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University partnerships strengthen sustainability at Boeing

Why it matters: Strong university partnerships are one way Boeing demonstrates that it is looking outside the aerospace industry to give and receive support for research and development and to attract top talent.

Here are some universities partnering with Boeing on sustainability:

- **Yale Center for Natural Carbon Capture:** In April 2022, Boeing pledged $10 million to research efforts in natural carbon sequestration to scale natural solutions to mitigate GHG. The Center's focus is on near-term solutions that can capture approximately one gigaton of CO_2 per year, the equivalent to current annual airline emissions. This approach offers potential co-benefits such as improved soil health and biodiversity conservation.
- **University of Sheffield:** Boeing is the founding member of the Energy Innovation Center (EIC), which is focused on driving SAF development. In early 2023, the EIC was announced as the UK's SAF Clearing House, in partnership with the University of Dayton, reinforcing the critical role this first-of-its-kind facility in the UK will play in the global ecosystem. The EIC builds on Boeing's long-standing relationship with Sheffield, which started with the co-founding of an advanced research center for manufacturing and led to the opening of Boeing's first European manufacturing facility, demonstrating a successful model for university and industry collaboration.
- **University of Cambridge:** In 2023, Boeing is celebrating 20 years of collaboration with the University of Cambridge. Among other research projects, Boeing is partnering with the university's Whittle Lab on its Aviation Impact Accelerator (AIA) to draw from a multidisciplinary range of expertise. AIA develops interactive, evidence-based models, simulations and visualization tools for decision-makers and others to understand low-emissions flight pathways, complementing our own Cascade tool. The AIA tool will help Boeing and interested parties understand how policies, scenarios and technology transitions support the industry's net-zero carbon emissions from commercial aviation by 2050.
- **Cranfield University's Digital Aviation Research and Technology Centre:** This partnership focuses on technologies that are relevant to the operational efficiency pillar of our sustainable aerospace strategy.
- **Villanova University:** The Resilient Innovation through Sustainable Engineering (RISE) Forum advances corporate sustainability by identifying and applying data-driven sustainability solutions. Boeing has access to faculty and graduate students who possess the technical expertise to examine real-world problems by evaluating various technologies or operational innovations through a systems perspective.

What's next: We will continue to partner with academic institutions at the forefront of sustainable aerospace research.

Fossil-Free Future for Aerospace: His Majesty King Charles III visits Cambridge University, when he was Prince of Wales, to see plans for a new Whittle Laboratory building that would act as a hub for the university-led Aviation Impact Accelerator (AIA), of which Boeing is an official industry adviser, focused on accelerating the move toward the commercial aviation industry's climate goals. (University of Cambridge photo)

Alicia Piscitelli. (Boeing photo)

Studying sustainable materials in forestry waste: University partnerships nurture the sustainability talent pipeline, which benefits graduates and the company. Alicia Piscitelli secured a position on Boeing's Research & Technology team after completing three company internships and earning both master's and doctorate degrees from Villanova's sustainable engineering program.

Boeing's circular economy expert and Associate Technical Fellow (see Page 30), Christin Datz, was Piscitelli's master's thesis adviser as she researched ways to advance the sustainable product life cycle. Piscitelli's doctoral research focused on renewable feedstock material for thermoset polymers used in interior aircraft composites. She studied ways to synthesize phenolics with renewable feedstocks derived from pine root oil and forestry waste.

Most recently, she's helping Boeing to find sustainable ways to manage polymers at the end-of-life phase of the sustainable product life cycle.