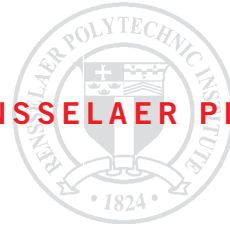


THE RENSSELAER PLAN 2024





AT THE BEGINNING OF THE NEW MILLENNIUM, WE SET OUT ON AN AMBITIOUS JOURNEY.

Armed with our intellects, our energy, and a bold vision for the future, we launched a process to realize the mission of Rensselaer Polytechnic Institute in new and tangible ways. We conceived and implemented *The Rensselaer Plan*, to bring new meaning, and new substance, to the question we ask ourselves as the first technological university in the nation: “Why not change the world?”

We began our journey of transformation where necessity demanded. We have made major investments in our people, programs, platforms, and partnerships; and, together, we have brought about a true Renaissance at Rensselaer. These investments have enabled us to transform Rensselaer into a top-tier technological research university with global reach and global impact. That transformation serves as a solid foundation on which we will build even greater achievements in the future.

Our journey of transformation continues, under *The Rensselaer Plan 2024*. In the same spirit as its precursor, the revised Plan is evergreen, prepared to grow and evolve, as the Institute grows and evolves. In advancing *The Rensselaer Plan 2024*, we are moving from transforming Rensselaer to Rensselaer being transformative—transformative in our students’ lives; transformative in our innovative pedagogy, nationally and internationally; transformative in the global impact of our research.

As we anticipate the bicentennial of Rensselaer Polytechnic Institute in 2024, we look forward to addressing the Global Challenges that face the world of the 21st century—to change lives, to advance society, and, indeed, to change the world.

Shirley Ann Jackson, Ph.D.

President

Professor of Physics, Applied Physics, and Astronomy

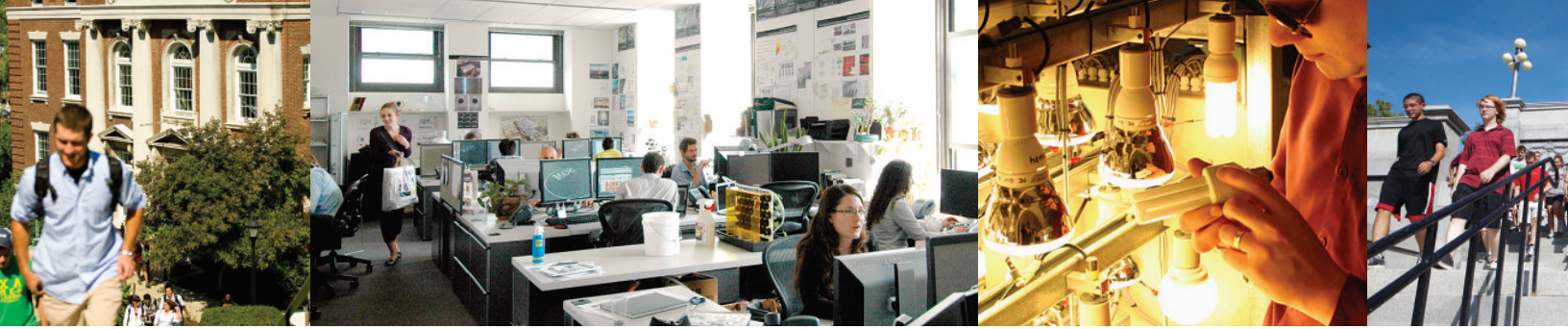
Professor of Engineering Sciences

Rensselaer Polytechnic Institute



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EXECUTIVE SUMMARY

The goal of *The Rensselaer Plan 2024* is to enable Rensselaer to have even greater success, and to continue to gain prominence in the 21st century as a top-tier world-class technological research university with global reach and global impact.

We are moving from transforming Rensselaer to Rensselaer being transformative—for our students, in our pedagogy, in the global impact of our research. As a multigenerational community of learners, engaged in deep discovery, discourse, and technological innovation, we will make a difference for the world. The fundamental markers of **Excellence, Leadership, and Community** will drive our actions.

We are guided by the following premises:

- Education and research are inextricably linked in world-class universities.
- Research potentiates education.
- Research and education drive reputation.
- Intellectual congruence leads to excellent education.
- Addressing Global Challenges leads to transformational education.
- Diversity and inclusion are essential to academic excellence and innovation.
- Strategic focus is essential to achieving our goal.

As we advance *The Rensselaer Plan* to its next stage of development, we are building our strength, our impact, and our reputation on the principles upon which the university was established in 1824, and that have been reinforced by the success of *The Plan*. We are creating a Rensselaer that engenders in our students intellectual agility, multicultural sophistication, and a global view. We are creating a Rensselaer that enables our faculty to make world-changing scientific discoveries, technological innovations, and significant contributions to commerce, the arts and culture, and public policy. To those ends, we will:

- Offer a complete student experience, highlighted by:
Clustered Learning, Advocacy, and Support for Students (CLASS)
- Lead in pedagogical innovation, introducing new learning paradigms:
**Multiplayer and Mixed Reality Classroom
Cyber-Enabled Discovery and Learning**
- Extend our impact on humanity through forward-looking research initiatives:
**Beyond the Internet: Digital Meets Reality
Infrastructural Resilience, Sustainability, and Stewardship**



To realize this vision, a multifront, focused, and engaged community effort will be required to advance the Institute and to expand its resource base.

In implementing the original *Rensselaer Plan* we were well served by making commitments to ourselves and our community—embodied in our “we will” statements. Under *The Rensselaer Plan 2024*, we have made 110 commitments.

In **Undergraduate Education**, we will:

Target an undergraduate student population of 5,000 students.

Broaden curricular offerings.

Launch new modalities of interactive learning.

Develop an ever more engaging and transformative student experience, through CLASS.

Create new opportunities for research and international experiences.

Launch a research-focused Honors Program.

In **Graduate Education**, we will:

Target a resident graduate student population of 2,500, with 1,600 Ph.D. students.

Extend CLASS to graduate students.

Grow interdisciplinary, research-based graduate programs.

Focus graduate education and research on Global Challenges.

Develop advanced professional programs that leverage interdisciplinary research.

Create new technology-enabled learning environments.

In **Research**, we will:

Build the tenured and tenure-track faculty size to 500.

Grow sponsored research expenditures to \$250 million annually.

Launch two new research umbrellas:

Beyond the Internet: Digital Meets Reality

Infrastructural Resilience, Sustainability, and Stewardship

Extend the Signature Thrusts to holistically address Global Challenges.

Expand cross-sectorial research partnerships.

In the **Communities of Rensselaer**, we will:

Strengthen our ethnic, gender, intellectual, and geographic diversity.

Involve alumni/ae as partners in mutually beneficial ways to help advance the Institute, and to strengthen their connections to the Institute.

Foster and support an innovation ecosystem to bring ideas from the classroom and the laboratory to the marketplace.

Seek more deliberate collaborations at the local, regional, national, and global levels.

A Rensselaer education is rigorous, holistic, multifaceted, and supportive. A pedagogical approach that is multidisciplinary and that connects the classroom, design studio, or laboratory to the living environment of the students, cultivates robust and sustained learning.

In **Enabling Change**, we will:

Mount a comprehensive fund-raising campaign, building upon the success of the \$1.4 billion *Renaissance at Rensselaer Campaign*.

Target a goal of \$150 million in annual philanthropic support.

Maintain a robust infrastructure to support academic, research, and administrative activities.

The Rensselaer Plan 2024 will enable us to build on our proud legacy, by educating students to lead in complex environments, by enabling research that addresses the most compelling Global Challenges, and by building a worldwide community of supporters who are bound by the common purpose of “changing the world.”



THE GOAL

Prominence in the 21st century as a top-tier world-class technological research university with global reach and global impact.

A great university has at its core an intergenerational community of learners engaged in the pursuit of new knowledge, committed to disseminating that knowledge, and seeking to use their skills and talents to make a difference for themselves, and for the world at large. This requires intellectual agility, multicultural sophistication, and a global view, in order to make important linkages across disciplines and to operate within a broad scholarly and social milieu.

Excellence, Leadership, and Community are the fundamental values that drive our actions.

Excellence is the mantra and the metric. Leadership means we shape the agenda and discourse in areas related to our mission and plans. Community is what we are. We are “One Rensselaer.”

As we build toward our overarching goal, we insist on excellence, leadership, and community in each core enterprise—resident undergraduate education, graduate education, research, innovation, and entrepreneurship. This is imperative in each academic and administrative unit, and most importantly, in the people of Rensselaer—its faculty, students, staff, alumni/ae, partners, and friends.

Education and research are inextricably linked in world-class universities.

Discovery and innovative pedagogy are core characteristics of the Institute. The creation of new knowledge is critical to fostering an engaging and inspirational learning environment for our students. To provide a superlative education, we must be trailblazers in key research fields. Research enables our students to be partners in

discovery and to remain open to inquiry.

At the intersection of research and education is the entrepreneurial spirit that drives Rensselaer faculty and students to address societal aspirations and challenges of substance with imaginative solutions. The Institute will, therefore, continue to assign added emphasis to research and scholarship as key components of excellence in education.

Research potentiates education.

Research brings education to fruition by enhancing fundamental understanding of the world. Research, therefore, is about learning. At the same time, education teaches students how to see what others do not, how to pose thoughtful questions, and how to proceed when the answer is not obvious. Education, therefore, is about research. Ultimately, one cannot exist without the other.

Research and education drive reputation.

As the impact of the research and education of Rensselaer grows, its prominence as a world-class technological research university also increases. This positions Rensselaer to continue to attract highly talented students and well-respected faculty and staff, to expand its global reach, and to garner increased financial support from private philanthropy and public sources.

Intellectual congruence leads to excellent education.

A Rensselaer education is rigorous, holistic, multifaceted, and supportive. A pedagogical approach that is multidisciplinary, and that connects the classroom, design studio, or laboratory to the living environment of the students, cultivates robust and sustained learning. Rensselaer will continue its commitment to providing an education that extends from traditional settings to every sphere of student living and learning.

Global Challenges lead to transformational education.

Rensselaer asks: *Why not change the world?* The answer to this question requires groundbreaking discoveries and contributions to public policy that will have a powerful impact on the most pressing issues we face as global citizens. Rensselaer will draw upon the resources of its distinguished fac-



ulty, talented students, and outstanding educational and research platforms to create and disseminate knowledge, and to devise solutions for the world's greatest challenges. In this way, Rensselaer honors and invigorates its founders' mission: The application of science to the common purposes of life.

Diversity and inclusion are essential to academic excellence and innovation.

In an increasingly intertwined world and amid global demographic shifts, Rensselaer faculty, students, and staff benefit from an educational environment where diversity is a hallmark of excellence. Rensselaer will strengthen and advance its commitment to diversity and inclusion to provide a research, teaching, and learning experience that is democratic in nature and global in scope.

Strategic focus is essential to achieving THE GOAL.

Rensselaer will build upon its distinguishing strengths in interdisciplinary inquiry, interactive learning, and entrepreneurship to:

- Enhance national and international leadership in innovative learning and teaching by providing an outstanding and distinctive **EDUCATION** for resident undergraduates and graduate students, and for working professionals. Educational programs will incorporate interactive pedagogies, provide an engaging student experience, and create lifetime connections with Rensselaer.
- Dramatically expand the **RESEARCH ENTERPRISE**, including associated graduate education, by (i) creating new Institute-wide initiatives in signature research thrusts closely aligned with societal and global priorities; (ii) building upon and enhancing existing core research strengths; (iii) strategically supporting additional critical priorities in areas that offer opportunities for research impact and leadership; and (iv) building new infrastructure that enables growth.
- Increase our focus on **INNOVATION AND ENTREPRENEURSHIP** across education, research, media and the arts, technology commercialization, and new venture creation, to spur regional and national economic development, and to use science and technology for

social advancement and environmental stewardship.

- Strengthen ethnic, gender, intellectual, and geographic **DIVERSITY** among our students, faculty, and staff in order to draw upon the best talent available, and to prepare our students to work and lead in a global economy.
- Revitalize our diverse **COMMUNITIES** on our campuses, among alumni/ae and friends, and in all of our activities locally, nationally, and globally.
- Redesign and invigorate **ENABLING ACTIVITIES** to focus Rensselaer people, administrative processes, information infrastructure, physical facilities, and financial resources on the realization of strategic goals.





FUNDAMENTALS

We will achieve our goal by embracing our fundamental values, identifying the key strengths on which we will build, and integrating our planning and action.

2.1 Rensselaer Today

Building on its storied legacy, under *The Rensselaer Plan* the Institute has transformed itself into a fully realized university that provides undergraduate and graduate education of undisputed intellectual rigor, with research impact and promise that extend to every continent.

The Schools of Architecture; Engineering; Humanities, Arts, and Social Sciences; The Lally School of Management and Technology; and Science educate approximately 7,000 students—enrolling 5,300 undergraduates and approximately 1,250 graduate students in full-time programs on the Troy campus. Rensselaer at Hartford offers graduate programs for approximately 500 working professionals in engineering, business, and the management of science and technology.

During the life of *The Rensselaer Plan*, annual research funding has tripled, to \$100 million. The Institute is a leader in interdisciplinary research, and has made strategic investments in important new and existing research arenas. Rensselaer has attracted outstanding faculty whose research programs represent a wide array of fields including nanoelectronics; information technology and Web science; computational science and engineering; business analytics; nanotechnology and advanced materials; biotechnology and the life sciences; environmental studies; lighting and acoustics; and media, arts, science, and technology. Our research programs are making an impact on the problems facing society. They are leading to pivotal academic advances, often with applications across multiple disciplines.

New curricula and programs have enriched the academic offerings at the Institute. Rensselaer has extended its distinction in interactive learning and the application of information and digital technologies to education.

2.2 Accomplishments Under *The Rensselaer Plan*, 2000-2012

The Rensselaer Plan brought an examination of the intellectual core in key disciplines and a restructuring of undergraduate and graduate offerings. To advance *The Plan*, we have focused on the development of people, programs, platforms, and partnerships. In the process, we have brought comprehensive change to every aspect of the Institute.

People: The Faculty

An exceptionally gifted professoriate—the very heart of educational excellence, and academic and scientific rigor—is drawn to Rensselaer by bright and motivated students, outstanding colleagues, supportive staff, advanced research facilities, and a culture that celebrates interdisciplinary inquiry. We have established 34 new named chairs, including 24 Constellation Professors. Over the course of *The Rensselaer Plan*, 275 faculty members have been hired, including outstanding early career people, helping to revitalize the faculty. Over the decade, the National Science Foundation has honored 53 of our early career faculty members with its prestigious Career Award.

Rensselaer faculty members are deeply engaged in discovery, knowledge creation, technological and business innovation, and creative design. Faculty members, well known for their forward-looking research and scholarship, welcome and encourage students as partners.

Today, Rensselaer is home to 421 full-time faculty, including 343 tenured and tenure-track faculty. As Rensselaer continues to build its faculty ranks, it has aggressively pursued greater representation of women and underrepresented minorities. We have developed systemic, university-wide approaches to advance and diversify faculty in academic engineering and science careers. The percentage of women faculty has risen from 15 percent to 21 percent, and underrepresented minority faculty from 4 percent to 7 percent. There is more to do.

People: The Students

Undergraduate admissions applications have grown dramatically, with a threefold increase compared to 12 years ago. Applications for full-



time graduate study have reached their highest levels ever. We have raised undergraduate and graduate admission standards. The average SAT scores of our incoming undergraduate students have risen dramatically. The academic qualifications of our entering graduate students have risen sharply. We are more selective and, as a result, our student body is better equipped than ever before to succeed academically and professionally.

The ethnic and cultural, gender, intellectual, and geographic diversity of incoming students has increased. Twelve years ago, women made up 22 percent of the freshman class. Today, women represent 31 percent of all students. New policies designed to attract and retain female students are enabling women at Rensselaer to pursue their academic goals in a welcoming atmosphere. The attraction of underrepresented minorities to Rensselaer, who represent 10 percent of the student body, remains a challenge and is a key priority in *The Rensselaer Plan 2024*.

People: The Staff

Prominent academic and administrative leaders have been appointed to key positions. Administrative portfolios have been created, elevated, and restructured to facilitate the key enterprises of the Institute. Portfolio leaders have effectively managed the performance planning process initiated under *The Rensselaer Plan*.

Highly talented and dedicated staff are working together to improve administrative and service support for the educational, research, and student life dimensions of the Rensselaer experience. The staff has contributed to the vitality of the Institute by focusing on the highest priorities, by achieving new levels of efficiency through increased process integration and collaboration, and by offering creative solutions for more effective resource utilization.

Programs: Research and Scholarship

To invigorate research under *The Rensselaer Plan*, we have extended our focus and taken risks to move into new domains of significance at the intersections of disciplines.

We have invested in five Signature Research Thrusts: Biotechnology and the Life Sciences;

Computational Science and Engineering; Media, Arts, Science, and Technology; Energy, Environment, and Smart Systems; and Nanotechnology and Advanced Materials—areas that intersect decisively with, and leverage, existing Rensselaer research excellence.

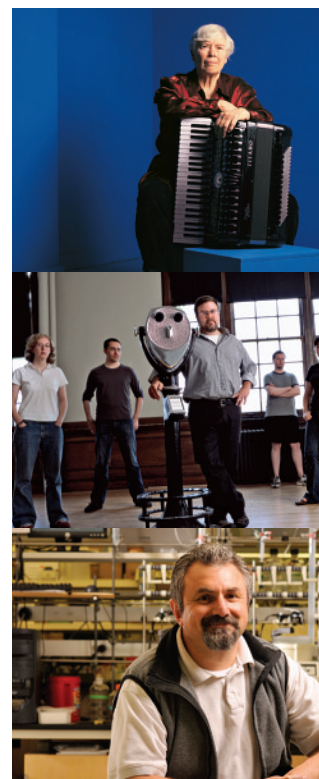
We have sought and hired scientific and engineering leaders to anchor research “Constellations”—multidisciplinary teams of senior and junior faculty, graduate students, and undergraduates—creating a nexus of intellectual and scientific capacity in key academic arenas.

To further bolster our research capabilities, focus, and impact, we have established new research centers that capitalize and expand upon our core strengths and focal areas, including energy research, lighting, stem cell research, the built environment, astrobiology, and social and cognitive networks. Out of these investments have come remarkable discoveries and innovations, including: understanding the structure of the Milky Way; unlocking the cell signaling and functional characteristics carried within polysaccharides; bioengineering synthetic heparin; creating the world’s darkest (most light absorbing) material; and developing sentient digital beings.

One significant result of our investments has been a threefold increase in sponsored research expenditures to \$100 million per year.

Programs: Academics

Several new degree programs have been launched, including undergraduate degree programs in Cognitive Science; Electronic Arts; Games and Simulation Arts and Sciences; Design, Innovation, and Society; Sustainability Studies; Bioinformatics and Molecular Biology; Information Technology and Web Science; and a new management concentration in accounting. B.S./M.S. co-terminal programs have been added. The MBA curriculum has been revamped. The M.S. in management curriculum has been expanded to include Financial Engineering and Risk Analytics. A new MBA/M.S. in Law has been established in collaboration with Albany Law School. A new B.S. in Biomedical Engineering/M.D. has been launched with





Albany Medical College. Several new Ph.D. programs have been initiated in Cognitive Science, Biochemistry/Biophysics, Architectural Sciences, and Electronic Arts.

Course work and extracurricular/co-curricular opportunities are more deliberately global in outlook, intellectually rigorous and sophisticated, and socially nuanced, creating an environment that promotes powerful, mind-opening new experiences, which foster intellectual agility and greater multicultural understanding.

Education in entrepreneurship is thriving across all schools and programs. We have created or enhanced the entrepreneurial content of more than 100 courses across all five schools. We have forged new curriculum tools, launched competitions, and generated flourishing undergraduate entrepreneurship research opportunities.

Our faculty, students, and staff actively embrace a culture of discovery, invention, innovation, and partnership. They discover, design, build, serve, and lead.

Because of the impact of our research, the talents of our faculty and staff, and the capabilities of our students, the Rensselaer degree is highly regarded. Our graduates are actively sought by industry, universities, and the public sector. They also create new wealth.

Programs: The Student Experience

Driven by *The Rensselaer Plan*, we have revitalized the student experience through the creation of a comprehensive living/learning approach.

The First-Year Experience (FYE) has transformed the transition of new students into Rensselaer. We have fostered a greater sense of community within the residence halls and off-campus living groups, enhanced support and counseling services, and streamlined student-focused administrative processes.

Indeed, the success of the First-Year Experience, and other initiatives, has given birth to a new living/learning paradigm: Clustered Learning, Advocacy, and Support for Students (CLASS).

We have expanded cultural offerings by broadening our program of lectures, forums, music, and the arts, by bringing programs into the residence halls, and by identifying opportunities for civic engagement.

We have re-energized our international educational and research outreach. We have launched REACH (Rensselaer Education Across Cultural Horizons), which sends undergraduate students abroad, and we have created exchange agreements in 12 countries with 22 institutions. The result for our students is a stronger affinity

Clustered Learning, Advocacy, and Support for Students (CLASS)

Stemming from our award-winning FYE program, we have developed a bold, comprehensive, and holistic residential college model that provides unparalleled developmental education and support in every sphere of student life—from our revitalized residential settings to our leading-edge classrooms and laboratories. CLASS builds upon both residential and time-based clustering. It supports personal growth, social and academic excellence, and preparation for leadership, by placing faculty and staff mentors and unique opportunities at the center of students' lives.

CLASS embodies these core themes: personal, professional, leadership, and cultural development; communiversity; and community. CLASS provides a programmatic framework for strengthened counseling, unique co-op experiences, academic skills building, cultural exposure, leadership opportunities, community building, and global engagement.

Many of these activities originate within the residential setting. The on-campus residential clusters ("Commons") have live-in Commons Deans who lead theme-based programming in the residential setting. The clusters include the "Greek

Commons." The Dean of the Off-Campus Experience extends CLASS precepts to students who do not live in university housing. There are Class Deans who work with each undergraduate class, beginning in the sophomore year, to support academic, professional, and personal growth as each class progresses through its undergraduate years. Our substantive commitment to the physical well-being of students is reflected in full-time athletic staff, the upgrade of women's ice hockey status to Division I, increased club and intramural sports offerings, and sophisticated new facilities, including the East Campus Athletic Village (ECAV).



An Example of Strong Collaboration

The Computational Center for Nanotechnology Innovations (CCNI), a partnership among Rensselaer, IBM, and New York state, created one of the most powerful university-based supercomputers in the world. The CCNI supports research in fields ranging from the life sciences to the physical sciences and engineering that involve massive amounts of data and/or require computationally intensive solutions. The capabilities of the CCNI support over 800 users, 200 projects, and 20 affiliated companies, which has led to greater collaboration with, and support from, enterprises small to large.

and connection to Rensselaer, a greater emphasis on community and leadership, and a more holistic development of mind, body, and spirit.

Platforms

The physical transformation of the Troy campus over the past decade has been the most externally visible sign of institutional metamorphosis. We have invested over \$725 million to provide, enhance, enable, animate, and secure the platforms, facilities, and Institute physical infrastructure for the benefit of students, faculty, and staff.

We have built four transformative platforms to anchor and animate Rensselaer education, research, and the student living/learning environment. The East Campus Athletic Village (ECAV)—the most extensive athletic facilities project in Institute history—together with the Mueller Center, broadens and elevates the Rensselaer experience for our scholar-athletes, for all of our students, and for the greater Rensselaer community. Three platforms specifically invigorate research and scholarship: the Center for Biotechnology and Interdisciplinary Studies, the Computational Center for Nanotechnology Innovations (CCNI), and the Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC). Both ECAV and EMPAC are LEED-certified complexes.

Partnerships

Engaging in productive partnerships with academic institutions, industry, government, and other entities enhances Rensselaer and reinforces its impact. We have increased significantly our collaborations across all industry and academic sectors, particularly with major enterprises in our core research and academic focal areas. One such example is the Computational Center for Nanotechnology Innovations, our supercomputing center.

2.3 Unique Strengths

Rensselaer was founded in 1824 “for the purpose of instructing persons ... in the application of science to the common purposes of life.” The people of Rensselaer have performed the research, developed the technologies, produced the innovations, and formed the enterprises that defined and accomplished the agendas of the 19th and

20th centuries. They continue to do so in the 21st century.

As Rensselaer moves toward its bicentennial, we will continue to build upon our unique strengths:

- Interdisciplinary inquiry
- Interactive learning
- Innovation and entrepreneurship
- CLASS
- Leading-edge platforms

Integrated effort has created *The Rensselaer Plan*. Integrated effort has moved us forward, and will continue to realize the vision articulated in *The Plan*.

We are a diverse community comprising a broad array of talents and perspectives. As we celebrate this diversity, we are united in pursuit of a common goal: greater prominence as a top-tier world-class technological research university with global reach and global impact.

2.4 Opportunity and Global Challenges

Our ability to educate the leaders of tomorrow, and to continue to have impact, requires attracting and retaining the best faculty, students, and staff. While we have realized extraordinary gains with limited resources, the gap between our aspirations and our means remains. To maintain access to a Rensselaer education for talented students, to continue the progress we have achieved in research and pedagogy, and to expand our national and international prominence, our endowment and financial support must grow to be comparable with other major research universities.

To strengthen the economic foundation of the Institute, and to enable Rensselaer to continue to attract and retain the best faculty, students, and staff, we must give even greater focus to philanthropy. While the *Renaissance at Rensselaer Capital Campaign* raised \$1.4 billion to implement *The Rensselaer Plan*, we must embark upon a new campaign to secure the financial underpinning of the Institute for the 21st century.



UNDERGRADUATE EDUCATION

A strength of Rensselaer lies in the ability to educate students to develop concepts and ideas across disciplines and relate them to global challenges.

As a fundamental intent, Rensselaer is committed to an undergraduate education that produces graduates known for their intellectual agility, multicultural sophistication, and global view. We do this through theoretical and experiential learning grounded in fundamental scientific and technological concepts, and linked to an appreciation of the social forces that shape human history. Institute programs are distinguished by innovative pedagogy; by partnerships with faculty in research, innovation, and entrepreneurship; and by a campus culture that creates a lifelong relationship with the Institute.

3.1 Resident Undergraduate Education

Excellence in undergraduate education requires programs that lead to meaningful and exciting futures; provide a firm grounding in the fundamentals; bridge knowledge to practice; emphasize discovery, reasoning, and action; and inculcate a global perspective and cultural understanding. We will:

- Enhance intellectual diversity by developing unique degree programs in architecture; management; and humanities, arts, and social sciences, that incorporate the rich scientific and technological strengths of the Institute, embracing as well the humanistic, artistic, and social dimensions of technology.
- Embed curricular and co-curricular activities designed to foster a culture of creativity, discovery, and innovation.

- Integrate outcomes assessment and evaluation into all education programs, ensuring timely and continuous improvement.

Outstanding programs are geared to talented students who will be enriched by, and add value to, Rensselaer and its mission. This requires a vibrant student community with diverse perspectives and experiences. We will:

- Target an undergraduate student body size of 5,000 students.
- Seek student diversity in its broadest and richest sense—ethnic, gender, intellectual, and cultural.
- Significantly broaden the geographic base from which we recruit—nationally and internationally.

3.2 Interactive and Digitally Augmented Learning

As new generations of learners arrive on our campus, there is an urgent need to develop distinctive new approaches to engage these students in novel ways that enhance learning outcomes, and ensure that all of our graduates are digitally savvy and responsible. We will:

- Create new modalities of interactive learning by making use of structured online content and generating new tools to access, aggregate, and analyze unstructured data.
- Develop “online virtual environments” that extend the student experience in time and space, to create digitally connected classrooms, discussion groups, and project settings with faculty and students at other universities, and with researchers, innovators, entrepreneurs, and policy-makers around the world.
- Use EMPAC, linked to other campus platforms, to develop and deploy highly developed immersive environments for digitally augmented learning.
- Expand the use of interactive assessment techniques to improve learning outcomes.

3.3 Participation in Research, Innovation, and Entrepreneurship

Creativity, innovation, and entrepreneurial thinking are critical to the Rensselaer ethos. To enable



Pedagogical Innovation

our students to attain their full potential within this context, it is essential that our graduates have a research experience. We will:

- Create the opportunity for research or independent study for all undergraduate students.
- Establish an Honors Program to recognize and nurture distinctive achievement in research.
- Promote “Entrepreneurship Across the Curriculum” as a differentiator of a Rensselaer education.

3.4 Clustered Learning, Advocacy, and Support for Students (CLASS)

We are creating, through CLASS, a transformative, integrated living/learning approach to support our students in their social and personal growth, academic excellence, and preparation for leadership. We will:

- Fully develop CLASS to anchor the developmental experience for all undergraduates.
- Use CLASS as a laboratory for pedagogical innovation.
- Integrate the Global Challenges as foundational elements of CLASS programming.
- Embrace diversity and inclusion as fundamental tenets of CLASS.
- Develop appropriate metrics to measure outcomes of CLASS.

CLASS provides a unique mechanism to build identity and affinity among students, and to create lifetime connections between Rensselaer and its graduates. We will:

- Foster:
 - Strong faculty/student mentoring relationships.
 - Enduring connections between students and alumni/ae.
- Celebrate achievements and honor traditions.
- Sponsor campus-wide signature events.

Rensselaer pioneered the studio classroom as an interactive and team-based learning model in the mid-1990s. We received several national honors for these enhancements of the student educational experience. Our “next-generation studio” was an evolved version of the “flipped classroom,” long before this concept was popularized by the Khan Academy. Now, we must create the next fundamental revolutions in teaching and learning.

The Multiplayer and Mixed Reality Classroom

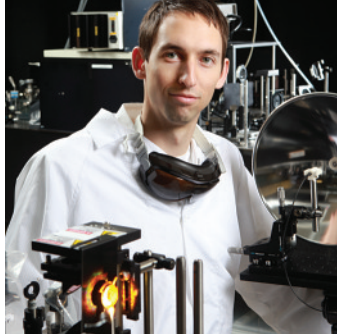
Rensselaer has developed an innovative pedagogical model, with classes designed as games, where the sustained narrative and applied gameplay engage students in an intensely interactive learning environment. Further, Rensselaer has EMPAC as a flexible immersive platform, which, coupled with our new Emergent Reality Laboratory, will augment storytelling and gameplay through an immersive mixed reality experience more ambitious than any to date. These platforms and advances in Artificial Intelligence and Cognitive Modeling allow us to add sentient synthetic characters in accurately rendered visual scenarios, through the use of virtual reality and motion tracking. The linkage of our high performance computing resources with immersive spaces allows for the creation of real-time digital environments that are critical to new pedagogical approaches for enhancing cognition and learning.

Cyber-Enabled Discovery and Learning

The use of ubiquitous mobile computing platforms at Rensselaer has led to innovations in teaching, learning, and mentoring activities. From the Web posting of supplemental course content, to live discussion boards and online office hours, to the use of social media across multiple mobile platforms, our faculty have succeeded in engaging the current generation of digitally sophisticated students in new ways. These new techniques will allow students to access a wealth of online content, including unstructured data from disparate sources, and to aggregate and extract knowledge in a manner that best promotes collaborative learning.

Honors Program

Active participation in research is at the very core of a distinctive undergraduate education. It sharpens curiosity, provides a natural avenue for creative endeavors, and enhances the students’ research promise in postgraduate studies. To recognize the most promising undergraduate researchers, Rensselaer plans to establish a Research Exemplars Program to bring greater intellectual engagement among selected undergraduate students, advanced graduate students, and faculty. The program would be directed at rising seniors who have demonstrated excellence in academics and research. The program requires an honors thesis.



GRADUATE EDUCATION

A leading technological research university must educate and prepare the next generation of research and professional leaders.

We will graduate those who have mastered the specialized knowledge of their chosen disciplines and who are gaining the maturity and experience to assume positions of research and technological leadership across multiple sectors.

4.1 Resident Graduate Education

Research provides the intellectual grounding and training for the next generation of scholars and technological leaders. This requires a vibrant graduate student body and a strong research-based resident graduate program that attracts the most talented students. We will:

- Target a resident graduate student population of 2,500, with 1,600 Ph.D. students.
- Strengthen the standards for admission to our graduate programs, drawing students from an expanded national and international base.

Research provides the intellectual grounding and training for the next generation of scholars and technological leaders. This requires a vibrant graduate student body and a strong research-based resident graduate program that attracts the most talented students.

- Dramatically expand federally funded graduate training programs, particularly at the intersection of basic and applied sciences, and engineering.
- Focus on comprehensive professional development for our graduate students.
- Align our professional degree programs with the Global Challenges, linked to our signature research thrusts.

- Integrate the use of interactive assessment techniques to improve learning outcomes for all graduate education and training programs.

4.2 CLASS for Graduate Students

A successful research-based graduate program rests in a residential experience that complements their training as scholars. As is the case for our undergraduates, CLASS must enable a distinguishing experience for our graduate students. We will:

- Establish a Graduate Center to provide advocacy, support, and guidance for graduate students, and their families, throughout their tenure at Rensselaer.
- Develop concomitant programming and support for postdoctoral researchers, acknowledging that the postdoctoral position represents the culmination of formal graduate education.
- Significantly expand residential housing options for graduate students and their families.
- Extend the precepts of CLASS to our working professional programs, including Rensselaer at Hartford.

4.3 A Distributed Rensselaer

We have witnessed the development of new technologically based pedagogical tools, the expansion of new knowledge at unprecedented rates, and a profound shift in the demographics and location of potential students. The ability to host content on the Web, as well as to engage collaboratively with students at remote locations, has opened new possibilities for delivering educational programs in different formats, in order to meet the learning needs of working professionals.

The Rensselaer Plan 2024 calls for a distributed Rensselaer that operates from its campuses in the Northeast, while reaching out to a broader audience of working professionals through regional sites, technology-enabled distributed education, and international presence and partnerships. We will:

- Position Rensselaer as the educator of choice in our areas of strategic focus through partnerships with major corporations, government



agencies, and other top-tier research universities.

- Create new sites in strategic national and international locations for the delivery of programs for working professionals, with a particular focus on emerging economies around the globe.
- Exploit our leading-edge interdisciplinary research to develop content for new graduate and executive programs for working professionals.
- Give particular emphasis to professional and executive graduate programs targeted to Rensselaer alumni/ae.
- Establish the Office for Advanced Professional Studies to create and coordinate new opportunities in postgraduate educational offerings for working professionals.

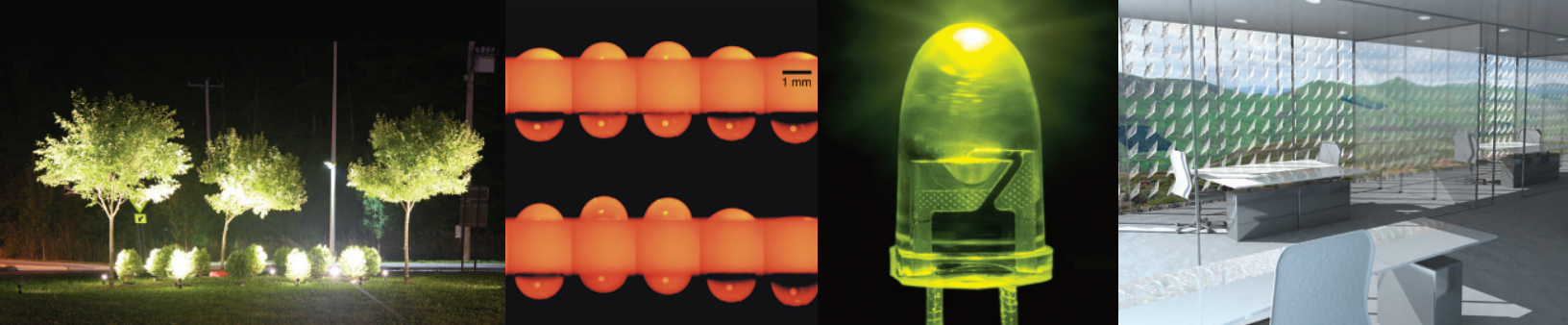
Rensselaer at Hartford

For more than 55 years, Rensselaer at Hartford has offered master's degree and certificate programs to working professionals in management, engineering, and computer science. More than 22,000 alumni/ae have earned advanced degrees at Hartford. Courses are offered on the main Hartford campus and at satellite campuses and corporate facilities. Instruction occurs in traditional classrooms and in a blended format.

We will:

- Grow the Hartford enrollment to 1,200 working professionals in degree programs.
- Significantly broaden the base of corporate clients served at Hartford.
- Link the Hartford educational offerings to the core research strengths of the Institute.





RESEARCH

The most significant transformation at Rensselaer over the past decade has been the creation of a research portfolio of a size, significance, quality, and prominence that positions us to impact Global Challenges.

Over the past 12 years, Rensselaer has solidified its place among the important technological universities of the 21st century by investing in topnotch researchers, broad-based programs, sophisticated research platforms, and strategic partnerships. Important new research has emerged from strategic investments in the Institute-wide signature research thrusts of Biotechnology and the Life Sciences; Computational Science and Engineering; Media, Arts, Science, and Technology; Energy, Environment, and Smart Systems; and Nanotechnology and Advanced Materials.

Rensselaer has developed a broad and unique network of outstanding research centers such as: the NSF Nanoscale Science and Engineering Center; the NSF Smart Lighting Engineering Research Center; the Lighting Research Center; the Center for Modeling, Simulation, and Imaging in Medicine; the Scientific Computation Research Center; the U.S. Army Research Laboratory—Social Cognitive Networks Academic Research Center; the Center for Cognition, Communication, and Culture; the Bioengineered Heparin Consortium; the Center for Architecture Science and Ecology; the New York Center for Astrobiology; the Center for Automation Technologies and Systems; and the Center for Future Energy Systems.

Our research efforts are undergirded by an integrated network of major research platforms, including: the Center for Biotechnology and

Interdisciplinary Studies; the Computational Center for Nanotechnology Innovations; the Curtis R. Priem Experimental Media and Performing Arts Center; and the Center for Materials, Devices, and Integrated Systems, which includes the Micro/Nano-Fabrication Facility and the Materials Characterization Core.

Collectively, the Signature Thrusts, centers, and platforms provide the basis for significant contributions in the years ahead.

As we enter the next phase of research at Rensselaer, it is essential to link our strengths in the five Signature Research Thrusts to the Global Challenges facing society.

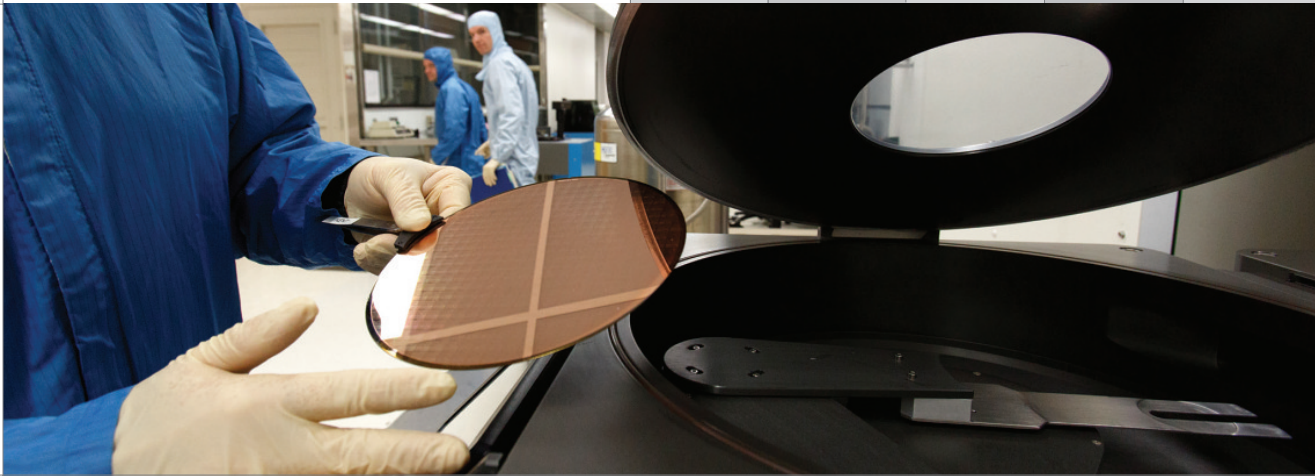
We now have a broad, collaborative and vibrant research community at Rensselaer, focused on the growing interface of the basic sciences, social sciences, and engineering. This provides the basis for innovative solutions to today's Global Challenges, including: mitigating disease; providing clean food and water; developing new sources of clean and renewable energy; and establishing a sustainable and resilient national and international infrastructure. We are inventing new routes to advanced manufacturing that lead to new products and processes. We are developing new materials for advanced computing, energy storage, and medicine. We are pioneering new technologies to manage the explosion of data from new communication networks and control systems. We are working to understand human cognition in communication and culture and to navigate the complexity of global markets.

We will address these challenges and opportunities to have even greater levels of impact in the years ahead.

5.1 Growth of Signature Thrusts

Our five Signature Thrusts and core research strengths will serve as the foundation for continued growth and impact. Therefore, we will:

- Grow research funding to \$250 million in annual research expenditures.
- Strengthen basic research endeavors across the Institute.

	Signature Thrusts and Global Challenges		SIGNATURE THRUSTS				
GLOBAL CHALLENGES	GLOBAL CHALLENGES		NANO	ENERGY	COMP/IT	BIOTECH	MEDIA
	Energy, water, food						
	Climate change						
	Infrastructure, sustainability, resilience						
	Global markets						
	Cognition, communication, & culture						
	Science, technology, & society						
	Disease & disease mitigation						
	Beyond silicon/advanced materials						
	Advanced manufacturing						
	Data/networks/HPC						
							
	Core Research Strengths Within the Institute Signature Thrusts						
	In Energy, Environment, and Smart Systems, we explore renewable technologies, energy efficiency, and the understanding of global environmental change to preserve the bio-diversity of the planet. Our excellence in Nanotechnology and Advanced Materials builds from the fundamental understanding—experimental, theoretical, and computational—of the underlying atomic and molecular properties of a wide range of nanostructured materials. We now are developing robust, affordable, and sustainable methods for	manufacturing new functional hybrid materials, and the hierarchical systems and products based upon them. In Biotechnology and the Life Sciences, we are creating new routes to drug discovery and development, and understanding the fundamental mechanisms of disease, from Alzheimer's and diabetes to cancer. The intersection of life sciences with the physical sciences and engineering fosters advances in areas such as biomanufacturing, antimicrobial surfaces and coatings, and regenerative medicine.	Enabled by the capabilities of the CCNI, Rensselaer has developed important programs in Computational Science and Engineering focused on high performance computing, big data, and data analytics, which supports research and innovation across a broad front. Research in Media, Arts, Science, and Technology facilitates new approaches to networking, advanced visualization, sensor design, haptics, and multiscale modeling and simulation, which are supported by the core capabilities of EMPAC.				



- Promote applied research that enables rapid translation of innovative solutions to key Global Challenges.
- Continue to recruit and support leading faculty in identified priority areas, with a goal of building the tenured and tenure-track faculty size to 500.
- Continue to invest in exceptional research infrastructure, including important core facilities within flexible research platforms.
- Establish partnerships through multiple sectors to expand the research reach and impact of the Institute.
- Position Rensselaer to shape the national and international scientific, technological, economic, and societal agenda.
- Measure key outcomes related to impact and leadership, including faculty recognition and sponsored research growth.

5.2 Addressing Global Challenges

In building on our achievements in Signature Thrust areas, in order to address one or more Global Challenges, we choose to address topics that are scientifically rich and challenging—from data analytics, healthcare technologies, sustainable infrastructure, and advanced manufacturing to cyber-infrastructure/security, big data, and environmental change. Therefore, we will:

- Strengthen existing and develop new Signature Thrusts that link to Global Challenge areas.
- Create new “constellations” of exceptional faculty, staff, and students in Signature Thrust areas linked to Global Challenges.
- Select and nurture new areas of focus that match our core strengths and physical infrastructure.
- Expand mechanisms for extramural research and activities with the federal government, industry, and non-government organizations.

Critical Research Umbrellas That Address Global Challenges

BEYOND THE INTERNET: DIGITAL MEETS REALITY

The ubiquitous availability of data and information, coupled with massive digital interconnectivity, has enabled new means of discovery, sharing of information, and enhanced analysis and data validation. Information extracted from massive data sets will elucidate relationships from seemingly disparate contexts, while computationally based modeling and simulation will enhance real-time decision making in research, education, business and finance, healthcare, and public policy.

Engineering Natural and Man-made Networks. Advances in computation, data aggregation and data analytics, and artificial intelligence provide the new underpinnings of social, cognitive, and computer networks that are enabling the study of the impact of such networks on society,

culture, and politics. Such research rests on interdisciplinary breakthroughs linking computer science, cognitive science, Web science, and the life and physical sciences.

CyberInfrastructure, Cyber-Security, and Technology-Assisted Decision Making.

A robust cyberinfrastructure depends on digital data management, stewardship, analysis, and preservation in industry and academia. Fundamental to this is cyber-security, which requires breakthroughs in algorithmic and system development and validation, and in network architecture design. Research rooted in synthetic immersive worlds and digitally enriched environments can enhance technology-assisted decision-making under normal and emergency conditions.

Data Analytics. Data-driven innovation is critical to addressing healthcare economics, quality of care, and therapeutics; translational medicine; advanced manufacturing; transformative materials; smart logistics; discovery and innovation; and workforce productivity and effectiveness. Exploiting semantic technologies to access and use unstructured data from disparate sources will yield unique insights across a broad spectrum.

INFRASTRUCTURAL RESILIENCE, SUSTAINABILITY, AND STEWARDSHIP

Addressing water, food, and energy security, public health, climate change, and the built environment is critical to a sustainable future. This requires a holistic approach to improve resilience, sustainability, quality of life, and the stewardship of our natural and man-made resources.



5.3 Intellectual Property, Technology Commercialization, and Entrepreneurship
Rensselaer has a long and successful history of partnering with industry. A strong approach to intellectual property, technology commercialization, and entrepreneurship, coupled with the fundamental strengths of our research, will facilitate the formation of substantive new public-private partnerships, and the launch of new enterprises.

With an expanding research base, we will cultivate an entrepreneurial spirit, and the motivation for innovators to pursue commercialization. We will:

- Expand and strengthen the Emerging Ventures Ecosystem (EVE) to foster the development of a broad range of startup ventures, including those based on important emerging technologies.

- Increase awareness of intellectual property, preserving its value in agreements that cover the use of intellectual property developed in research.
- Continue to develop intellectual property policies that encourage entrepreneurship, protect Rensselaer intellectual property, and allow the university to take equity positions in new ventures as appropriate.
- Create competitive licensing opportunities for companies interested in supporting sponsored research at Rensselaer.
- Ensure that intellectual property policies have adequate and appropriate conflict-of-interest and conflict-of-commitment provisions.

Emerging Ventures Ecosystem

The original Rensselaer incubator has been transformed into the Emerging Ventures Ecosystem (EVE). EVE works with faculty and students to exploit important intellectual property generated from their discoveries and innovations, to link them with investors, including alumni/ae, and to broker incubation space for startup companies throughout the New York Capital Region. EVE is part of the Institute-wide entrepreneurship council that includes the Office of Entrepreneurship, the Severino Center for Technological Entrepreneurship, the Rensselaer Technology Park, the Office of Research, and the Office of Intellectual Property, Technology Commercialization, and New Ventures.

Affordable Healthcare Technologies.

Our strengths in biomanufacturing of therapeutics, assistive robotics, and regenerative medicine allow partnerships with academic medical centers and biotechnology/pharmaceutical companies to accelerate low-cost strategies for safe and sustainable healthcare.

Transformative Materials. The manipulation of materials at the atomic and molecular scales, with advances in measurement and modeling, enables the development of new technologies for computational systems, energy storage and conversion, and information storage and transmission. New materials of interest today go beyond silicon to wide bandgap semiconductors and graphene, that enable new classes of electronic and optoelectronic devices. The understanding of materials at the nanoscale, coupled

with high performance computing, opens the possibility for the modeling, design, and development of entirely new materials.

Smart Logistics and Infrastructure.

Short- and long-distance transportation systems are improved through the use of advanced technologies that build on human behavioral and cultural patterns, municipal and societal structures, political and legal constraints, and social interactions. Advances in the development of multifunctional sensors and sensor networks, that are built into machines, devices, structures, and communication systems, which are coupled with real-time data analytics, can reduce energy consumption, lower environmental impact, and monitor infrastructural resilience.

FUNDAMENTALS OF DISCOVERY

The innovations needed to address Global Challenges rest on understanding the fundamental laws of nature, and on breakthroughs in mathematics and fundamental computer science. Important foci include: (1) Life in the Universe, which seeks to determine whether life is ubiquitous throughout the cosmos; (2) Synthetic Biology that views biological systems as combinations of malleable biological parts to generate systems with functions not seen in nature for use in chemical plants and under non-terrestrial environments; (3) Fundamentals of Matter and Energy that build on expertise in particle, condensed matter, and computational physics and astrophysics; (4) Cognition, Communication, and Culture; and (5) Data Science.

THE COMMUNITIES OF RENSSELAER

The university community comprises students, faculty, staff, administrators, and trustees; a broad group of regional, national, and international alumni/ae and friends; and business and professional partners. Rensselaer draws its vitality from, and adds vitality to, each of these communities.

6.1 The Diverse and Inclusive University Community

Gifted and accomplished people are the lifeblood of the best universities. Rensselaer draws bright and talented students. It attracts faculty who are recognized scholars, who receive peer recognition and research funding, who define the discourse in their fields, and who set scholarly and professional agendas in national and international arenas. Rensselaer hires staff who exemplify excellence, commitment, and integrity; many are leaders in their fields who bring vision, strategic focus, and managerial ability to their work. The Board of Trustees provides the sustaining stewardship, fiduciary oversight, and financial support that help Rensselaer achieve its plans and aspirations. Therefore, we will:

- Recruit, empower, and competitively compensate a diverse faculty and staff.
- Maintain the highest standards for hiring, promotion, and tenure of faculty with regard to research distinction, teaching quality, and service.
- Develop recruiting and admissions processes that identify the best students, who will succeed at Rensselaer and contribute to the Institute community.
- Provide students with an informative, exciting, and seamless process for joining our university.
- Recruit substantially more women, and ethnically and culturally diverse students.
- Focus participation in research as a means to cultivate underrepresented groups to pursue academic careers.

- Provide for our students an inclusive community, within a residential college model, that supports them in their personal growth and success.
- Provide all members of the Rensselaer community with the opportunities for professional development and growth.
- Create a lively community discourse on important cultural, social, gender, and geopolitical issues.
- Support a Board of Trustees that is philanthropically oriented, and reflects a rich mix of influence, backgrounds, and perspectives, as well as wealth, wisdom, and work.

6.2 Alumni and Alumnae

The Rensselaer community is fortunate to have 100,000 alumni/ae around the world who embody the global reach and global impact of the Institute, as well as many successful and eminent friends and colleagues in industry, academia, research, and the public sector. The success of our alumni/ae is rooted in the superior education they received at Rensselaer. Concomitantly, the reputation of the Institute is reflected in the accomplishments of its alumni/ae. Our success depends upon their continued interest, involvement, and philanthropy. Rensselaer seeks to engage and empower all alumni/ae as active and effective partners in the Rensselaer community.

To cultivate and strengthen lifelong partnerships among the Institute and its alumni/ae and friends, we will:

- Engage alumni/ae as partners and volunteers, and as recruiters, mentors, and employers of undergraduate and graduate students.
- Provide varied and comprehensive linkages that create a seamless transition from student to graduate, assist alumni/ae in career success, and reinforce connections between alumni/ae and their alma mater.
- Celebrate, recognize, and communicate the achievements of alumni/ae as leaders in academia, industry, research, and government.



- Encourage greater philanthropy from alumni/ae in order to enable the university to grow, expand, and prosper.

6.3 Neighborhood, City, and Region

Greatness in a university is inextricably linked to the vitality of the region in which it is situated. Rensselaer has contributed intellectual leadership and a history of technological innovation to the regions around its campuses. The Institute has a tradition of close and mutually beneficial relationships with its surrounding communities. We will:

- Foster and support an innovation ecosystem to bring ideas from the classroom and laboratory to the marketplace, launch and grow new businesses, and nurture and grow existing businesses, all while attracting new enterprises, people, and resources to the New York Capital Region and the Hartford Metropolitan Region.

- Redevelop communities adjacent to our campuses, by joining in carefully selected neighborhood renewal, housing, hospitality, and commercial projects with private developers and public agencies.
- Offer to the New York Capital Region, the Hartford Metropolitan Region, and our other communities, the student, staff, and faculty expertise to improve the quality of life and economies of our shared communities.

As we educate citizens of the world, we must extend our reach and impact. This requires that our students experience cultures that expose them to diverse outlooks and deepen their understanding of their own cultural heritage.



6.4 National and International Reach

As we educate citizens of the world, we must extend our reach and impact. This requires that our students study and experience cultures that expose them to diverse outlooks, expand their ability to communicate and collaborate across cultural boundaries, and deepen their understanding of their own cultural heritage. Faculty must be leaders on a national and global scale, collaborating with colleagues and placing graduates in top-tier organizations worldwide. We also seek a broad representation of international students and scholars on our campuses. We will:

- Seek prominent roles in shaping economic, technology, and research agendas on a national and global level.
- Forge strategic student exchange and faculty research partnerships with leading national and international academic institutions and research laboratories.
- Target our international endeavors to emerging economies.
- Expand corporate partnerships, especially with multinational technology-based enterprises.

ENABLING CHANGE

Achieving the goal set by *The Rensselaer Plan 2024* requires a relentless commitment to change.

The Rensselaer Plan enables change, and change defines *The Rensselaer Plan*.

The founders of Rensselaer Polytechnic Institute—Stephen Van Rensselaer and Amos Eaton—launched their “magnificent experiment” in 1824 with *The Rensselaerean Plan*, a historic statement that gave form to Professor Eaton’s vision for applying science to common purposes of life. *The Rensselaer Plan* is the 21st-century expression of this tradition.

The Rensselaer Plan 2024 articulates a strategic vision for the Institute, and delineates the means to achieve it. An “evergreen” plan, designed to be updated on a regular basis, *The Plan* guides our decisions, and provides the framework for school and divisional performance plans that serve as the basis for each year’s overall operating plan and budget. Performance plans define means and metrics, and when prioritized, create the case for major new resources. The means and metrics must link to key outcomes in each area that we pursue.

We will focus new resources—be they substantial new assets or savings from effective use of existing resources—to areas of the highest priority. Under *The Rensselaer Plan 2024*, discretionary, incentive, and new resources will be directed toward identified priorities in research, pedagogy, and other core activities.

7.1 Administrative Process Re-engineering

The Plan requires that we achieve high performance levels in key administrative processes in increasingly efficient ways. We will:

- Focus all portfolios on the goals and strategies of *The Rensselaer Plan 2024*.

- Build stronger cooperation and collaboration among portfolios and functional activities.
- Streamline administrative processes through better understanding and coordination of policies and associated protocols.
- Strengthen awareness and knowledge of the statutory and regulatory environment in which the university operates.
- Provide a high baseline quality of service for all members of the Rensselaer community.
- Maximize efficiency through the use of technology.
- Implement policies to foster creativity in research, while complying with statutory and regulatory requirements.
- Emphasize access, simplicity, and measurable outcomes in each administrative process.

7.2 Information and Cyber-Infrastructure

An integrated information environment is essential to teaching, learning, and research. We must enhance our first-rate information culture and powerful information infrastructure by valuing information and cyber-literacy at every level and implementing new methods for scholarly communication and electronic interactions. We will:

- Provide an integrated portfolio of education, access, and support technologies, policies, and services for teaching, learning, and research.
- Develop a sophisticated business analytics culture to improve distributed decision support throughout the Institute.
- Create new delivery models for improved user experience and increased accessibility, connectivity, reliability, and operational efficiency.
- Maintain a secure cyber-infrastructure that provides for appropriate levels of access, security, and privacy.
- Provide intuitive multimedia access to scholarly materials for research and education purposes.
- Partner with other universities, companies, and public agencies to augment the intellectual and capital resources of the Institute.

7.3 Physical Facilities

Rensselaer requires land, buildings, and infrastructure that undergird and complement all that we do. Academic facilities must be first-rate and support innovative pedagogy. Research facilities must have modern capabilities, services, and the flexibility to meet changing needs. Residential and recreational facilities for our students must be inviting and support a robust living/learning environment. We will:

- Develop the next generation Master Plan for platforms and infrastructure to support the Institute highest priorities.
- Build a new Center for Science to enhance educational and research opportunities in the sciences and enable expansion of other programs.
- Complete Phase II of the East Campus Athletic Village.
- Implement “best practices” for sustainability, throughout the university.

7.4 Advancing the Institute

Rensselaer is a dynamic, transformative institution. To expand our worldwide recognition and influence, we must refine our institutional branding and engage our constituents in ways that are of mutual benefit to them and to Rensselaer. Branding plays an important role in advancing the Institute. It begins with establishing value, which rests with the quality of the work of our faculty, students, staff, alumni/ae, and leadership. Therefore, we will:

- Promote a thorough understanding of the accomplishments of Rensselaer.
- Employ a strategic integrated communications approach to project a cohesive identity.
- Expand global name recognition.

7.5 Managing Financial Resources

Excellent stewardship and use of existing financial resources is a fundamental precept of a prudent university management. We will:

- Focus resources for maximum strategic impact.
- Base performance plans and annual operating plans and budgets on *The Plan*.

- Pursue aggressive risk management and regulatory compliance.

7.6 Expanding the Resource Base

Great universities enjoy philanthropic leadership by their Boards of Trustees and major philanthropic support from their alumni/ae. *The Rensselaer Plan 2024* requires substantial new investment. A multifront and focused effort led and supported by the President and the Board of Trustees of Rensselaer will be required to garner substantial new resources. To that end, we will:

- Mount a comprehensive fund-raising campaign to maximize giving at all levels, building upon the success of the \$1.4 billion *Renaissance at Rensselaer* campaign. Key targets are:

Doubling the endowment, to include:

- Significant endowment growth for student financial aid.
- Enhanced resources for Constellation and other endowed chairs.
- Competitive research start-up packages for new faculty.
- The new Center for Science.
- Phase II of the East Campus Athletic Village.
- New student residences.

- Achieve \$150 million in annual philanthropic support.
- Build and maintain the Annual Fund at a minimum of \$20 million a year.
- Develop a strong parent-giving program.
- Cultivate a philanthropic orientation among students.
- Pursue support from leading technology companies in priority areas.
- Pursue major federal and state support for specialized facilities and equipment.
- Mobilize and integrate the entire Institute community to achieve the financial goals of *The Rensselaer Plan 2024*.



LEADERSHIP IN THE 21ST CENTURY

The Rensselaer Plan 2024 is a renewed and expansive commitment to the future. It draws upon a sense of mission that is rooted in our founding principles and emboldened by our accomplishments over the past decade.

To realize our goals will require relentless focus, additional resources, and collaboration across our diverse communities. Together, we will attain greater impact and prominence with the support—intellectual and financial—of all members of the Rensselaer family: trustees, faculty, students, staff, alumni/ae, friends, and partners.

Rensselaer and its graduates have always had a significant impact on society. *The Rensselaer Plan 2024* will allow us to expand this legacy, through distinguished educational programs that prepare graduates to lead in an increasingly complex environment, research that addresses the most compelling global challenges, and a worldwide community of supporters that are bound by our common purpose of “Changing the World.”





Rensselaer

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