jersey. Not in the United States. Not in the world.

Some accolades are well known. This year, for example, U.S. News & World Report ranked the College 15th in the nation among schools offering bachelor’s and master’s degrees, with three of its four programs landing in the top 10. That is just the most obvious award. And it’s just the start.

In the short history of the College, students have captured prizes for their papers and projects in their backyard and across the country. Two of the latest include international winners.

David Lester, an electrical and computer engineering student, led the Rowan-sponsored winning team that earned first place and “best in show” in the highly competitive international Walt Disney Imagining 18th Imaginations Design Competition, held this summer at Imagining headquarters

Team learning made Cat Ni ’00 a team leader

Catherine “Cat” Jeffries-Ni knows a great opportunity when she sees it. She also knows how to grab that opportunity and run with it.

For Ni ’00, opportunity came early in the Rowan College of Engineering, where clinic projects allowed her to work with interdisciplinary teams, focus on communication as well as technical skills, and develop as a leader.

A member of the first graduating class, Ni was a standout academically and active in COE organizations and others on campus, including the Society of Women Engineers, American Society of Mechanical Engineers, Student Government Association and Alpha Sigma Alpha Sorority. Also, she was on the team that won second place in the ASME student regional competition and she interned at Sony Music and Kimberly Glass.

“Catherine...was an inspiration to our first batch of students and to our engineering program,” said Tirupathi R. Chandrupatla, founding chair of Mechanical Engineering and one of her professors. “She tackled complex problems with ease and excelled in teamwork. It is exciting to note that she carried this into her business activity to motivate others and succeed.”

Carry it on she did. Ni took her talent and determination from Rowan and went on to jump-start a career with defense industry giant Lockheed Martin.

At Lockheed Martin, Ni started in quality assurance and moved through increasingly more responsible positions. As she quickly advanced up the corporate ladder, she garnered experience in engineering, business and management, among other fields.

Perhaps most telling, though, was her acceptance into the corporation’s Operation Leadership Development Program in June 2006, programs designed to groom employees with outstanding potential for future leadership roles.

Today, she works in Orlando, where she is a business development manager for Lockheed Martin’s Missiles & Fire Control Division, concentrating on international business development. But her attachment to Rowan—which includes serving on the College of Engineering’s 20-member Dean’s Advisory Council—remains strong.

“I believe the biggest thing that prepared me was the clinic experience,” said Ni, a Blackwood native. “Having to come together with a diverse team, problem solve with time constraints is the world that I live in every day. It was the best way to take education and simulate (a) real working environment.”
Rowan Today

Industry pros invest in students and fresh ideas

Rowan Engineering draws plenty of support from area companies and organizations, including the two firms where Rich Gutowski and Chet Dawson work.

Gutowski is the manufacturing manager, Chemicals and Catalysts, at the West Deptford branch of London-based specialty chemicals company Johnson Matthey. The firm has sponsored Rowan Engineering clinics longer than any other organization.

While he didn’t initiate the 10-year partnership—which included a scholarship for a member of the first class—he’s been involved with Johnson Matthey/Rowan collaborations from the beginning.

“We have ideas that we would like trialed, however we do not have the resources here to put engineers or chemists on them other than in a consulting type of capacity,” said Gutowski, whose firm manufactures precious metals, chemicals and catalysts and refines precious-metal-bearing materials for the chemical and pharmaceutical industries.

“We’ll negotiate with Rowan and decide on one to two projects they and we are interested in working on, generally industrial applications associated with what we do here,” he said.

The work has focused on a wide range of research, including crystallizing solid materials to get a more washable product and recycling wasted energy.

Dawson, former director of engineering and now a consultant for Sony DADC in Pitman, has served as chairman of the Dean’s Advisory Council for close to 10 years. His company has been involved with the College of Engineering in many ways.

Sony funded one scholarship for the first class, awarded a $50,000 grant in 2006 to establish an endowment fund to support nontraditional college programs like Engineers Without Borders-USA and summer outreach, and regularly hosted summer tours for special programs like Attracting Women Into Engineering. Sony also has funded a clinic, donated equipment and hired interns and graduates from Rowan Engineering.

Initially, Dawson was skeptical about what Rowan—with a reputation for education, communication and other programs—could bring to the engineering education table. “I got more excited with the program as it reached higher and higher standards,” he said.

“It’s the only technical school for people in southern New Jersey. It provides tremendous opportunities for students and for businesses,” added Dawson.

“I think there’s a really good interaction between the tech staff here and the professors in the chemical engineering program at Rowan. They give us fresh ideas, and they’re always enthusiastic,” said Gutowski, who has hired Rowan students for internships and full-time jobs. “Plus, we get a first-hand look at students who may one day be our employees.”
professors regularly receive. “It is truly amazing that faculty in a college this new have garnered most of the prestigious national awards for engineering education, such as the Carlson, Corcoran, Dow, Fahien, Martin, Quinn and Westinghouse awards,” Slater said.

Said Associate Dean Steven Chin, “The College has been very successful. The successes speak for themselves when you look at the faculty awards, the student awards, the programs. The College certainly has flourished.”

COOPERATION, COLLABORATION & CORPORATE FRIENDS
It is virtually impossible to build a program as strong as Rowan’s in such a short time without the support of many others.

Although no one has matched Henry Rowan’s contribution to the school, many have played a critical role in its development.

Every student in the first class received a tuition-free education thanks to the PRIDE 2000 initiative. Through PRIDE (Partners with Rowan in Developing Engineers) 2000, businesses such as DuPont, L-3 Communications and PSEG; the Rowan Foundation; the Alumni Association and individuals contributed more than $1 million to provide the full scholarships.

Thirteen years after Rowan Engineering welcomed its first class, organizations and individuals still contribute to Engineering, and professors regularly land research grants from the likes of the National Institutes of Health, the Navy, the Environmental Protection Agency and the National Science Foundation. In 2008, those grants totaled more than $3 million.

While financial contributions always are important, time, advice and affiliations also are essential.

In its history, for instance, the school has had 315 industrial partners. Those industrial partners, in addition to being PRIDE members, have included Dean’s Advisory Council members, clinic sponsors and firms that have consistently provided internship opportunities and hired graduates.

10 YEARS OF GRADUATES
Perhaps the greatest achievements of all are the 900 or so students who have earned Rowan Engineering degrees in the last 10 years. During the last five years, the College has boasted a 95-percent placement rate, and corporations like Sunoco return year after year seeking Rowan students.

Graduates have landed jobs with small businesses and major corporations like defense giant Lockheed Martin. They are working for government organizations such as the New Jersey Department of Transportation and the Navy. They have started their own firms, returned to school to pursue master’s and doctoral degrees at places like Stanford, MIT and Princeton and moved into fields outside of engineering for which their degree laid the groundwork. They have traveled though Rowan Hall’s doors and up many ladders in the last decade.

No doubt, the reputation of Rowan University’s College of Engineering started out strong and remains so. A Rowan Engineering education has opened and continues to open many worlds for its students and for its graduates. Perhaps the main question is, “Where from here?”

For Whitaker, the senior chemical engineering major who plans to pursue a Ph.D. in engineering, the answer is pragmatic. “I would like to see the school expand the clinic program to bring in even more outside corporate sponsors,” she said. “When students have the opportunity to work with representatives from engineering companies, they get to see what kind of an impact their work can have.”

For Dean Dorland, the answer is determined. “Our goal is to conquer tomorrow’s challenges while educating tomorrow’s graduates. We have the ability to adapt, so we are constantly addressing that next challenge. This flexibility comes with empowered faculty and engaged students—a win-win combination for success.”

For benefactor Henry Rowan, the answer is straightforward. “I expect to see the College continue its reputation for excellence, not size. We’re not trying to compete with anybody except in quality. I don’t think it needs to improve. Rowan Engineering does a good job.”

Patricia Quigley ’78, M’03 is an award-winning public relations practitioner and journalist. She has been an assistant director of Media & Public Relations at Rowan for 11 years, and among the many beats she loves covering is the College of Engineering.