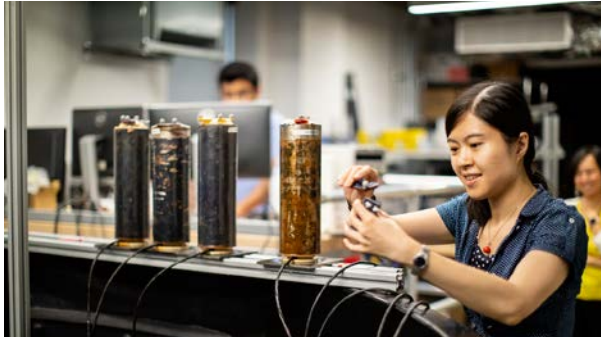




# ENGINEERING EXCELLENCE

A STRATEGIC PLAN FOR PENN ENGINEERING  
**2021-2025**





# A STRATEGIC PLAN FOR PENN ENGINEERING 2021-2025

## OVERVIEW

The School of Engineering and Applied Science at the University of Pennsylvania is well positioned to address current global challenges.

Resting on a proud history of innovation and firsts, Penn Engineering is also unique among its peers: It has strong academic and research ties with the 11 other schools at Penn, and it is situated in close physical proximity on a single urban campus. The resulting cross-pollination gives the School exclusive interdisciplinary strengths and sustains a culture of transdisciplinary collaboration.

In addition, collaborations and startups are conceived and enhanced by access to top industry partners and institutions in Philadelphia and the region, as well as other hubs on the East Coast, producing real-world results.

Guided by the framework in *Penn Compact 2022*, with the key tenets of Inclusion, Innovation and Impact, Penn Engineering will leverage and build on this foundation of excellence to be a leader in the profession.

***“The noblest question in the world is: What good may I do in it?”***

—Benjamin Franklin





# A STRATEGIC PLAN FOR PENN ENGINEERING 2021-2025

## MISSION

As a leader in education and research, Penn Engineering seeks a balance between the creation of knowledge and the translation of research into practice. Accordingly, our mission has two facets:

- Creating, integrating and disseminating knowledge in both the fundamentals and their application via an engineering education known for its rigor, breadth and relevance;
- Preparing students and trainees to become global leaders in higher education, research and technology fields while lowering barriers to access, thereby maximizing Penn Engineering's global impact as an international center of engineering excellence and a catalyst for technological innovation.

## VISION

Penn Engineering's central guiding principle is to attract the best talent in students and faculty, from diverse backgrounds and perspectives, to expand the frontiers of knowledge, to catalyze the translation of research to practice and to educate the next generation of responsible innovators, all in service of addressing the key challenges facing our world.

## VALUES

In conjunction with the fundamental tenets of *Penn Compact 2022*, Inclusion, Innovation and Impact, the Penn Engineering Community affirms the following shared values:

- We are a community of scholarship, creativity and curiosity, and value the pursuit of knowledge and professional development.
- We are a community of integrity and character that values what is honorable and honest.
- We are an inclusive community of diverse people and perspectives that values different viewpoints and styles of thinking.



# A STRATEGIC PLAN FOR PENN ENGINEERING 2021-2025

## CHALLENGES AND OPPORTUNITIES

Technology is essential to confronting the grand challenges faced by human civilization. Penn Engineering will become a catalyst for innovation by addressing challenges in areas as diverse as human health, climate, energy, food, urban infrastructure and education.

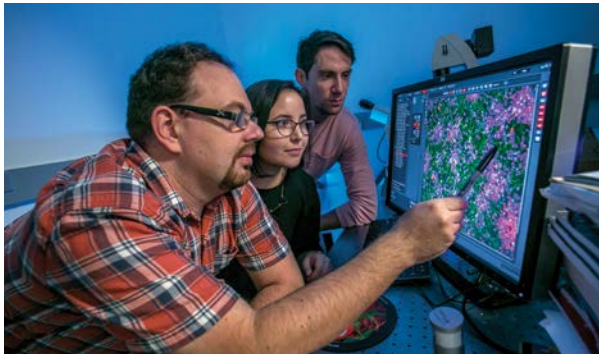
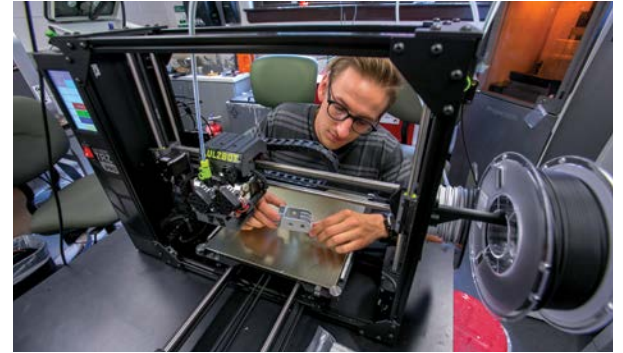
The lens through which engineers view problem solving is increasingly valuable to people in every field, discipline and profession.

Penn Engineering will expand its footprint to educate and train students across campus and beyond, reaching out to a more inclusive population of students and professionals.

Just as the skillsets of engineers contribute to the diversity of perspectives in fields as distinct as business, law and medicine, engineering must address the lack of and critical need for diverse backgrounds and perspectives within our profession.

Attracting a diversity of talent is an important goal for our discipline, and Penn Engineering can and must take a leadership role in this area. This can be done through expanding the K-12 pipeline in the Philadelphia area and surrounding region, and through the recruitment, retention and development of exceptional students, faculty and staff who hail from diverse backgrounds.







# PRIORITIES

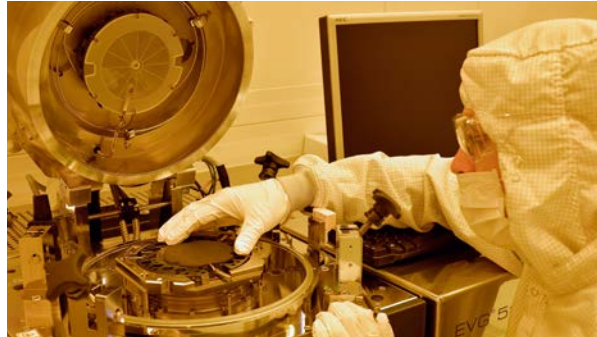
## INCLUSION, DIVERSITY, EQUITY AND ACCESS

It is vital that Penn Engineering attract, nurture and develop leaders in our profession that better reflect the makeup of our society.

We will do this through:

- expanded efforts in recruiting engineering students and building a better pipeline for career advancement;
- enhanced support for students, including professional advising and coaching, and increased financial aid ensuring that students graduate debt-free;
- creation of endowed professorships to attract top faculty;
- increased investment in faculty and staff recruitment and retention; and
- strong support for robust professional development for faculty and staff.





# PRIORITIES

## ACCELERATING IMPACT

Supporting our vision requires investment in emerging technologies that have the highest potential for impact on our planet and society, a commitment to modern spaces for collaborative research that connect to other schools on campus, and the development of new mechanisms to accelerate the processes of discovery and commercialization.

Penn Engineering will prioritize investments in the following domains:

- Collaborative research spaces that position us for leadership in the areas of:
  - data science, strengthening bridges to other schools and creating new ties to industry
  - energy and sustainability science, technology and policy
- Translational research:
  - collaboration with industry
  - building mechanisms to accelerate lab-to-market

- Signature initiatives in key areas that:
  - are central to engineering grand challenges in society and leverage synergies across campus, including health, quality of life, climate and energy, sustainable infrastructure, and food and water; and
  - address emerging technologies built on Penn's foundational strengths, including regenerative medicine; synthetic biology; novel materials; next-generation computing; quantum science and engineering; and autonomous systems that connect and link innovative devices to data and computation and information to knowledge and action.



# PRIORITIES

## EDUCATE, EMPOWER AND ELEVATE

As technology plays a vital role in all sectors of society, it is essential to invest in and support our activities as educators of all students, not just the engineering students on our campus. Penn Engineering will continue to engage local and global communities and further the mission of our school.

We will do this by:

- building new spaces for group student projects and state-of-the-art active learning classrooms, and creating design studios and maker spaces to support engineering, design and entrepreneurship;
- driving pedagogical innovation in online learning and investment in educational technologies to increase impact; and
- launching lifelong learning initiatives.



*"At Penn Engineering, we have taken our founder Benjamin Franklin's words to heart by continuing to change, adapt and innovate – staying ahead of the engineering curve."*

—Vijay Kumar, Nemirovsky Family Dean

