We will be known for our impact on the world.
DEAR PURDUE ENGINEERING FRIENDS,

In 2009, the College of Engineering announced its strategic plan, *Extraordinary People, Global Impact*. This plan sets aside business as usual and calls on the creativity and drive of our people—faculty, students, staff, alums, and friends—pursuing individual passions and shared goals. Through these efforts, we, Purdue Engineering, will be known for our impact on the world.

Since 2009, some remarkable, indeed game-changing, opportunities for strategic growth and expansion have occurred:

- In 2012, Purdue’s Board of Trustees endorsed a five-year plan for a landmark investment in the College of Engineering, prompted by significant growth in our undergraduate and graduate enrollments and in our research enterprise, and spurred by the national call for the U.S. to graduate 10,000 more engineers a year.

- In 2013, President Mitch Daniels launched the Purdue Moves initiatives, a set of big ideas that will drive innovation, achievement, and growth across the university and differentiate Purdue as one of the true STEM capitals of higher education. A key Purdue Move is the expansion of the College of Engineering—a move that builds on and broadens our earlier plan and accelerates the pace of change.

From this opportunity for dramatic growth has sprung this document: our new strategy for impact, *Extraordinary People, Extraordinary Growth, Extraordinary Impact*. It’s a fusion of the concepts strategic plan and strategic growth. Our strategic plan—our polestar—guides us as we engineer transformational change. Our strategic growth complements, leverages, and intertwines with that plan, amplifying its success.

In these pages, you will find the broad strokes of our plan for strategic growth, in the context of the strategic plan elements inspiring that growth. Our expansion plan will make Purdue Engineering one of the largest engineering colleges in the nation, an exciting achievement in its own right. But if all we can say after the plan’s execution is that we’re bigger, we will have missed a tremendous opportunity. Our blueprints for strategic growth are focused on making us *better*—bringing transformational change, sharpening our focus even as we grow, accelerating and amplifying our impact on the world.

We invite you to join us on the journey. We could not engage in this unprecedented opportunity without you, and we are deeply grateful for your support, enthusiasm, and goodwill.

LEAH H. JAMIESON
The John A. Edwardson Dean of Engineering
ONE VISION
We will be known for our impact on the world.

OUR MISSION
To advance engineering learning, discovery, and engagement in fulfillment of the Land Grant promise and the evolving responsibility of a global university.

THREE GOALS

› GRADUATES EFFECTIVE IN A GLOBAL CONTEXT
Our graduates will be prepared for leadership roles in responding to the global technological, economic, and societal challenges of the 21st century.

› RESEARCH OF GLOBAL SIGNIFICANCE
We will focus our talent and facilities on research with great potential for expanding the boundaries of science and technology and addressing the global challenges and opportunities of the 21st century.

› EMPOWERING OUR PEOPLE, ENRICHING OUR CULTURE
We will create a leadership culture and environment where the people of Purdue Engineering can dream their boldest dreams and collaborate in a place where those dreams can become reality.

FOUR STORIES
Over 400 faculty, staff, students, alumni/ae, and friends around the globe helped conceive and articulate the substance of our journey. Four stories capture the essence of our plan:

Always | ChangeTheWorld | Innovate | OurPeopleOurCulture | @PurdueEngineering
In 2011, the U.S. President’s Council on Jobs and Competitiveness called for colleges and universities to graduate an additional 10,000 engineers a year—engineers who will drive the innovation economy and fuel the United States’ competitive advantage in the global marketplace.

Purdue is taking bold action to be a significant part of this national imperative. The College of Engineering has seen growth year after year in student applications and enrollment. From 2006-2013, applications increased 62%. In that time, the percentage of beginning engineering students who were in the top quartile of their high school graduating class rose from 77% to 93%—meaning that both the numbers and quality of future Purdue Engineers are on the rise.

Through our planned growth, we will educate a greater number of creative engineers who are equipped to lead in an ever-changing, highly technical workforce. We will increase our capacity for ground-breaking discoveries. And we will bring even greater economic benefit to Indiana, the country, and the world.

Guided by our strategic plan, we will keep and enhance the best of what has always made Purdue great, as we create a new College of Engineering enabled by our growth.

In 2011, the U.S. President’s Council on Jobs and Competitiveness called for colleges and universities to graduate an additional 10,000 engineers a year—engineers who will drive the innovation economy and fuel the United States’ competitive advantage in the global marketplace.

Purdue is taking bold action to be a significant part of this national imperative. The College of Engineering has seen growth year after year in student applications and enrollment. From 2006-2013, applications increased 62%. In that time, the percentage of beginning engineering students who were in the top quartile of their high school graduating class rose from 77% to 93%—meaning that both the numbers and quality of future Purdue Engineers are on the rise.

Through our planned growth, we will educate a greater number of creative engineers who are equipped to lead in an ever-changing, highly technical workforce. We will increase our capacity for ground-breaking discoveries. And we will bring even greater economic benefit to Indiana, the country, and the world.

Guided by our strategic plan, we will keep and enhance the best of what has always made Purdue great, as we create a new College of Engineering enabled by our growth.

DRIVERS FOR STRATEGIC GROWTH:
WHY ARE WE GROWING?

Engineering is crucial to innovation, economic development, and jobs creation, and it is crucial to addressing the “grand challenges” facing our world in the 21st century: sustainability, energy, health care, security, the frontiers of exploration, and quality of life.

In 2011, the U.S. President’s Council on Jobs and Competitiveness called for colleges and universities to graduate an additional 10,000 engineers a year—engineers who will drive the innovation economy and fuel the United States’ competitive advantage in the global marketplace.

Purdue is taking bold action to be a significant part of this national imperative. The College of Engineering has seen growth year after year in student applications and enrollment. From 2006-2013, applications increased 62%. In that time, the percentage of beginning engineering students who were in the top quartile of their high school graduating class rose from 77% to 93%—meaning that both the numbers and quality of future Purdue Engineers are on the rise.

Through our planned growth, we will educate a greater number of creative engineers who are equipped to lead in an ever-changing, highly technical workforce. We will increase our capacity for ground-breaking discoveries. And we will bring even greater economic benefit to Indiana, the country, and the world.

Guided by our strategic plan, we will keep and enhance the best of what has always made Purdue great, as we create a new College of Engineering enabled by our growth.

PARAMETERS OF THE STRATEGIC GROWTH INITIATIVE

With carefully planned increases in students, faculty, staff, and space, Purdue Engineering will grow in strategic ways that impact how we educate, how we innovate, how we hire professors, and how we use facilities to enable new learning and discoveries.

- By 2016, Purdue Engineering will grow by 1,500 students, half undergraduate and half graduate, to reach an enrollment of over 7,750 undergrads and 3,500 grads. This represents a five-year increase of 15% and a ten-year increase of over 35%.
- From 2011 to 2016, the college will add up to 107 new faculty members, going from 358 to 465—a 30% increase.
- Up to 105 staff will be added—also a 30% increase.
- Eighty-eight half-time teaching assistants will be added to support the increased number of undergraduates.
- Our facilities needs—space—will be rethought from scratch. We will reenvision, repurpose, renovate, and in some cases build new in order to add 220,000 assignable square feet and gain 50% more efficiency through renovation of existing spaces.
ALWAYS
@PurdueEngineering

We will create and sustain the human, intellectual, and information infrastructures to connect people and Purdue for life.

IMAGINE…

...being young and getting your first glimpse of what engineering is all about.
...going to college and choosing from a palette of engineering experiences.
...tailoring your Ph.D. to your dreams and aspirations.
...connecting to Purdue through a unique umbilical cord—a two-way lifeline—throughout your changing career so you continue to learn and grow professionally and share your life-earned wisdom with faculty and future alumni/ae.

WE HAVE SET THE STAGE FOR LIFELONG IMPACT:

• The School of Engineering Education, the INSPIRE Institute for P-12 Engineering Research and Learning, EPICS High.
• Purdue’s Engineer of 2020 initiative and Global Engineering Program.
• Minority Engineering and Women in Engineering programs.
• First-Year Engineering’s Ideas to Innovation (i2i) Learning Lab.
• Engineering Professional Education’s lifelong learning programs.
• The HUB cyberinfrastructure that extends our virtual reach.

OUR KEY ACTIONS:

• Create the signature foundational pedagogy for P-12 engineering education.
• Integrate the Purdue Engineer of 2020 learning outcomes into the curriculum—in addition to strong fundamentals, career skills such as interdisciplinary design, leadership, innovation, multicultural aptitude, flexibility during change, entrepreneurship, and ethics.
• Prepare today’s graduate students to be tomorrow’s Faculty of 2020.
• Strengthen and evolve international experiences and dual-degree programs.
• Design interdisciplinary professional master’s programs, personalized relevant Ph.D. programs, and expanded avenues for career-long learning.
ChangeTheWorld
@PurdueEngineering

We will reshape our research universe and bring solutions to the globe.

IMAGINE…

...faculty and students whose research shapes the world—tackling problems from the nanoscale to the scale of space exploration and from biofuels to biomechanics to biodiversity.

...faculty who are connected not only to the technology, but to the implications of that technology on our economy, our built infrastructure, human development, national security, and international relations.

...research strengthened by deep partnerships with industry, federal agencies, and national and international labs.

WE HAVE SET THE STAGE FOR RESEARCH IMPACT:

• Growth in our senior-most faculty and interdisciplinary signature areas.

• New facilities in Discovery Park and engineering: Birck, Bindley, Mann, Forney, Bowen, Jischke, Armstrong, Gatewood, Herrick, Wang.

• nanoHUB.org, which supports unprecedented sharing of research tools.

OUR KEY ACTIONS:

• Create a Systems of Systems Institute to lead the world in understanding intricate connections—in healthcare, energy, aerospace, transportation, defense, and more.

• Provide high-quality lifecycle support by placing researchers at the heart of research galaxies with unique professional structures, agile space repurposing, flexible staffing to launch large-scale projects, and re-classifying of jobs to meet the needs of grand-scale research.

• Double research productivity and increase our voice in setting the national research agenda.

• Enrich our collaborations by growing global fellows and exchange programs.

• Use the web effectively to share our research story more widely.
We aspire to contribute to the strength of Purdue University and address critical national and global challenges through the following eight goals:

1. **Contribute to increasing the national capacity for innovation and economic development**
   With a growth in enrollment of over 1,500 students, by 2016 Purdue will graduate more than 5%, or 1 in 20, of the 10,000 more engineers a year called for by the U.S. President’s Council on Jobs and Competitiveness.

2. **Amplify our impact**
   We will become the third largest College of Engineering both in number of undergraduates and in number of graduate students. Our larger student body, faculty, and staff will enable more ground-breaking discoveries and more inventions delivered to market.

3. **Enhance our students’ experience**
   Improving the student-to-faculty ratio from 21.2 to 17.6 will enhance the quality of interactions between faculty and students.

4. **Increase our diversity**
   Diversity is a core value of the College of Engineering: the quality of our innovation is directly tied to the diversity of the people who sit around our table. Faculty hiring and student growth at this scale are opportunities to make dramatic and transformational gains in our diversity.

5. **Expand our capacity for innovation in engineering education**
   Purdue is positioned to become the world leader in demonstrating how hands-on experiential learning can happen at scale.

6. **Sharpen the focus on what Purdue Engineering is known for**
   Faculty are the centerpiece of our expansion: they define who we are and who we will become. Over the course of our strategic growth, we will hire faculty through a number of approaches, including traditional disciplinary hiring, cross-college cluster hiring, and recognizing “rising star” mid-career professors. A key component of our faculty hiring is the building of “preeminent teams” which will incorporate the best attributes of the entrepreneurial world—agility, responsiveness, energy—and position Purdue for recognized leadership in research of global significance.

7. **Expand engagement**
   Purdue will become the partner of choice for industry, the university of choice for entrepreneurs, and the national model for statewide economic development.

8. **Enhance the reputation of the College of Engineering and of Purdue**
   Our growth will enhance the reputations of both the college and university.
As we move forward with our strategic growth initiative, Purdue Engineering must remain flexible in order to seize opportunities as they arise. What will remain constant, however, are the principles that guide us:

- Strive for transformational change
- Contribute to the missions of learning, discovery, and engagement
- Plan for the long-term future
- Use growth as an opportunity to broaden our diversity
- Improve quality
- Inform decisions by data
- Generate creative opportunities for growth
- Ensure resources for sustainable growth
- Have a positive impact on the climate for the whole college
- Be inclusive in our discussions and decision making
- Promote and leverage significant gift funding
- Provide economic benefit to the State and its citizens
INNOVATE
@PurdueEngineering

We will build an innovation ecosystem and nurture a culture of creativity that takes us far beyond where we are today.

IMAGINE...
...an environment where collaborations cut across disciplines in unexpected ways.
...a place where agile, fluid teams tackle specific problems or grand-scale long-term challenges.
...Purdue Engineering as the destination for students and world-class faculty who want to solve problems through risk-taking research and a fearless search for answers—and through entrepreneurship, spur economic development and benefit society
...deliberately pursuing research creativity through a new model for innovation and collaboration.

OUR KEY ACTIONS:
• We envision a three-layer innovation ecosystem that will change our traditional research culture to one that connects creativity and risk-taking to high-impact outcomes and engagement.
• The base layer is the idea zone, where an “innovation institute” and “skunkworks” environment provide resources, rewards, and recognitions that foster creativity and intellectual risk.
• The middle layer is the collaboration zone or “collaboratory” to connect dynamically the appropriate human assets for the topic of interest—internal actors (faculty, staff, and students) with external actors (national labs, policy bodies, etc.). A lean centralized staff plus agents—“matchmakers”—within the schools facilitate, catalyze, and launch interdisciplinary teams and support activities such as “Talks in Plain English” to build bridges across disciplines.
• The top layer is the exchange zone, where we touch the world and amplify our impact by building deep, sometimes sole source partnerships with industry, defense agencies, policy bodies, and global labs and governments.
ENGINEERING EXPANSION:
A PURDUE-WIDE OPPORTUNITY

Engineering’s expansion marks a singular opportunity for Purdue University.

- Building the reputation of both the college and the university
- Reinforcing the Purdue Moves theme of STEM excellence
- Pioneering new approaches to faculty hiring
- Exploring high-quality, efficient, energy-efficient, flexible, and collaborative space in an academic setting
- Leading in demonstrating how experiential education can be done at scale
- Gaining preeminence through research collaborations
- Grounding all these outcomes in innovation and impact.
OurPeopleOurCulture
@PurdueEngineering

We will engage our people to transform our culture, because empowered people radiate passion that energizes them to change the world.

IMAGINE…

...having the courage—the sheer guts—to revolutionize our culture.
...an environment that supports boundless thinking.
...a place where each person can dream their farthest-reaching dreams—and know that their institution wants to help realize those dreams.
...a culture that facilitates all of our stories.

We have set the stage for a "lead-the-world" infrastructure: In the past decade we proved we can do things differently—we branched out deliberately and across disciplines; we competed successfully on the national stage. We have shown that we are ready to change our culture to allow us to make the next “giant leap” forward.

OUR KEY ACTIONS:

• Take a lesson from our first-year student programs and create a learning community for new faculty.
• Build our capacity for leadership sabbaticals and fellowships and create an “Influencers in Residence” program.
• Support our research ambitions by launching a highly effective post-award process; creating mental space via research semesters, team teaching, and banking research credits; and developing the “Staff of 2020.”
• Create a Center for Diversity to foster new synergies and a Diversity Certificate for faculty and staff professional development.
• Better align our hiring and promotion and tenure practices with our values.
• Assess our progress with external reviews and a semesterly report card.
Purdue is making a significant investment in the College of Engineering to support the dramatic growth in our faculty, staff, undergraduate and graduate student numbers, and facilities. The full magnitude of transformational growth we are striving to achieve can be accomplished only by partnering with our alumni/ae, friends, and corporate and foundation partners. With the help of extraordinary people like you, we can build on the university’s investment to achieve extraordinary growth and extraordinary impact.

Goal for New Student Support Endowments .................................. $45M+

> **Endowed Undergraduate Scholarship - $25,000+**

Many students rely on scholarships to fulfill their educational dreams. An endowed scholarship (minimum of $25,000) plays a critical role in enabling the College of Engineering to continue its commitment to quality and diversity by recruiting and retaining the best, most creative students.

> **Endowed Graduate Fellowship - $50,000+**

Attracting outstanding graduate students enables first-class research and education and bolsters the reputation of the College of Engineering, which in turn attracts high-quality faculty and research funding. To be competitive, we must be able to offer our graduate students tuition and living stipends. A minimum endowment of $50,000 will provide partial support for a graduate student; a suggested endowment is $100,000. A minimum endowment of $1,000,000 is needed to provide full support for a graduate student.
Goal for New Professorship

Endowments ........................................ $30M+

> **Endowed Professorship - $1.5M+**

At the heart of every great university is a world-class faculty. Over its long history, Purdue has been a prime example of how faculty—through exceptional teaching and innovative research—have brought distinction and recognition to the university. An endowed professorship will help attract and retain top faculty.

> **Rising Star Faculty Endowment - $500,000+**

Designed to recognize, retain, and recruit “rising star” faculty members, this is a prime opportunity to acknowledge the achievements of mid-career associate and full professors who have distinguished themselves among their peers but are not yet candidates for full-term named professorships. Recognizing faculty in this stage of their careers is especially critical for retention, as these individuals are frequently recruited by other institutions. This will also provide a strategic edge in recruiting outstanding candidates to Purdue during this period of strategic growth in the College of Engineering.

Goal for Enhanced Facilities ................................................ $75M+

World-class education and world-changing research require world-class facilities. New and renovated spaces will allow us to recruit and retain top students and faculty. Bold renovations—more akin to transformations of existing spaces—will create high-tech active learning spaces and will enable research spaces that foster interdisciplinary, collaborative research, house state-of-the-art equipment, and support Purdue’s entry into emerging areas. Projects include a new flexible research lab facility, expansions of the Martin Jischke Hall of Biomedical Engineering and Zucrow Labs, equipment and facilities support for preeminent teams, and renovation/ transformation of core spaces in CE, ECE, ME, Grissom Hall, and the Potter Engineering Center.

continued >
INVESTING IN OUR GROWTH, INVESTING IN OUR DREAMS

Engineering’s strategic growth builds on the vision that we have created in the strategic plan. The $150M+ goal for growth joins the ongoing strategic plan goal of $500M+.

**StrategicPlan**
@PurdueEngineering
$500M+

Continuing to build our base of scholarships and fellowships, international and experiential programs, Ideas to Innovation (i2i) Learning Labs, the Innovation Design Center student projects facility, learning HUBs, “Faculty of 2020”

**Always**
@PurdueEngineering
$160M

Endowed professorships, global fellows and scholars, research semesters, technology-policy partnerships, Systems of Systems Institute, world-class research facilities, research HUBs, post-award support and research galaxies

**ChangeTheWorld**
@PurdueEngineering
$120M

Innovation ecosystem: Innovation Institute, Skunkworks, collaborative; endowed innovation fellows and agents; Alumni/ae Classroom Innovators

**Innovate**
@PurdueEngineering
$110M

Leadership sabbaticals and fellowships, faculty learning communities, national and international faculty rotations, “Staff of 2020,” Center for Diversity

**OurPeopleOurCulture**
@PurdueEngineering
$90M

Unrestricted funds to allow agile response to new opportunities
Our strategy for impact is a bold roadmap for achieving the dreams of the faculty, staff, students, and alums of Purdue Engineering.

JoinTheAdventure

WWW.ENGINEERING.PURDUE.EDU