

College of Engineering

Purdue University Board of Trustees
August 2019

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Pinnacle of Excellence at Scale

- Land-grant mission of **access** and success in education
- Global impact of **excellence** in research and innovation
- Largest top-10 engineering college in the United States
 - 7 of 11 Schools in top-10 in the country
- Challenges and Opportunities:
 - Scale
 - ROI
 - Grow (even) bigger and (even) better!

Reach New Heights, Two Years in a Row

- Fall 2019: largest enrollment ever: ~9,800 undergrads, ~3,700 graduates
 - In 2017-2019: added ~1,000 undergraduates
- 2018/19: first time external research exceeded \$200M: \$221M
 - Added \$39M year to year (From 2017 to 2019: 52% jump)
 - Towards doubling research funding from 2017 to 2022
- 2018/19: first time philanthropy exceeded \$200M: \$209M
 - Ever True: \$1.026B, exceeded target by \$326M or 47%
 - Day of Giving: record 2600 gifts and \$20M
- 2018/19: record numbers of patents
 - Issued: 123
 - Filings: 406 (From 2017 to 2019: 40% jump)

Strategy: Innovate Learning at Scale

- Surprise jumps in yield rate, two years in a row: **additional ~1,000**
 - Thank you for Gateway Complex!
 - Undergraduate curriculum revamp and “GRIP” residential learning experience
- Graduation records in 2019:
 - Record number in graduation rate
 - First time minority graduation rate exceeded college-wide average rate
 - Record number of graduates, including women engineers
- Graduate programs:
 - Professional Master’s: tracking 5X from 2017 to 2020
 - New joint degrees with Krannert and IU School of Medicine

Strategy: Innovate Learning at Scale: Online

- **Stackable online badges**
 - Jointly developed and co-branded with industry partners
 - Intel-Purdue Online Badge in Cybersecurity
 - A pipeline of a dozen new badges
- **B2B agreements:**
 - With NCKU (Taiwan), a Middle East university, Cummins...
- Affordable master's degrees in ECE/ME/CE
- Innovation in virtual labs and data analytics: 5 pilot lab courses
- Towards “10x 10 x 5” by 2025

Strategy: Best Research at Virtual-Physical Interface

- 2017.9: **NSF** ERC: CISTAR \$40M (Fabio Reibero in ChE)
- 2018.1: **SRC-DARPA** JUMP: C-BRIC \$40M (Kaushik Roy in ECE)
- 2018.8: **USAID** LASER: PULSE Consortium \$70M (Arvind Raman in ME)
 - Largest single-award in College history
- 2019.4: **NASA** STRI: RETH Institute \$15M (Shirley Dyke in ME/CE)
- 2019.5: **IARPA**: HACCLE \$10M (Milind Kulkarni in ECE)
- 2019.6: **TSMC-IEDC**: Center of Secured Microelectronics Ecosystem \$10M

- 2019.4: Nation's first fully digitized nuclear reactor approved
- 2019.6: Nation's fastest hypersonic tunnel funded
- Tracking major wins in hypersonics, energetic material, composite

Strategy: Empower Industry

- 2018.6: **Keating Supercar**
- 2018.9: **Schweitzer Engineering Laboratory**
- 2019.5: **Saab**
 - Sole winner from national site selection
- 2019.6: **Indy 5G Zone**
 - Partnering with IEDC, AT&T, Verizon, 5G Caucus, Indiana startups, Industrial Internet Consortium to launch “Indy 5G Open Acceleration Zone”
- 2019.7: **Cislunar Space**
 - Partnering with National Space Council, NASA, AIAA, private sector, VCs to launch “Cislunar Hub”

Small steps and giant leaps by Boilermakers!



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150 YEARS OF
GIANT LEAPS