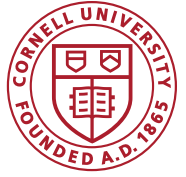


Cornell Engineering 2030



STRATEGIC PLAN

OUR VISION AND MISSION

Vision

Cornell Engineering is the largest and most prestigious engineering program in the Ivy League. The college is widely recognized for its rigor, commitment to excellence in education and research, and its longstanding legacy of educating students who go on to become leaders. Cornell Engineering **envisions** a future in which its student body and faculty reflect the gender, socioeconomic, and racial diversity of society. We endeavor to be a collaborative community of scholars and innovators who leverage the intellectual diversity of Cornell University to push the frontiers of knowledge and to address humanity's grand challenges. Our graduates will be recognized and valued for their commitment to excellence, enthusiasm for learning, integrity, ethical behavior, and ability to work and thrive in diverse teams.

Mission

Cornell Engineering is a highly collaborative and dynamic intellectual community known for maintaining all-around excellence in educating students, pursuing groundbreaking research, and nucleating technological innovations that impact people, communities, and the world. In this context, the college's **mission** is to:

- **Provide students with a broad and exceptional education that prepares them to excel in traditional and non-traditional aspects of engineering.**
- **Develop creative leaders and citizens capable of thriving in an increasingly complex world.**
- **Lead responsively and creatively in the discovery of new knowledge and in moving our most innovative ideas from laboratory to practice.**
- **Create a better future for all people by harnessing Cornell's vast intellectual and human resources to contribute solutions to the world's most complex problems.**



MESSAGE FROM THE DEAN

Our world is more connected now than at any time in history. Technology, ideas, information and cultures are colliding in new ways and at an unprecedented scale and complexity.

How do we educate students — at all levels — who are able to thrive in this environment? What investments in people, programs, and infrastructure are needed to establish Cornell Engineering as a center of excellence in innovating impactful solutions to the most difficult problems of our time, such as those relating to climate and energy systems, precision medicine and human health, and inequitable access to STEM education? How can we go about un-siloing engineering disciplines to catalyze convergent approaches that transcend disciplinary boundaries and contribute to positive change?

There is more at stake now in finding actionable answers to these questions than ever before.

To forge a better future, it is clear that we must create conditions that bring all minds to the table, irrespective of family income, race, gender, national origin, and discipline. Systemic inequality in these domains currently excludes a large, underrepresented population of talented and energetic people who need to be seen, heard, and included in the development of solutions to the many challenges we face.

Cornell Engineering is uniquely positioned to achieve meaningful and sustained impact. Together, with our students, faculty, alumni and in partnership with business and civic leaders, we're developing the ingredients needed to shape the future.

Our 150-year-old college's well-earned reputation for rigor and excellence in teaching and research, Cornell's deeply ingrained culture of collaborating across disciplines, and our demonstrated commitment to diversity and inclusion provide pillars upon which we'll build new paradigms for engineering education, research, and technology translation.

This is our time.

During the last year, our faculty and staff

identified the need to build an inclusive community — the creation of a college climate where students, faculty, and staff from all backgrounds are able to thrive and feel like they truly belong — as a high priority.

The planning process also identified priority directions in education and research that will focus investments in people, programs, and infrastructure for maximizing impact. Progress in the priority areas will be supported by robust but responsible growth in the faculty and student body. It will position Cornell Engineering for national and international leadership in multiple domains.

In education, we will invest in faculty and staff committed to innovating in the classroom to enhance learning. We will integrate leadership, ethics, and professional development education throughout our undergraduate and professional master's degree programs. We will develop distance learning options in order to improve flexibility for traditional residential students, as well as to increase the college's reach to non-traditional students where they work and live.

In research, we will create mechanisms for rewarding, promoting, and celebrating excellence. To un-silo engineering, we will recruit and mentor a cohort of Radical Collaboration faculty leaders who work across disciplinary domains in the college. We will invest in One Cornell Engineering initiatives that build new, more substantial bridges to Cornell Tech and Weill Cornell Medicine. Finally, we will modernize the college's aging infrastructure — building by building — to create state-of-the-art facilities that support excellence in old and new domains of scholarship.



Lynden A. Archer
Joseph Silbert Dean of Engineering
James A. Friend Family Distinguished
Professor of Engineering
October 1, 2021

CORE VALUES



Cornell Engineering is committed to developing an inclusive, **collaborative community** that values creativity, integrity and diversity, and leverages **excellence** in research, education, and technological **innovation** to address the most difficult problems that impact people, society and the world. These commitments shape our culture and create a sense of **purpose** and commitment for our staff, faculty, and students.

Excellence

We aim for excellence in everything we do. We produce distinctive results of exceptional quality by approaching our work with rigor, integrity, and the highest ethical standards.

Purpose

We strive to make a meaningful impact by leading, supporting, and actively participating in research, education, and outreach that contributes to a healthier, more equitable, and more sustainable world.

Innovation

We empower teams and individuals to defy expectations by prizing creativity, agility, and responsible risk-taking.

Community

We foster and sustain a diverse, engaged, and caring environment where all members feel like they belong, are heard, and can flourish. We communicate across differences with respect, and we embrace personal and professional growth and development.

Collaboration

We encourage and reward inclusive teamwork, in the conviction that solving grand challenges requires a range of perspectives and a collective effort greater than the sum of its parts.



BUILDING AN INCLUSIVE COMMUNITY, COMMITTED TO EXCELLENCE

Cornell University's founding principle of "... any person ... any study" underpins our tradition of inclusivity and our commitment to providing education to students irrespective of their background. This principle is alive in our time. As of 2021, undergraduate enrollments in the College of Engineering have achieved gender parity and the percentage of undergraduates from underrepresented minority groups is also consistently high. Slightly more than 1 in every 100 engineering bachelor's degrees awarded to a woman in the U.S. each year is now a Cornell Engineering degree. Cornell Engineering also awards approximately 1.4 of every 100 Ph.D. engineering degrees in the country each year.

We see significant opportunities for leveraging these important gains to catalyze progress over the next decade to diversify our graduate student body, faculty and, more broadly, engineering as a discipline. These efforts will require radical and sustained efforts at all levels — collaborations with teachers and high-schools for pipeline development at the undergraduate level; educational and mentoring support structures that ensure that students with diverse high-school experiences are able to thrive in the college; M.S. to Ph.D. bridge programs to recruit, matriculate, and graduate more diverse graduate students; and strategic investments in recruiting, hiring, and retaining members of the faculty and staff who reflect the broad demographic makeup of our student body.

Our goal is to invest in programs for student pipeline development, recruitment, teaching excellence, mentoring, and professional development to enable our graduates to meet society's current and future needs. We will also diversify the faculty by incentivizing recruitment, research start-up, and mentoring efforts to attract more representative talent to the professoriate. Our ambition is to build organizational strength at the interfaces to ensure vertical integration of Diversity, Equity, and Inclusion programs at the department, college, and university levels. Success will be measured by how well each effort supports our diversity goals and promotes belonging and inclusion, and through the impact of our programs in changing practices at peer institutions.

Cornell's deep commitment to fostering a culture that celebrates diversity, promotes equity, and intentionally builds an inclusive culture is a point of departure to achieve the following specific Cornell Engineering objectives:

- **Continue to recruit, support, and graduate a highly diverse undergraduate student body.**
- **Create bridge programs to increase diversity among domestic graduate students.**
- **Hire strategically to double the number of underrepresented minority faculty over the next decade and to increase the gender diversity of our faculty to match the diversity of graduate students in COE fields.**
- **Actively promote inclusion and belonging as core values throughout the college community.**

EDUCATING FUTURE-READY ENGINEERS



As they enter the workforce or pursue an academic career, Cornell Engineering graduates are known for their aptitude and excellence. Our commitment to nurturing and rewarding classroom innovations that improve student learning is the key to maintaining that quality and to setting our students up for career-long success no matter where their paths may lead.

We will invest in people, pedagogy, and infrastructure to ensure that, even as enrollments increase, the engineering education we provide is without equal. Cornell Engineering aims to produce graduates at all levels who are prepared to excel in any domain and to serve as innovative and ethical leaders in their chosen fields. We will pursue the following **Priority Education Directions** and related steps to achieve this goal.

Undergraduate Education

Promote, support and expect excellence in teaching and advising
We will recruit and hire tenure-track faculty with scholarship in engineering education while also building a culture of teaching that uses deliberate, research-based methods to optimize learning outcomes; hire teaching support specialists in departments and schools, improve college teaching infrastructure, and make better use of room scheduling; and develop a pilot program for one or more online undergraduate courses. All of these efforts will require investments in mentoring programs, infrastructure, and collaborations with experts across the university within the first five years of this plan in order to make meaningful progress.

Infuse professional education and experiential learning throughout the curricular and co-curricular experiences to develop technical and professional skills
To create a truly differentiated learning experience for Cornell Engineering students, we will expand training through the Engineering Leadership Program to all undergraduates. We will also explore strategies for integrating the Cornell Engineering Student Project Teams and additional professional programs in communications, entrepreneurship, and ethics into the undergraduate curriculum. Our long term ambition is to expand access to other professional and experiential learning opportunities and require demonstrated competency in relevant skills and behaviors as a condition for graduation.

Build an inclusive community to promote learning and well-being
We will convene a task force charged with identifying opportunities for developing a more connected and inclusive Cornell Engineering student community, and give particular attention to the opportunities for inclusion and community-building inherent in the implementation of recommendations related to improving teaching infrastructure, expanding experiential learning opportunities and enhancing professional education.

Reinforce diversity, equity and inclusion as foundational elements of Cornell Engineering
We will continue to recruit and graduate a diverse undergraduate class by expanding our recruitment partnerships, increasing affordability and elevating our support dedicated to student success. We will leverage faculty and staff training as a mechanism to improve teaching and advising, equity in access to professional education and experiential learning, and community-building as a means to inclusion and improved well-being.

Masters of Engineering (M.Eng) Education

Expand M.Eng. programming
We will offer more opportunities for specialization and greater flexibility for residential, hybrid, and remote learning experiences. We will also pilot, test, and build stackable certificate and degree programs that maintain Cornell’s rigor but provide flexibility in how, where, and over what time periods students are able to complete

requirements for M.Eng. degrees. We will create a vibrant professional internship program that becomes a hallmark of the M.Eng. experience, and we will develop pipelines with large minority-serving undergraduate engineering schools that encourage diverse students to pursue professional engineering degrees either as terminal degrees or as a stepping stone for advanced graduate studies.

Build robust distance-learning models

In a push to provide high-quality engineering education through a variety of degree and non-degree coursework, we will launch a library of remote learning experiences, including modules and stackable certificates that individualize a student's path towards the M.Eng. degree. By building these programs with attention to rigor and market needs, we will provide flexibility for Cornell undergraduates interested in either completing the M.Eng. degree or overlaying certifications with an undergraduate degree in areas that add value to their experience. Our efforts will also focus on attracting corporate clients and building strategic education partnerships with industry in order to meet the continuing education needs of the professional workforce.

Increase institutional support for long-term success

We will amplify the online presence of M.Eng. programs to help prospective students and industry clients navigate a suite of attractive options for learning and partnership; increase the number of M.Eng. scholarships to expand access to students from disadvantaged backgrounds; triple the number of core staff supporting M.Eng. programming to provide more customized support to a growing audience; and expand marketing and communication efforts to attract and retain students.

M.S. and Ph.D. Education

Bolster the recruitment of outstanding students

We will reimagine recruitment events and the college website to showcase a broader range of engineering graduate fields and offer more opportunities for all prospective students to connect with peers, programs, and role models. We will also reduce barriers to entry by considering steps, such as eliminating GRE score requirements, that could lower application costs, as well as other actions to reduce disparities.

Enhance community and development opportunities

We will introduce onboarding courses that build peer connections and develop professional skills; establish a student advisory group that can identify changing and emerging needs of the graduate student community; and provide focused support for career education, employer relations, and networking.

Expand existing professional skills programs

By increasing collaboration among the Engineering Learning Initiatives' Graduate Teaching Assistant Development Program, the Engineering Communications Program, the Engineering Leadership Program, the Sue G. and Harry E. Bovay Program in the History and Ethics of Professional Engineering, and the James McCormick Family Engineering Teaching Excellence Institute, we will expand opportunities and resources for graduate students.

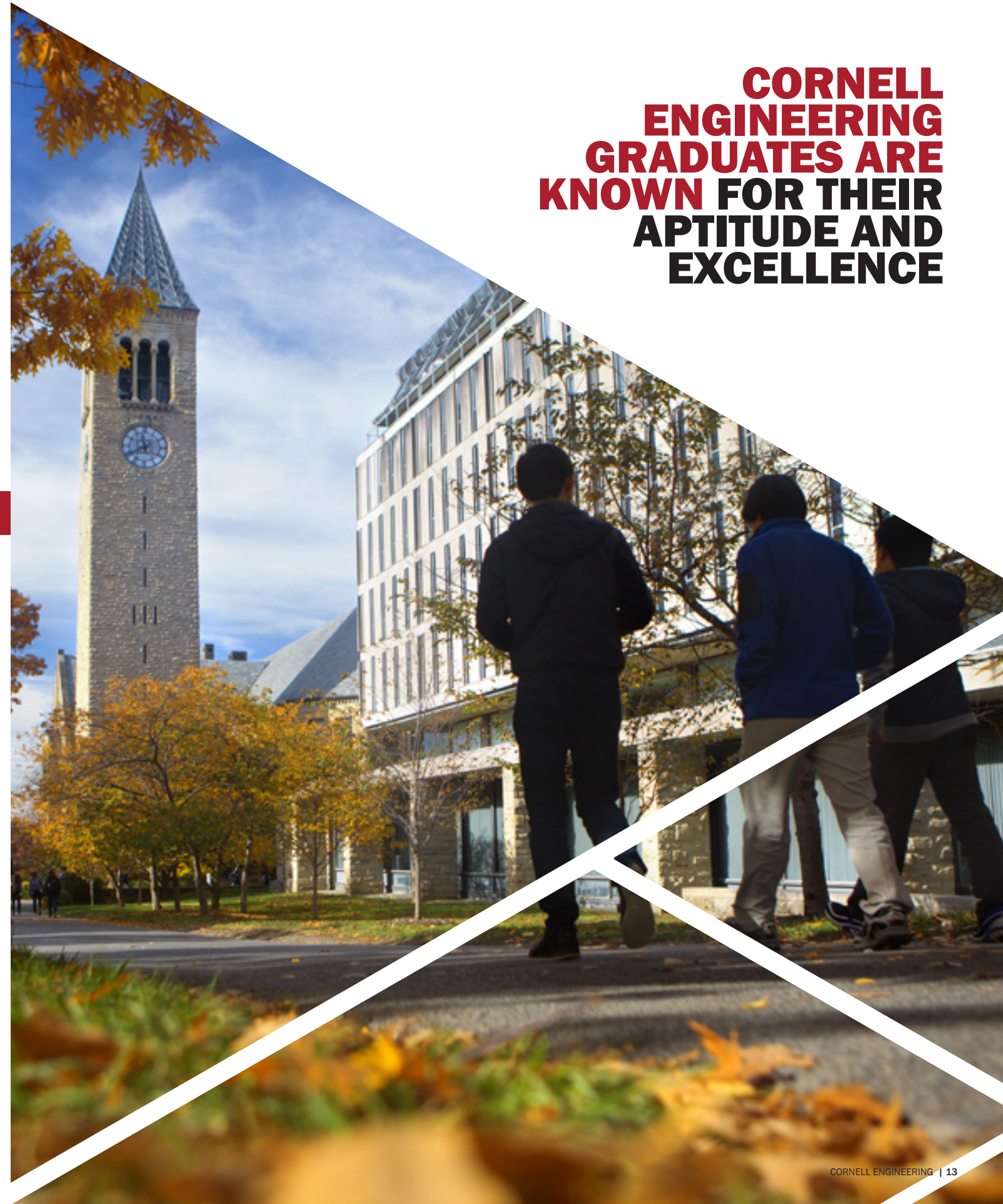
Invest in graduate student wellbeing

Our communications will be clear and consistent in order to encourage community-building, set standards for community interactions, and articulate clear expectations. We will provide learning opportunities, tools, and guidance that improves communication, mentorship, collaborations, and other key areas.

Promote diversity, equity, and inclusion

We will partner with national organizations and undergraduate institutions to connect diverse prospective students with Cornell early in their academic careers. By creating a peer mentoring program, expanding the distinguished lecturer series, and strengthening ties to industry, we will empower students and improve outcomes.

**CORNELL
ENGINEERING
GRADUATES ARE
KNOWN FOR THEIR
APTITUDE AND
EXCELLENCE**





PRIORITY RESEARCH DIRECTIONS

Cornell Engineering is known for its research innovations in five **Core Areas**:

- **Advanced Materials**
- **Bioengineering and Human Health**
- **Climate and Energy Systems**
- **Cyber-Physical and Autonomous Systems**
- **Computer and Data Engineering and Informatics**

Over time, investments have created faculty clusters, departments, multi-disciplinary institutes and centers, user facilities and support staff, and world-class infrastructure that span the Ithaca campus and contribute to the intellectual breadth and health in each of the Core Areas. We will build strength in these areas over the next decade through selective investments in support structures for grant writing and project management that catalyze collaborations college-wide. The plan also calls for investments in people, programs, and infrastructure in the following seven **Priority Research Directions**:

Climate, Energy, and Environmental Systems

Cornell Engineering is well-equipped to confront the 21st century grand challenges in climate and energy. We stand in a unique position to drive discovery and lead local, national and global efforts to protect people, the climate and environment.

Engaging with these issues requires a targeted approach so that the college can build on existing strengths and quickly gain momentum. Three critical areas at Cornell where we can lead are earth source heat, water systems, and CO2 removal. By operating across the realm from fundamental materials to field-scale demonstrations, we can speed the national energy transition and attract vital partners for building bigger, multi-institutional collaborations.

Through strategic hires — including those with leadership potential — and additional investment in programs and infrastructure, Cornell Engineering can galvanize and congregate efforts to combat climate change, develop sustainable energy and help make Cornell a carbon-neutral campus by 2035.

Data-Driven Decisions, Artificial Intelligence and Machine Learning

By positioning Cornell Engineering at the heart of Cornell's ongoing work in artificial intelligence, machine learning, and data science, the college will become an essential hub for attracting world experts, growing industry and government support, and bridging the efforts of other university-wide initiatives.

Cornell Engineering will focus on a Data Science in Engineering initiative that connects across all Ithaca-based colleges, as well as with Weill Cornell Medicine and Cornell Tech in New York City to create the cross-disciplinary collaboration and leadership necessary to advance scientific discovery, engineering design and application translation.

This initiative will help strengthen our ties to industry, give the college the opportunity to advance solutions with both urban and rural applications, invest in strategic, interdisciplinary hires, and expand educational components in the undergraduate and Master of Engineering levels that complement existing doctorate programs.

Advanced Molecular Design and Engineering

Cornell Engineering aims to become a national leader for molecular engineering through strategic hiring, infrastructure investment, and the establishment of a design and manufacturing institute. This effort will leverage existing investments at Cornell in the Cornell High Energy Synchrotron Source (CHESS), Cornell

NanoScale Science and Technology Facility (CNF), and the Cornell Center for Materials Research (CCMR). Through targeted collaboration that integrates efforts across the full molecular design, engineering, and manufacturing cycle, Cornell Engineering will become a key player in developing solutions for the grand societal challenges of the 21st century.

Continuous investment and renewal in our existing world-class fabrication and characterization facilities will enable faculty to perform cutting edge research and development, keeping them at the forefront of their rapidly advancing fields.

Cornell Engineering will capitalize upon advances in accelerating the design cycle by making a series of strategic hires of next-generation researchers in the emerging areas of synthesis and fabrication, characterization, and theory and computation.

Quantum Information Science and Technology

Cornell researchers already produce world-leading quantum research and stand ready to catalyze these efforts thanks to a strong culture of cross-college partnerships. Through existing programs, such as the Provost’s Radical Collaboration initiative, Cornell Engineering can advocate for hires with quantum-relevant experience in the realms of data science as well as nanoscale science and microsystems engineering (NEXT Nano) — which have already been identified as strategic areas for investment at the university level.

Cornell Engineering will expand the capacity for its overall performance in quantum information science and technology by linking the potential of theoretical and experimental researchers, investing in new infrastructure to support both the development of quantum materials and materials used for quantum applications, and to further push the limits of discovery.

Robotics and Autonomous Systems

Cornell University has already established a world-class Robotics at Cornell initiative that integrates cross-campus partners such as Cornell Tech and the College of Human Ecology with key faculty in Engineering. Our goal is to remain at the forefront of the fields of robotics and autonomy with robust and targeted branding and marketing efforts and a college-centric push to increase outreach and expand our stellar reputation in the field and with the greater public.

By investing in essential testing facilities such as adapting existing facilities to accommodate a variety of robotics needs and develop new spaces when possible in more wide-ranging spaces for testing devices that can fly, drive, swim and run, Cornell Engineering will become a national leader in the field.

Cornell Engineering will also look to enhance undergraduate and graduate education, as well as recruit leading experts to help build robotics programming and increase industry partnerships — especially in areas that drive collaboration with other unique units at the university, such as the Cornell Peter and Stephanie Nolan School of Hotel Administration; the College of Architecture, Art and Planning; the College of Arts and Sciences; and the College of Agriculture and Life Sciences.

Space Technology and Systems

Cornell Engineering is well-positioned to build on Cornell’s legacy of spacecraft innovation, exploration, systems engineering and entrepreneurship to lead in this era of New Space. In collaboration with the Department of Astronomy in the College of Arts and Sciences, we will leverage fundamental advances in autonomy, materials, space systems, robotics, additive manufacturing and propulsion science to push the boundaries of knowledge.

Building on the success of existing research activities, and in partnership with the Department of Astronomy, we will recruit top experts in key fields, including estimation and global navigation satellite systems, in-space assembly and manufacturing, and space vehicle autonomy and robotics.

Cornell Engineering will look to increase industry engagement to build connections between faculty and commercial partners and to understand the potential for solving emerging needs. Spurring industry connections will boost the college’s engagement with more areas of New Space development and play a bigger role in engineering designs, product development and company leadership. We will focus on providing high-quality educational experiences that empower graduates to become key innovators, entrepreneurs, and leaders in the New Space industry, as well as diversifying aerospace and space industries with the formation of student organizations committed to promoting diversity and excellence in aerospace.

Translational Biotechnology and Precision Medicine

Within Cornell Engineering, biotechnology and precision medicine sit at the sweet spot between engineering, physical sciences and life sciences, where cutting-edge research collaborations can be leveraged and the presidential vision for One Cornell can be realized. Our goal is to build upon the college’s legacy of engineering the tools of scientific discovery and advance its cross-disciplinary approach to working with science applications — particularly in relation to other areas of Cornell excellence, such as medicine, health, food, agriculture and the environment.

Developing and enhancing programmatic connections to Weill Cornell Medicine is a priority – enriching education, promoting discovery, fostering research and developing technology to improve human health. Existing partnerships, like the NIH-funded Cornell Physical Sciences Oncology Center on the Physics of Cancer Metabolism, are models for expansion into other areas of disease offering the opportunity to invest in new relationships for which a formalized structure could support both research and educational programs. Cornell Engineering seeks to establish complementary infrastructure for clinical translation on the Ithaca campus and facilitate ties with industry, entrepreneurship and venture funding.

We will pursue strategic faculty hires to boost existing synergies and expand key research areas such as disease (immunoengineering and cancer), computation and modeling, systems and synthetic biology, and the brain-computer interface. Comprehensive infrastructure covering undergraduate immersion, interinstitutional graduate degree programs, professional programs, disease centers, healthcare delivery and relationships to industry will be key contributors to advancing our success in this area.

These Priority Research Directions are designed to cut across the Core Areas of Excellence and to intersect societal grand challenges identified by the National Academy of Engineering and the National Science Foundation. An important aspect of our strategy is to concentrate investments that catalyze progress in a subset of the Priority Research Directions, identified in a competitive process, by nucleating and nurturing faculty teams to compete for institutes and centers.

We will strategically focus investments in faculty who have expertise at the intersection of multiple Core Areas and who — through their technical and institutional leadership — are able to bring together multi-investigator faculty teams to lead consortia and successfully compete for centers, institutes, and training grants.



IMPACTFUL INITIATIVES

As part of our strategy for success, we will invest in faculty, seed programming, and infrastructure that will further develop a subset of the Priority Research Directions that present particularly promising opportunities for significant impacts in the short and long term. In some cases, the investments will be sufficient to create institutes. In others, they will intersect with university-wide **Radical Collaborations**, subsequently enhancing their impact. Others still will serve as seeds to catalyze One Cornell-scale activities that leverage strengths in sister colleges — including Cornell Tech, Weill Cornell Medicine, the College of Arts and Sciences, and the Cornell Ann S. Bowers College of Computing and Information Sciences — to build strength in domains that span the university and that offer potential for profound societal impact.

Institute for Quantum Information Science and Technology

Cornell Engineering faculty are already involved in designing and characterizing the materials, models, sensors, and communication networks that will form the future of quantum-scale information science and technology. We have made significant investments in faculty who will innovate the theory, materials, devices and use-cases for Quantum Information Science and Technology. Additional investments in faculty, student training grants, and facilities will develop the critical mass of people and programs that will elevate this research at Cornell to new levels of impact and influence.

Product Manufacturing Institute

The field of molecular engineering is continually pushing the boundaries of knowledge. With an emphasis on building new materials that show promise for revolutionizing how energy is produced, used, and stored; for creation and delivery of medicines, vaccines and therapies; and for innovating materials designs for sequestering and converting greenhouse gas emissions, the societal impacts of our investment will be immediate, multifold, and meaningful. We also see opportunities for leveraging such advances to create new types of manufacturing paradigms and for educating and certifying students, including non-traditional students where they work and live.

Data Science in Engineering

Revolutionary advances in the ability to capture data at massive scales and to extract actionable information have had a transformative impact on the world. Technology has capitalized on these developments to fuel new industries and to reshape society in fundamental ways, accelerating scientific discovery and guiding engineering design across a broad cross-section of application domains. Cornell Engineering is uniquely positioned to educate the transdisciplinary engineers of the future by providing a data science-infused perspective across the engineering landscape for a truly 21st-century education. Additionally, radical collaborations with Cornell Tech, Weill Cornell Medicine, and other colleges will exploit the interplay between data-driven decisions and other disciplines to propel advances in autonomous vehicles, materials discovery, medicine and biomedical devices.

Energy Systems Institute

Reversing humanity's carbon footprint, without compromising quality of life in the developed world and economic growth in the developing world, has emerged as the grandest of the grand challenges of our time. The Cornell Energy Systems Institute (CESI) will bring together faculty, students, and infrastructure to develop materials, devices, and systems innovations that hold potential to address this challenge. The institute will specifically leverage existing and new investments in faculty, postdoctoral scholars, seed grants, course work, and graduate student fellowships to accelerate the pace with which energy systems research is translated into impactful solutions that facilitate bending of the carbon and warming curves.

Institute for Engineering Innovations in Medicine

The human impacts and complexities of diseases like Alzheimer's, cancer, and diabetes are driving the search for new treatment options. Future solutions will require contributions from a range of disciplines, easily transcending the boundaries of traditional academic structures. The strategic plan calls for creation of a Cornell Institute for Engineering Innovations in Medicine (CEIM) that will span Cornell Engineering and Weill Cornell Medicine. CEIM will catalyze research, education, and clinical care innovations at the intersection of engineering and medicine. It will also educate new types of physicians and engineers comfortable working across these disciplines and familiar with toolsets that facilitate data-driven decisions to more rapidly diagnose disease and deliver precision medicine.

ENTREPRENEURSHIP AND CORPORATE ENGAGEMENT

Cornell Engineering has a long history of engineering excellence; however, there is greater potential to translate our engineering innovations into the commercial sector. In 2021, we hired our first Associate Dean for Innovation and Entrepreneurship (I&E) with a mandate to organize, grow, and build an entrepreneurial culture and ecosystem within five years. The overarching vision for this new office is simple: to be the first college of engineering named when anyone asks, “Who does entrepreneurship right?”

To achieve this vision, we must create unique ways to activate and develop our college’s entrepreneurial spirit. We will do this through engagement with industry, through the entrepreneurial development of our college’s research talent, by maximizing the funding opportunities for new companies created by our community, and through entrepreneurial courses, workshops, and experiential learning opportunities for our students. Our plan is to identify, develop and continuously improve the best practices that optimally bolster our faculty and students’ entrepreneurial goals.

Industrial relationship optimization

Technology development is best guided when experienced industry partners share their development needs and product portfolio development efforts. The I&E team’s strategic plan to optimize Cornell Engineering’s interactions with industry includes the creation of research-specific faculty clusters that serve as a cohesive industry-facing research framework. These clusters also serve as an organizational tool to facilitate the development of new research centers, specifically those funded by industry partners. Other efforts include organizing mechanisms through which industry can conduct measurements on campus. The result of these and other efforts is increased faculty-level interactions with industry representatives, which will lead to greater research discussion and will result in increased research funding from industry.

Development of startup-ready talent

As our faculty and students become more entrepreneurial, Cornell Engineering is responding by building additional programs and infrastructure to best support and guide their efforts. For example, the I&E team is meeting with each faculty member, one-on-one, to build a database of our faculty research areas, how their research interfaces with industry, and how their research could be commercialized. Additionally, we are building an internal team to screen submitted research proposals and develop initial white papers for the faculty about how their proposal could nucleate the start of a new company. To support faculty who want to experience entrepreneurship first-hand, we are developing a faculty entrepreneurship sabbatical program to bring faculty onto the I&E team for a one-year immersion opportunity.

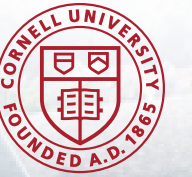
Entrepreneurship education

Cornell is positioned to be a leader in entrepreneurship education. By threading entrepreneurial principles into courses such as senior design projects, students will be able to connect hands-on engineering practice to entrepreneurial thinking. Through programs like the Kessler Fellows, Ph.D. Commercialization Fellows, and the eLab student business accelerator, students will have opportunities for extracurricular, internship, co-curricular, and for-credit experiential learning. Cornell Engineering also partners with the Women Entrepreneurs Cornell (WE Cornell) and Black Entrepreneurs in Training (BET) which recruit our women and underrepresented minority students through a stair-step approach to participate in entrepreneurship programming. Last, we envision expanding the college’s successful project teams model to connect students to challenges of local and regional startups, providing vehicles for community-engaged learning for students who want exposure to a startup but prior to being ready to start one of their own.

Entrepreneurship funding

While some engineering innovations have commercial potential, attracting early-stage funding can be challenging. Two efforts are underway to increase early-stage funding rates. First, the I&E team is organizing an internal Red Team to review and critique grant proposals. Second, the team is developing a data-driven approach to help guide our faculty’s new companies toward the most suitable venture capital firms, thereby enhancing their potential for successful funding. The anticipated outcome of the I&E team’s work is to build a sustainable organization that best serves the entrepreneurial efforts of our faculty and students. Cornell Engineering is daring to explore new ways to interact with industry, build our entrepreneur talent pool, and finance new companies based on our technology through a data-driven approach toward growing our technology translation successes.

**Cornell
Engineering
2030**



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CornellEngineering

Cornell Engineering
252 Carpenter Hall
Ithaca, NY 14853-2201

