

DIGITAL CAMERA INVENTOR STEVEN SASSON '72 ~ CATS PARTNERSHIPS ~ 175 YEARS OF CIVIL ENGINEERING

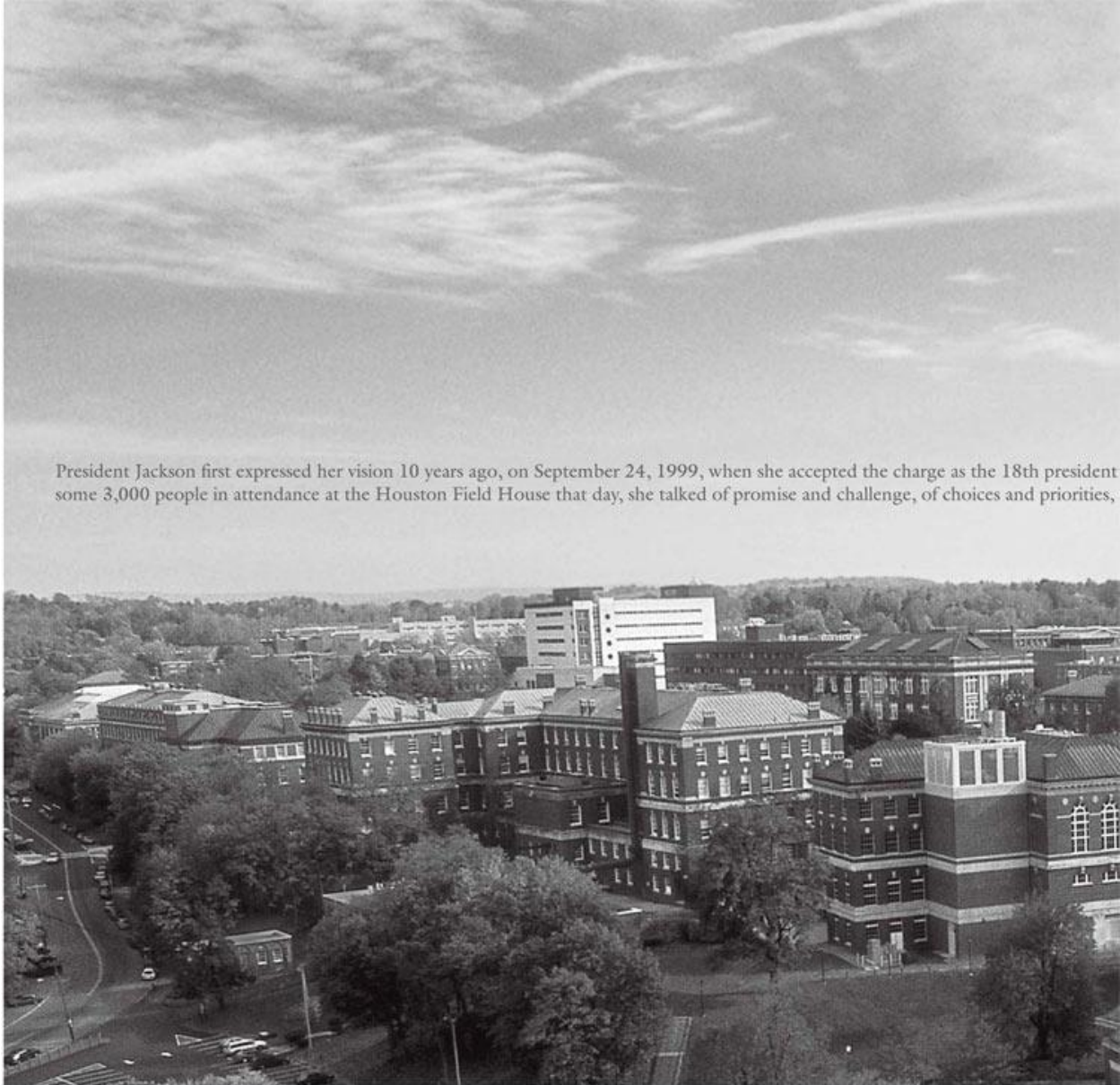
Alumni Magazine—Spring 2010

Rensselaer

**A UNIVERSITY
TRANSFORMED**

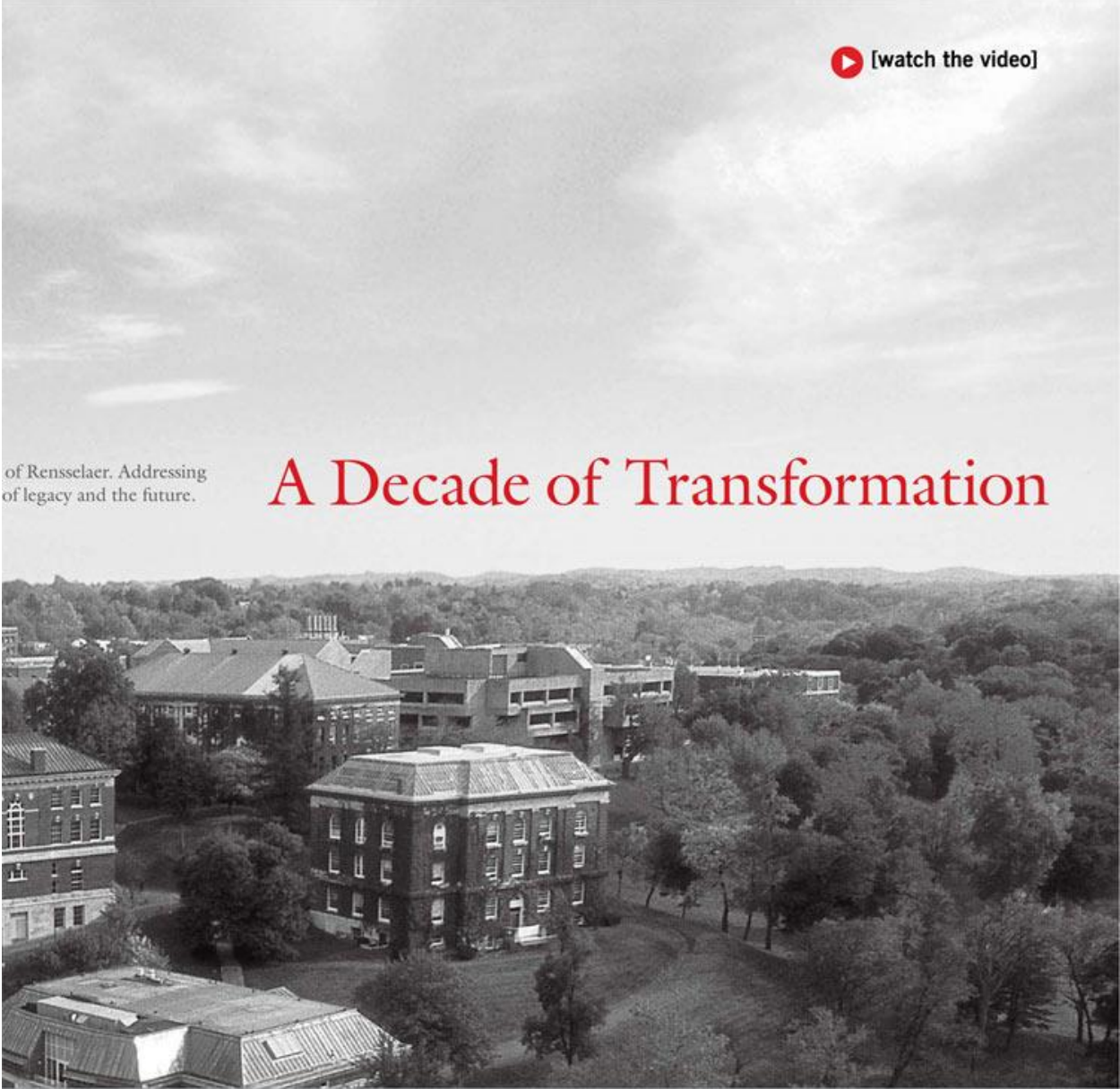
CELEBRATING TEN YEARS OF THE RENSSELAER PLAN





President Jackson first expressed her vision 10 years ago, on September 24, 1999, when she accepted the charge as the 18th president. Some 3,000 people in attendance at the Houston Field House that day, she talked of promise and challenge, of choices and priorities,

Sometimes change can seem imperceptible, like jagged stone worn smooth by centuries of ocean tide. Other times it comes fast and furious, thanks to the sheer force of indomitable human spirit. Indeed, start with a clear vision, add a hefty dose of commitment and, within the span of a decade, an entire 186-year-old university can be transformed dramatically. | When *The Rensselaer Plan* was launched 10 years ago, the Troy campus was an altogether different place. Back then, visitors would have found a faculty/staff parking lot in place of the sunlit Center for Biotechnology and Interdisciplinary Studies (CBIS). There was nothing but a grassy hill where the magnificent Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC) now overlooks the city of



[▶ \[watch the video\]](#)

of Rensselaer. Addressing
of legacy and the future.

A Decade of Transformation

Troy and the Hudson Valley. Similarly, an intramural playing field and parking lots occupied the land now held by the East Campus Athletic Village (ECAV). And there was no Computational Center for Nanotechnology Innovations (CCNI), which now connects the campus and the rest of the world at blazing fast speeds. | No doubt the transformation of Rensselaer is monumental. Yet it goes far beyond these four physical platforms. The Institute's newly invigorated research and academic programs are vastly more interdisciplinary, its student body more diverse, and the student experience more complete in all of its dimensions. In this ever-flattening, rapidly changing world with daunting challenges, Rensselaer's outlook now is increasingly global. BY ROBIN BERNSTEIN



President Shirley Ann Jackson, Rensselaer trustees and administrators, and community leaders gathered to break ground for the new Experimental Media and Performing Arts Center on Sept. 19, 2003.

The Center for Biotechnology and Interdisciplinary Studies, which attracted \$22.5 million in New York state funding for equipment, officially opened on Sept. 10, 2004.

“In creating *The Rensselaer Plan*, we had to imagine a bolder future for this university, building on our legacy and existing strengths, as well as imagining important new dimensions that did not exist before,” says President Shirley Ann Jackson. “By creating new platforms, expanding our research enterprise, and bringing on new faculty to augment our existing strengths, we are positioning Rensselaer for an increasingly global reach and global impact.”

The Rensselaer Plan was designed to build upon the Institute’s distinctive strengths in interdisciplinary inquiry, interactive learning, and technological entrepreneurship. It required leadership, administrators, faculty, and staff to rethink and reinvent practices and policies across the university, while also adding important new dimensions that did not exist before.

The plan comprised six broad goals. First, the plan pledged to provide an outstanding and distinctive undergraduate and graduate education. Continuing the Rensselaer legacy of educational innovation, Institute leaders examined the intellectual core and restructured undergraduate and graduate offerings.

The plan also vowed to expand, dramatically, the research enterprise by creating new initiatives in areas closely aligned with societal and global priorities, and enhancing existing research strengths. To invigorate Rensselaer research, President Jackson says, “we challenged ourselves to extend our focus, and to take risks for impact, moving into new domains of significance at the intersections of

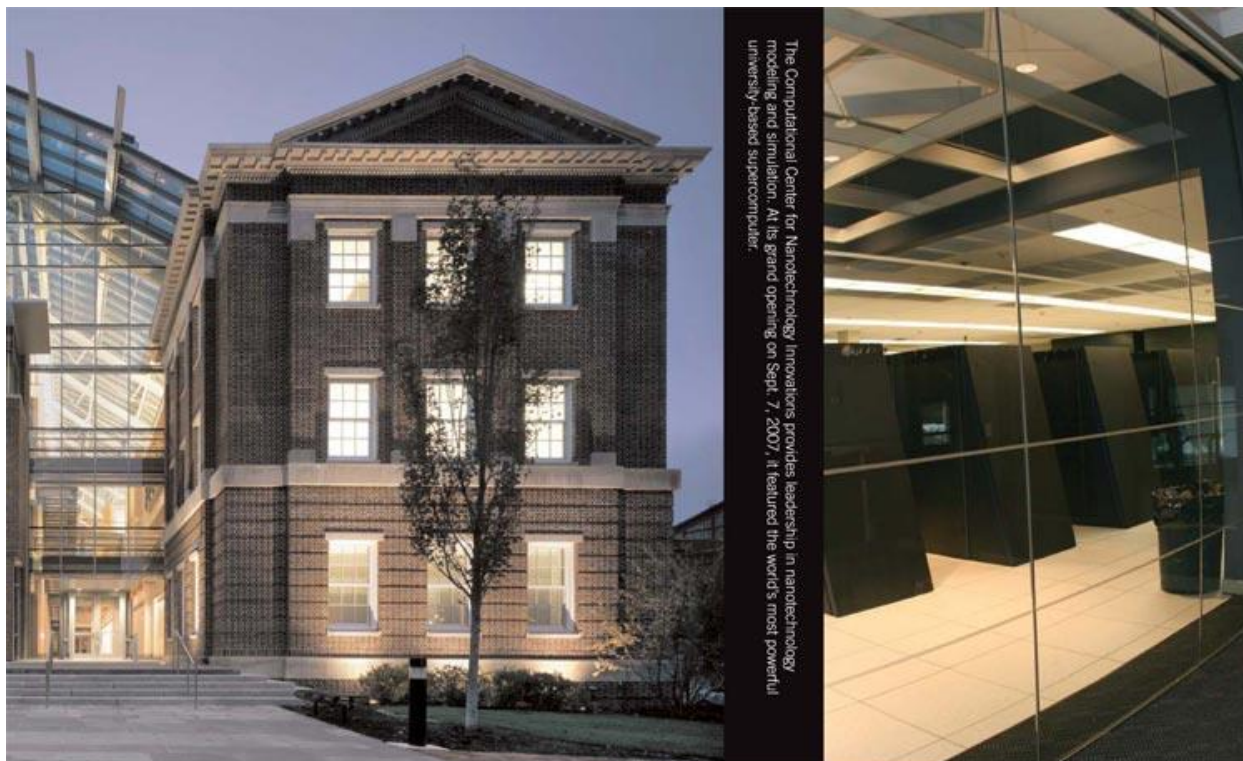
important disciplines, combined with Rensselaer core strengths in engineering and information technology.” Rensselaer invested in five signature thrusts—biotechnology and the life sciences; computational science and engineering; experimental media and the arts; energy and the environment; and nanotechnology and advanced materials—areas that intersect decisively with existing research excellence.

The Rensselaer Plan goals also included increasing scientific and technological entrepreneurship; achieving true intellectual, geographic, gender, and ethnic diversity by garnering the best talent and preparing students to lead in a global economy; drawing vitality from, and adding vitality to, multiple and diverse communities; and redesigning and invigorating enabling activities.

A Transformative New Infrastructure

The major new platforms—CBIS, CCNI, EMPAC, and ECAV—like four sturdy legs of a table, anchor and animate Rensselaer’s transformation. Yet so much more has changed on the Troy campus these past 10 years.

If it is true that first impressions are lasting, then today, first-time visitors are struck by the beauty of the campus. New gateways define the campus perimeter, surrounding streetscapes were spruced up, and new landscaping is everywhere. Rensselaer residence halls, dining facilities, meeting spaces, lounges, offices, performance venues, athletic facilities, and the Union were given major makeovers.



The Computational Center for Nanotechnology Innovations provides leadership in nanotechnology modeling and simulation. At its grand opening on Sept. 7, 2007, it featured the world's most powerful university-based supercomputer.

"I have often said that a world-class university must offer its students, faculty, and staff a world-class environment in which to live and work, and world-class instruments with which to accomplish that work," says President Jackson. "The new facilities and platforms—in particular, CBIS, CCNI, EMPAC, and ECAV—reflect our strategic direction and positioning in keeping with *The Rensselaer Plan*, our support for multidisciplinary education and research, and our commitment to a fully realized student experience."

The Mueller Center, a fully equipped fitness center on 15th Street, became one of the first new projects created under *The Rensselaer Plan*. Classrooms and undergraduate laboratories were upgraded and the Folsom Library refurbished, as were the Rathskeller and the Russell Sage Dining Hall. The new, ultra-trendy Java++ coffee house has become a popular late-night gathering spot. The university built a new JEC wind tunnel facility, and modernized studios and equipment. Research facilities were overhauled, including the central server room for computational research, and the Winslow Building. A materials characterization core facility in the Materials Research Center was created.

Not all of the changes are as visible, but they are just as vital. Safety and security are paramount, with the installation of residence hall sprinklers and security access technology, as well as with the replacement of the ammonia-based ice system in the Houston Field House. Likewise, better exterior lighting and more emergency call boxes on campus are a welcome addition, as is the new emergency mass notification system, RPIAlert.

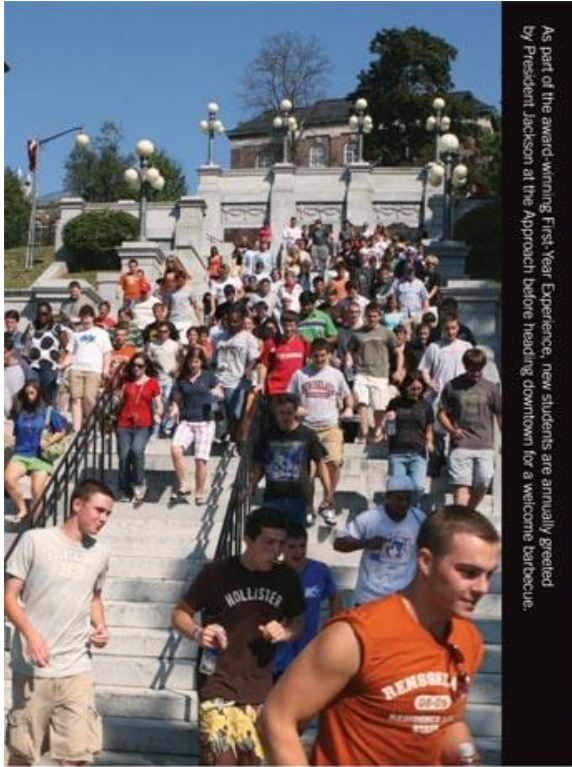
Rensselaer also became known as one of the "most wired" campuses in the U.S. It began with mobile computing, which put laptops into the hands of every undergraduate. This was followed by the implementation of a wireless network, blanketing the Troy campus with 357 access points in 119 buildings.

Maintenance crews were kept busy. They tackled deferred projects that expanded the electrical capacity of the Troy campus and its fiber-optic backbone. They restored the exterior of West Hall, and replaced campus water mains and steam lines, as well as the roofs of 22 buildings. All told, Rensselaer thus far has invested approximately \$700 million in infrastructure improvements under *The Rensselaer Plan*. These were accompanied by a concomitant re-engineering of the policies and procedures of the Institute, in order to ensure consistent and equitable business transactions and personnel practices.

Building a Global Academic Community

One major shift at Rensselaer is a renewed emphasis on international education, which is fast becoming a defining aspect of the undergraduate experience. As the Institute extends its global reach, it is building partnerships that expand international study and research collaboration, while encouraging faculty and student exchange.

President Jackson says the goal of such partnerships is to enhance intellectual agility, multicultural sophistication, global view, and ability to see connections between disciplines, across a broad



As part of the award-winning First Year Experience, new students are annually greeted by President Jackson at the Approach before heading downtown for a welcome barbecue.



intellectual and social milieu, and to allow students to develop into the global leaders they are destined to be.

Delegations from Rensselaer have reached out to universities and research facilities, and have met with government ministers on every continent. Over the past five years, the university has added nearly 15 new international partner universities, opening up opportunities for study in Asia, Africa, and Europe. These partnerships are generating a higher degree of involvement, including international competitions for athletic teams, as well as study-abroad programs where students travel with faculty to destinations that are pertinent to a particular field of interest.

On the Hartford campus, the International Scholars Program (ISP) offers master's degree students in management or engineering science a 10-week global learning experience in Europe and Asia. The REACH (Rensselaer Education Across Cultural Horizons) program, which sends undergraduate students abroad, builds upon several long-standing School of Architecture programs in Italy, China, and India.

The focus is on developing the complete individual, according to Prabhat Hajela, vice provost and dean of undergraduate education. "This globally connected world requires students to have an understanding of the geopolitical realities within which their careers will unfold," he says. "They need the ability to function in a multicultural setting and to thrive in careers that may require international mobility."

This is vital, as President Jackson has pointed out, in a world rife

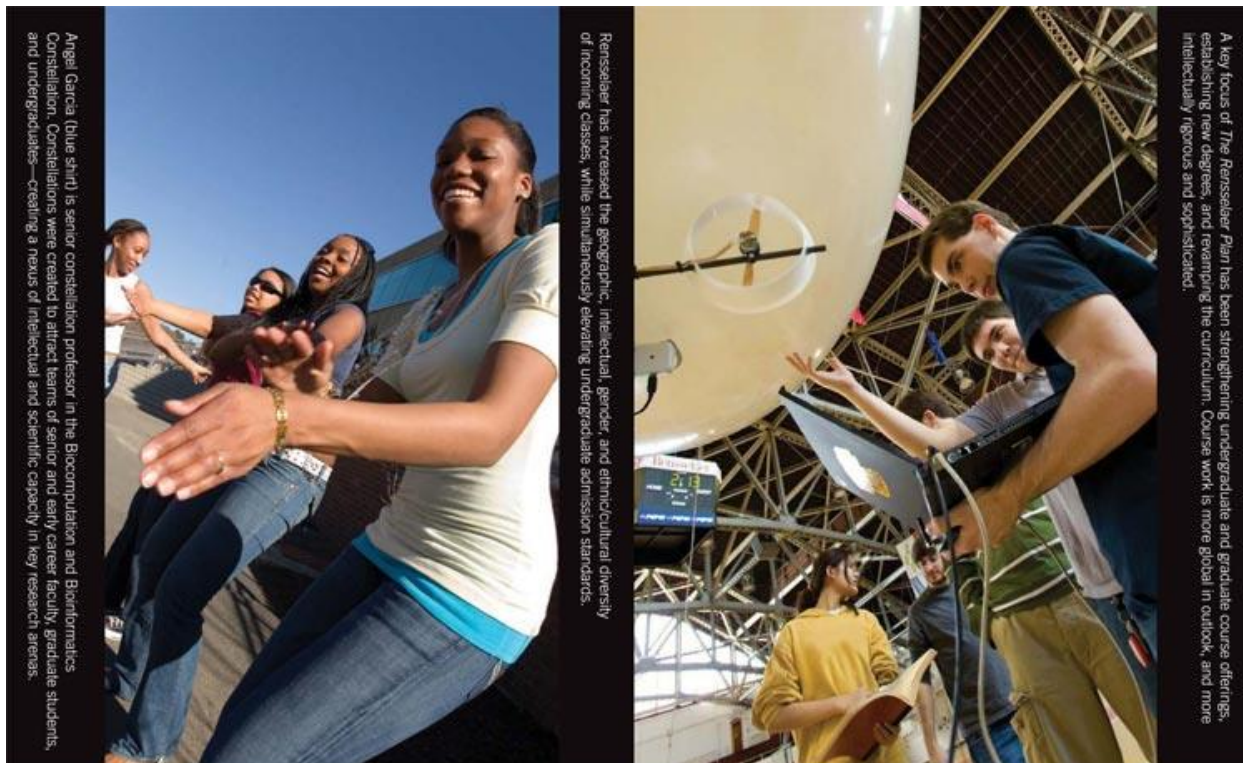
with tremendous societal challenges without borders—energy security, global climate change, international financial system restructuring, disease prevention and mitigation, water and food safety, terrorism, and unrest. It is an education that lasts a lifetime.

An Interdisciplinary Approach

If there is one change that can be considered a hallmark of this past decade, it is the increasingly multidisciplinary approach to academic programs and research being pursued at Rensselaer. Moving into new domains at the intersections of disciplines, and combining them with the Institute core strengths in engineering and information technology, has resulted in an investment in five signature thrusts—biotechnology and the life sciences; computational science and engineering; experimental media and the arts; energy and the environment; and nanotechnology and advanced materials—areas that intersect with existing Rensselaer research excellence. A result has been a jump in sponsored research.

"*The Rensselaer Plan* was visionary in identifying key areas of critical importance to science and society," says Francine Berman, vice president for research. "The result has been important collaborative research between our faculty and students, leading to the development of commercial tools and technologies based on deep and substantive research. I am delighted by the success we're having in the very competitive federal funding landscape."

Rensselaer sought and engaged scientific and engineering super-



Angel Garcia (blue shirt) is senior constellation professor in the Biocomputation and Bioinformatics Constellation. Constellations were created to attract teams of senior and early career faculty, graduate students, and undergraduates—creating a nexus of intellectual and scientific capacity in key research arenas.

Rensselaer has increased the geographic, intellectual, gender, and ethnic/cultural diversity of incoming classes, while simultaneously elevating undergraduate admission standards.

A key focus of *The Rensselaer Plan* has been strengthening undergraduate and graduate course offerings, establishing new degrees, and reworking the curriculum. Course work is more global in outlook, and more intellectually rigorous and sophisticated.

stars to lead research “constellations”—multidisciplinary teams of senior and early career faculty, graduate students, and undergraduates—creating a nexus of intellectual and scientific capacity in key arenas. Not surprisingly, research expenditures and awards have more than doubled, from \$37 million to \$90 million, and are growing at a rate of nearly 10 percent annually. One tangible outcome of the strong inroads in biotechnology, for example, was the creation of a fully synthetic heparin, a safer alternative to the commonly used blood thinner.

Provost Robert Palazzo notes that the goal of constellation faculty recruitment is to establish a critical mass of top research and teaching faculty in areas of long-term interest to Rensselaer. “Of the 356 tenured and tenure-track faculty on campus as of last fall, 244 were recruited under *The Rensselaer Plan*, including distinguished constellation professors and numerous others who hold endowed chairs,” he says. Furthermore, Rensselaer is reducing attrition, increasing the representation of women among the ranks of senior faculty and administration, and making professional advancement processes transparent and fair.

A More Fully Realized Student Experience

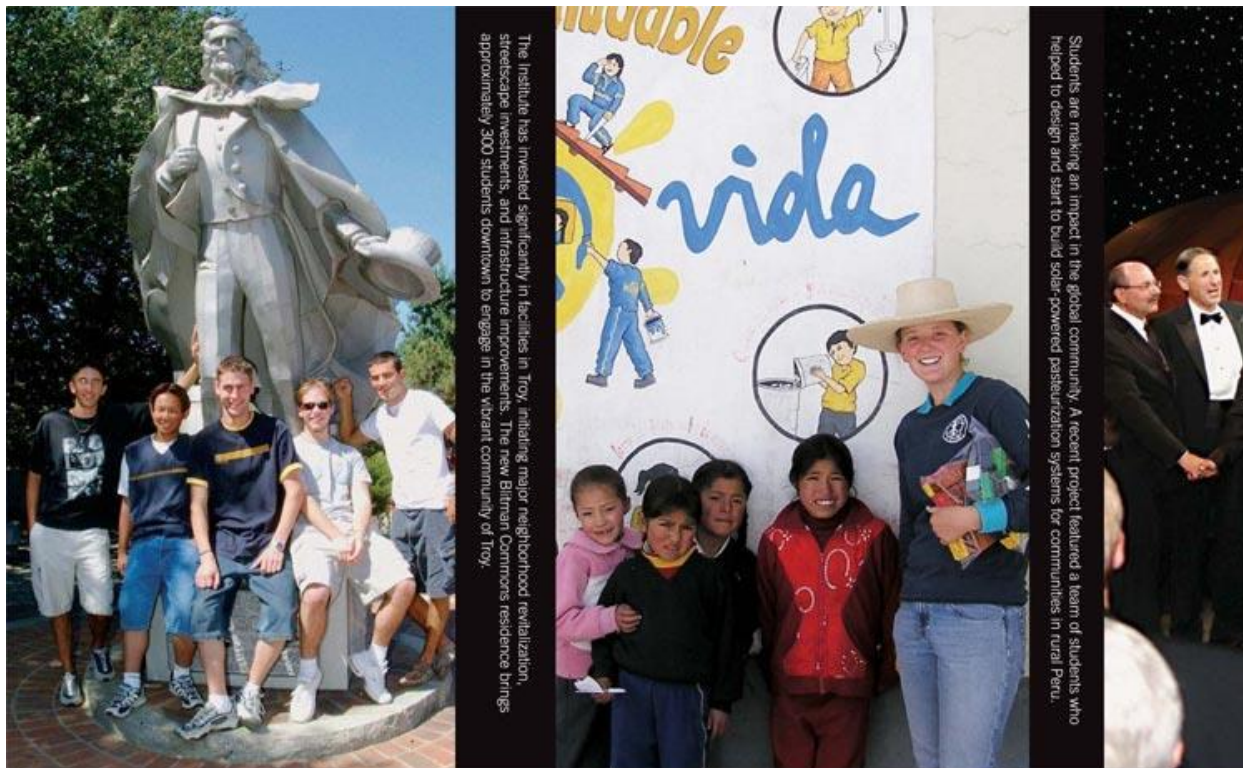
Just as the physical appearance of the campus is being transformed, so are its students. A decade ago, underrepresented minorities comprised 8 percent of Rensselaer’s freshman class. Today it is 12 percent. Ten years ago women made up 22 percent of the freshman class. That number today has jumped to 31 percent. Rensselaer also has

succeeded in increasing the geographic, intellectual, and cultural diversity of incoming classes, while simultaneously elevating its undergraduate admission standards. Applications are up 135 percent over the decade, a trend that has enabled the Institute to be more selective, and thus draw students who contribute even more to the richness of the environment.

This, in turn, meant upping the ante on undergraduate and graduate course offerings, and Rensselaer has done that by establishing new degrees, revamping the MBA curriculum, and establishing a new MBA/M.S. in law in collaboration with Albany Law School, as well as by emphasizing entrepreneurship. Course work is more global in outlook, and more intellectually rigorous, sophisticated, and socially nuanced, creating an environment that promotes mind-opening new experiences.

Continuing the Rensselaer legacy of educational innovation, the Institute has committed to a renewed focus on undergraduate education with *The Undergraduate Plan*, a blueprint adopted five years ago for creating a living and learning environment rivaling the best schools in the nation.

One goal was creating a residential college feel within the university. The “CLASS” initiative—Clustered Learning, Advocacy, and Support for Students—was the answer, as it provides new undergraduates with guidance from faculty and upperclass and graduate students, both within their residence halls and as a part of their undergraduate class. The CLASS initiative extends the award-winning Rensselaer First-Year Experience through a new Sophomore-



The Institute has invested significantly in facilities in Troy, including major neighborhood revitalization, streetscape investments, and infrastructure improvements. The new Blitman Commons residence brings approximately 300 students downtown to engage in the vibrant community of Troy.

Students are making an impact in the global community. A recent project featured a team of students who helped to design and start to build solar-powered pasteurization systems for communities in rural Peru.

Year Experience, in which sophomores will live on campus or in Greek communities that meet stringent university standards. The newest star of the CLASS system is the Howard N. Blitman, PE. '50 Residence Commons.

"The CLASS initiative creates a new paradigm which establishes a residential college model for undergraduates within a great technologically rooted research university," says President Jackson. "It elevates the breadth and quality of support, providing students with a greater sense of community and belonging, and it ensures that every student receives the best leadership development and growth opportunities available.

Eddie Ade Knowles, vice president for student life, has referred to CLASS as a "multiple-touch approach" that enables students to integrate academic work, personal interests, and leisure time in a more holistic way. "It's an across-the-campus partnership that builds community and nurtures excellence," he says. In this way, Rensselaer is creating a unique living and learning environment that raises the quality of the student experience to a new level, fostering a sense of belonging and a commitment to success.

Fostering Partnerships

Today Rensselaer is one of the region's largest private employers, contributing to the strength of Troy, the Capital Region, and the New York state workforce. The Institute has generated more than a billion dollars in economic activity and nearly 6,000 full-time jobs

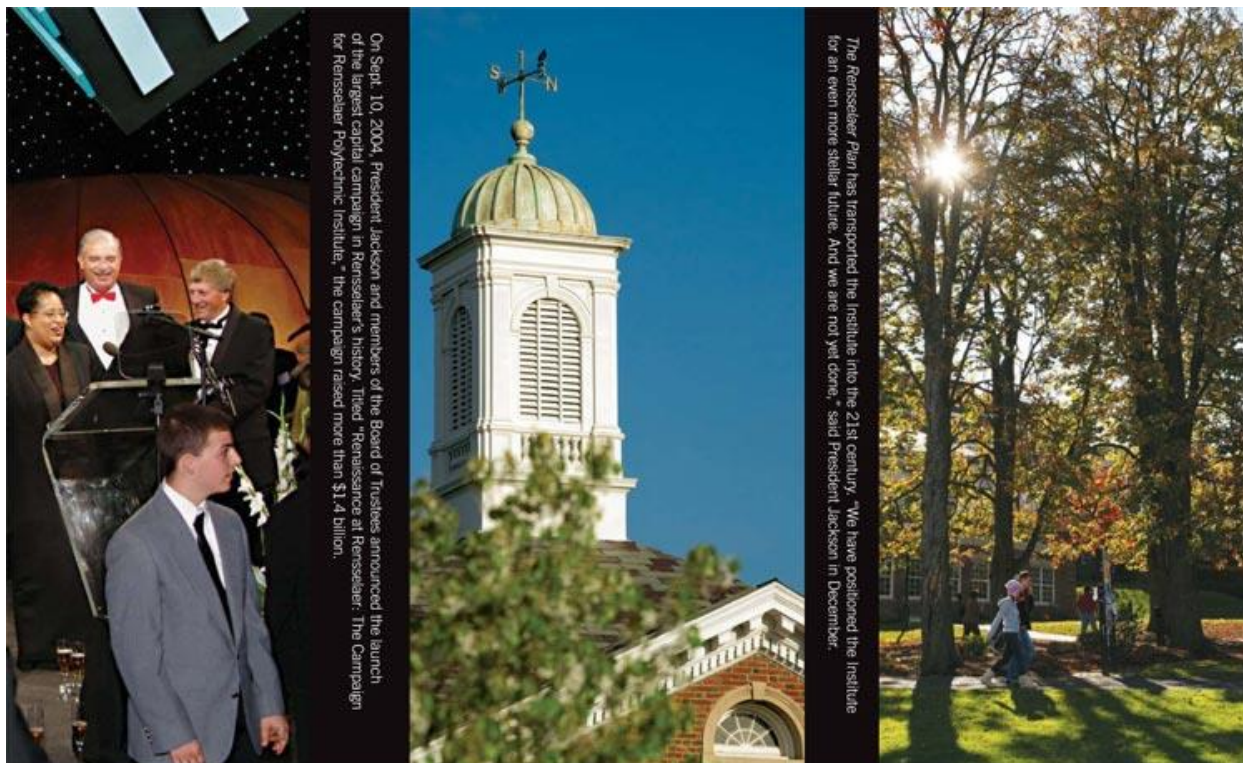
throughout New York state over the last decade.

Indeed, Rensselaer is a major catalyst in the creation of new businesses. More than 70 such ventures nurtured in the Rensselaer Incubator are still doing business in the Capital Region, employing more than 2,500 individuals. The Rensselaer Technology Park is home to 60 companies that provide jobs for about 2,400 people. The people of Rensselaer are civic-minded as well; more than 1,000 members of the Rensselaer family logged some 16,000 hours of documented community service in a single year.

"Our signature research thrusts are important areas of focus for the entire Tech Valley," says Erin Crotty, director of community relations. "Several companies have cited proximity to the university as a major reason for locating to, or investing further in, the Capital Region."

She adds that, thanks to *The Rensselaer Plan*, the university has invested significantly in facilities in Troy, including Blitman Commons and the use of the Gurley Building for the Lighting Research Center and the Office of Human Resources. "These investments bring Rensselaer directly into downtown Troy. We are now a major sponsor of such signature events as Troy Night Out and the Victorian Stroll and we are a catalyst for significant economic development, including the new Hilton Garden Inn on Hoosick Street."

And the reach of Rensselaer extends beyond the surrounding region. Its partnerships have flourished across a broad spectrum—from federal and state government agencies, to multinational corporations such as IBM, to prominent private foundations such as the Bill and Melinda Gates Foundation.



On Sept. 10, 2004, President Jackson and members of the Board of Trustees announced the launch of the largest capital campaign in Rensselaer's history, titled "Renaissance at Rensselaer: The Campaign for Rensselaer Polytechnic Institute." The campaign raised more than \$1.4 billion.

The Rensselaer Plan has transported the Institute into the 21st century. "We have positioned the Institute for an even more stellar future. And we are not yet done," said President Jackson in December.

An Even Brighter Future

As *The Rensselaer Plan* continues to work its magic, the Institute continues to move up in stature, most recently ranking 42nd among all national universities in the annual *U.S. News and World Report* list of "America's Best Colleges," up from the 50th mark a decade ago. Student applications have skyrocketed and retention, graduation, and placement rates have been on the rise. Faculty and Institute research are being recognized via prizes, fellowships, and broader media, public, and professional acknowledgment.

A transformation of this speed and magnitude requires the steadfast focus and resolute commitment of all stakeholders. These manifold achievements would not have happened were it not for the financial donations provided by the Institute's ambitious \$1.4 billion capital campaign, the *Renaissance at Rensselaer: The Campaign for Rensselaer Polytechnic Institute*, which reached its goal nine months ahead of schedule.

"For *The Rensselaer Plan* to be successful, it had to be effective not only in terms of strategic vision, but also in terms of vigorous implementation," President Jackson notes today. "The decade of transformation that has resulted would not have been possible without the tireless efforts of everyone in the Rensselaer community—from donors, trustees, and other alumni and alumnae to faculty, students, staff, and administration."

Indeed, the *Plan* could not have been realized without the strong support of Rensselaer graduates. "We constantly look for opportuni-

ties to bring our alumni and alumnae back to campus," says President Jackson. "The more they are involved, and the more they see evidence of change at the Institute, the more enthusiastic they become in their support."

President Jackson first expressed her vision 10 years ago, on September 24, 1999, a gorgeous Friday marked by clear blue skies, when she stood at the inaugural podium and accepted the charge as the 18th president of Rensselaer. Addressing some 3,000 people in attendance at the Houston Field House that day, she talked of promise and challenge, of choices and priorities, of legacy and the future.

She called for the creation of a fully realized technological university, and said the change would be holistic, and that no aspect of the Institute would be left untouched. She proposed a plan whose strength would be drawn from the two essential roots of Amos Eaton's original Rensselaerean Plan: the application of science to the common purposes of life, and the employment of unique educational strategies for engaged, interactive, self-directed learning. She pledged to give her utmost to realize this vision.

In the 10 years since, guided by *The Rensselaer Plan*, the university and its legacy have been transported into the 21st century. At the 10-year retrospective held on campus in December, President Jackson summed it up this way: "We have positioned the Institute for an even more stellar future. And we are not yet done."