



July 13, 2023

TO: Members of the Wisconsin Legislature
FROM: Board of directors, Wisconsin Technology Council
RE: A resolution on the UW-Madison College of Engineering project

The board of directors of the Wisconsin Technology Council strongly urges the Wisconsin Legislature to fully authorize construction of the UW-Madison College of Engineering building project, taking action by the fall of 2023. This \$347-million undertaking is vital to the entire state, especially its business and research communities, for many competitive reasons.

Meeting July 11 in Oshkosh, the Tech Council board urged rapid approval of this long-delayed project, planned for a site flanked by Madison's Campus Drive, North Randall Avenue and Engineering Drive. As a reminder, the Tech Council is a 501c3 corporation created to advise state government on matters related to science and technology development. Its board includes more than 50 statewide members who are well-versed in industry, entrepreneurship, research, investing and related disciplines.

The board's reasons for urging approval fall into three major categories – workforce development, research and development, and economic attraction and retention. Examples are below:

- Undergraduate admissions in engineering will climb by 1,000 students, from 4,500 to about 5,500, which still leaves the college among the smallest in the Big Ten Conference but helps more homegrown Wisconsin students gain admission. In 2023, only one in seven qualified candidates made the cut. With more students in the pipeline, the workforce needs of companies in Wisconsin -- one of the nation's leading manufacturing states – can be better met.
- Wisconsin's competitiveness in manufacturing processes, which has helped the state weather recessions over time, is being improved by research teams spread across departments such as Industrial and Systems Engineering, Materials Science, Mechanical Engineering and Civil and Environmental Engineering.
- Researchers within the college are already the source of about 140 invention "disclosures" per year, meaning ideas that could be patented, licensed and become commercial products or processes. That will grow with more space for people with ideas.
- Startup companies are growing roots in that fertile research soil, many coming from students and faculty in departments such as Chemical and Biological Engineering, Electrical and Computer Engineering and others already mentioned. About 60 tech-based startups were born in the College of Engineering over the past 25 years; that many and more can be expected to add jobs and value to the economy in the years to come.
- Here are some specific sector examples of how a stronger College of Engineering will help:
 - In agriculture, researchers and students are helping Wisconsin farms become more efficient and independent by harvesting the energy those farms are already producing.
 - Researchers have developed an electric motor using 3D printing technology, which could lead to future motors becoming more efficient without sacrificing power.
 - Electrical and other energy grids, which can be vulnerable to cyberattacks and more, are being hardened against security risks with the help of engineering researchers and their student assistants.
 - Human health is being improved by researchers and students in the college's Department of Biomedical Engineering, which is developing safer ways to move hospital patients in



- and out of beds; creating safer helmets to reduce concussion risks; and finding more effective ways to treat traumatic brain injury.
- One of the nation's leading Departments of Nuclear Engineering and Engineering Physics is working on the future of nuclear energy, including commercial fission.
 - Researchers and students in the college's Traffic Operations and Safety Laboratory are collaborating with others to find ways to overcome today's hurdles to adoption of electric and self-driving vehicles. Those include making longer-lasting batteries, engineering a more robust network of charging stations and developing new materials that aren't reliant on unstable foreign sources.
 - A range of challenges related to the environment are being addressed. Researchers and their student assistants are finding better ways to recycle plastics. They are working to reduce the carbon dioxide emissions from production of cement, the most widely used substance on Earth after water. Today, cement accounts for 8% of all carbon emissions. They are finding ways to remove, capture and even disintegrate the most harmful types of PFAS chemicals, which is short for per- and polyfluoroalkyl substances. New energy sources, such as hydrogen, are advancing toward various forms of commercial use with the help of college research teams.

If this project is not approved, private funding pledges that could total \$150 million are endangered. Academic competitors such as Purdue, Ohio State, Michigan and Illinois will continue to build whatever facilities are needed in the 21st century economy to accommodate talent from close to home and beyond. Companies large and small that are looking to relocate or expand will be tempted to scratch Wisconsin off their search lists.

This is not a matter of competing with Wisconsin's other excellent engineering programs. Private colleges such as Marquette University, Milwaukee School of Engineering and other UW System engineering programs are all represented on the Tech Council board. While those institutions have critical building needs, as well, there is a recognition that collaboration opportunities with the Madison campus will only increase over time if this project is built.

With the demand for engineering graduates and research growing, internal competition isn't the issue. Competition in the region, the nation and the world are the pressing concerns. All of Wisconsin needs the UW-Madison College of Engineering project. We urge the Legislature to proceed expeditiously.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Tom Still", is written over a light blue horizontal line.

Tom Still, president
tstill@wisconsintechcouncil.com