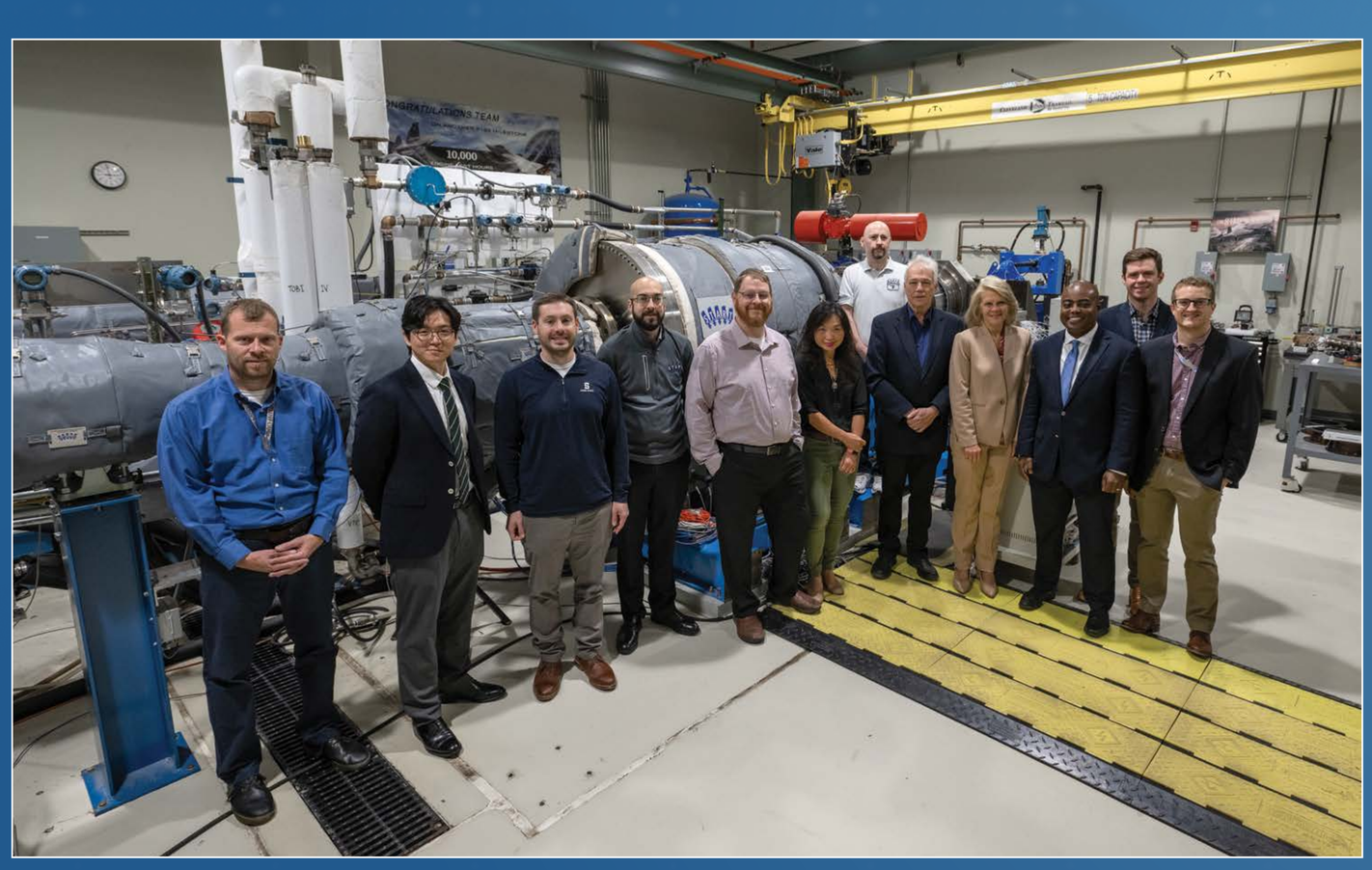
TURBINE COMPONENT DESIGN ADVANCED AT PENN STATE FACILITY THROUGH NETL COLLABORATION

The National Experimental Turbine initiative (NExT), with NETL support and oversight, has made major advancements in turbine design.



NETL federal project managers, Patcharin Burke and Richard Dalton, visited the START Lab facility along with Rich Dennis, the Lab's Advanced Turbines technology manager, in 2022.
Photo Credit: Kelby Hochreither

The NExT initiative is located at the Pennsylvania State University Steady Thermal Aero Research Turbine (START) Lab. In this milestone achievement, the NExT team performed the successful integration and operation of additively manufactured, cooled turbine blades at engine-representative conditions.

- Additive manufacturing provides a faster way, at a relatively lower cost, to develop components that must operate in extreme environments and withstand high temperatures.
- The demonstration was the first of its kind at any U.S. university turbine facility.
- DOE's investment in the START facility and the NExT design enables the U.S. to have an unmatched testing capability for improving cooling designs that will lead to improved turbine performance across the turbine fleet.

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