Whiting School of Engineering
Strategic Plan

Vision
The Whiting School of Engineering will be a driving force in transforming society as a leader in engineering education, through the creation and dissemination of knowledge, and activities that improve the human condition.

Mission
The Whiting School of Engineering’s mission is to:
- Provide an outstanding engineering education that is innovative, rigorous, and relevant, and that prepares its graduates to be 21st-century leaders.
- Advance the boundaries of engineering inquiry through research and the creation and dissemination of knowledge that improve the well-being of society.
- Solve important societal problems through translational activities.

Values
The Whiting School of Engineering is a diverse and inclusive community that values:
- A scholarly, collaborative, and entrepreneurial environment in which innovation, creativity, risk-taking, and the ethical practice and applications of engineering and technology are paramount.
- The importance both of the fundamentals of engineering and the creation and dissemination of transformative knowledge.
- Contributing to the betterment of society.
- Its members’ intellectual agility and their capacity to draw upon their wide range of technical and non-technical skills and abilities to solve societal problems.

Goals
In all of its activities, the Whiting School of Engineering will identify and strengthen its defining areas of excellence and will leverage its competitive advantages to ensure the school’s continued leadership in engineering education, research, and translation. The Whiting School will provide its faculty and students with the resources necessary to pursue promising areas of inquiry where the school has clear potential to address significant societal problems and to emerge as a thought leader. Whiting School staff will be provided with the resources, training, and professional growth opportunities needed to create a positive and productive work environment that advances the school’s mission.
The Whiting School of Engineering has established strategic goals and implementation plans in three primary areas: **Education, Research, and Translation.**

### 1. Education

WSE’s educational programs will foster the intellectual, personal, and professional growth of its students.

**Goals**

**Implementation Strategies**

- **WSE will provide every undergraduate with the firm foundation in mathematics, science, and computing they need to pursue subjects deeply.**
  - WSE will work with Krieger School of Arts and Sciences to expand offerings in mathematics and science and to ensure that all such offerings serve the specific needs of engineering students.
  - WSE will integrate clearly articulated standards for computing throughout its curriculum.

- **Every undergraduate will have the flexibility and the opportunity to pursue activities that advance their personal and professional growth and to tailor their academic program to meet their personal objectives.**
  - WSE departments will review their curricula to ensure that all academic requirements are essential to their disciplines.
  - WSE will leverage the resources of the Center for Leadership Education, the Johns Hopkins Career Center, and those of its alumni community to provide all undergraduates with programs and opportunities that prepare them to excel in their professions.
  - WSE will partner with Homewood Student Affairs to coordinate new programs that address undergraduates’ personal and professional growth.
  - WSE will provide an environment in which faculty employ a spectrum of proven pedagogical techniques, including alternatives to traditional lectures, that empower students to engage actively with the course material.
  - All members of the WSE community will have the opportunity to play a role in the school’s educational enterprise.

- **Design and research experiences will be integrated into all levels of undergraduate education and all undergraduates will be welcomed and encouraged to participate in the university’s research enterprise.**
  - WSE will invest in the creation of design centers throughout the engineering campus where students can pursue design projects during all stages of their undergraduate education, for both academic and co-curricular projects.
  - WSE will continue to support and encourage its rich tradition of undergraduate research.
  - WSE departments will deepen their involvement with the Applied Physics Laboratory and the medical campus to enhance undergraduate educational programs and research opportunities.

- **WSE will ensure that its master’s student community has a distinct academic identity and that it plays an integral role in the larger WSE community.**
  - The Johns Hopkins Career Center will provide engaging professional development programs that are designed specifically for master’s students and that will prepare these students fully for their professional pursuits.
  - Academic departments on the Homewood campus will work with Engineering for Professionals to offer a greater breadth of academic opportunities to all master’s students.

- **All WSE master’s programs and their modes of delivery, including full-time, part-time, and online programs, will be integrated seamlessly.**
  - WSE will integrate the technologies developed and implemented in its Engineering for Professionals programs across the school’s educational enterprise.
  - Every academic department on the Whiting School’s Homewood campus will have a liaison who collaborates with the corresponding EP program.
  - To maximize its interactions between full-time and EP programs, WSE will move EP’s operational offices to the Homewood campus.
  - WSE will use its experience and resources in online education to establish partnerships with schools outside the United States.
  - WSE will pursue new international academic partnerships.

- **WSE doctoral students will be provided the resources and opportunities to advance their fields through their research and thereby increase the impact and reputation of the school.**
  - The WSE PhD population will increase to more than five students per tenure track FTE and the PhD graduation rate will increase to more than one student per year, per tenure track FTE.
  - All WSE PhD students will be engaged in teaching activities during the course of their academic program.
  - All WSE PhD students will be fully supported throughout their tenure at WSE.
2. Research

The Whiting School of Engineering’s reputation is enhanced in large measure through the success, the contributions, and the impact of its research enterprise.

Goals
Implementation Strategies

WSE will increase its focus and leadership in inquiry occurring at the intersection of engineering with biology, medicine, and health.

- WSE will leverage the university’s competitive advantages in medicine and health to create new partnerships with the medical campus and will establish research efforts focused on the intersection of engineering with biology, medicine, and health.
- WSE will invest in facilities and in faculty hires that enhance cross-disciplinary research in engineering topics related to biology, medicine, and health.

WSE will pursue research that enhances resiliency of systems and technologies that improve the safety, security, and well-being of the Earth and its inhabitants.

- WSE will develop opportunities to strengthen collaboration with the Applied Physics Laboratory through the development of physical space housing APL technical staff on the Homewood campus.
- WSE will make investments in facilities and faculty hires that enhance this area of inquiry.

WSE will increase its external funding and diversify its funding sources to ensure the school’s continued leadership and excellence and to provide the resources necessary for continued growth.

- WSE will increase the support it receives, from foundations, from partnerships with industry, and from technology transfer ventures.
- WSE will be seen as a critically important partner by organizations within Johns Hopkins University and beyond and will undertake programs and efforts on a scale that would not be possible by WSE alone.
- WSE will provide resources and will develop an organizational structure that will enable the school to pursue special projects that fall outside the boundaries of traditional academic research.
- WSE will seek opportunities to expand its international research agreements.

WSE will maximize efficiency in its research activities.

- WSE will expand the number and range of its core research facilities and will create shared laboratory facilities across the engineering campus.

3. Translation

WSE will draw upon the wide range of technical and non-technical skills and abilities of its community members to solve societal problems.

Goals
Implementation Strategies

WSE will be known as an entrepreneurial center whose translational activities impact not only Baltimore City and the region, but also the world.

- WSE will implement new faculty leave policies that encourage faculty to pursue translational activities and enable them to return seamlessly to their academic and research activities on campus.
- WSE will consider accomplishment in translational activities as an optional metric of success in the promotion and tenure process and in annual evaluations.

WSE will increase significantly the breadth and the impact of its STEM and engineering outreach programs to Pre-K–12 students.

- By partnering with Engineering for Professionals, WSE’s Center for Educational Outreach will broaden its impact in STEM and engineering outreach to Pre-K–12 students through the development and delivery of online programs.

WSE will be regarded as a thought leader and will effect change in the policy and regulatory landscape.

- WSE will work to develop new efforts that focus on technology translation, policy, and regulation.