



MIDDLE BUCKS
INSTITUTE OF TECHNOLOGY

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FOR IMMEDIATE RELEASE

Middle Bucks Celebrates Innovation as Engineering Students Invent Hide Tumbler and File Patent

Jamison, PA – Middle Bucks Institute of Technology (MBIT), a leading career and technical education school in Bucks County, PA, proudly announces a groundbreaking invention by its talented students from the Engineering-Related Technology program. In partnership with the Ornithology Department at the Academy of Natural Sciences of Drexel University, the students have successfully designed, developed, and patented a collapsible hide tumbler.

A hide tumbler is a device that is used to process bird skins by tumbling them in sawdust to soften and dry the hides for further processing. Hide tumbling is an important process in preserving a wide selection of bird specimens for research. The bird collection at the Academy is the largest in the western hemisphere, containing over 200,000 samples.

In the Fall of 2021, MBIT Engineering students collaborated with Dr. Nate Rice, the Ornithology Collection Manager at the Academy, to discuss the construction of a motorized hide tumbler. Dr. Rice conveyed to the students the limits of the available lab space for such a machine as well as the technical requirements for the device. The students began to prototype their designs in order to create a hide tumbler that met the form factor and specifications of the Academy.

The Academy was looking for alternatives to installing a larger, industrial tumbler in order to preserve limited lab space while still automating what had been a labor-intensive, manual process.

“A hide tumbler is a critical tool for preparing and preserving bird specimens at the Academy,” Dr. Rice said. “But our challenge, as is the case with most labs and taxidermy shops, is that space is at a premium. The students did a great job of taking the time to learn about the problem and to come up with a viable solution. It was an honor to work with the students and Mr. Ostrow and I’ll look forward to more collaboration in the future.”

The Engineering students took this on the design challenge and invented a collapsible hide tumbler that was custom-built to the available space. After many design meetings and revisions, the students completed a prototype in May of 2022. They brought the machine to the Academy in May 2022 for Dr. Rice to review and critique.

The students created a machine that is collapsible, has very a small footprint, is simple and safe to operate, and can be powered by a wall outlet, battery, or manual hand crank. By having



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various options to power the device, it is able to be used both in the lab at the Academy and in the field.

In March 2023 the students met with MBIT Occupational Advisory Committee (OAC) member and Intellectual Property Engineer, Dave Shoneman. Mr. Shoneman spoke about the Patent Process and Intellectual property rights. The students realized the unique and innovative nature of their design, and filed for a provisional patent for the tumbler.

“It's been a great journey for our Engineering students and a point of pride for the program. This is a great story of a high school Career and Technical Education (CTE) program working in partnership with such a great science institution,” said Engineering Related Technology Instructor, Mr. Alan Ostrow

“Middle Bucks Institute of Technology was thrilled to partner with the Academy of Natural Sciences on this project. Students in career and technical education thrive when given the opportunity to complete live work as students must hone their technical skills and their employability skills with customers and clients. In this case, our Engineering Related Technology students had to solve two problems, how to automate a process and how to design the automation to fit into a limited footprint. The result is a hide tumbler that the Ornithology Department can use to support their incredible work. The students' vision, with the support of their incredible teacher Mr. Alan Ostrow, is so unique and innovative it was awarded a provisional patent. Career technical education is more than just “hands-on” learning, it is real-world learning with authentic experiences for students. I am so proud of these students and their teacher for their ingenuity, determination, and problem-solving ability. Not many high school students will graduate with a patent in their name; at MBIT, three students will have this distinct honor,” said Administrative Director of Middle Bucks Institute of Technology, Dr. Mark Covelle

About The Academy of Natural Sciences of Drexel University

The Academy of Natural Sciences of Drexel University is the oldest natural history museum in North America, maintaining a world-class collection of more than 19 million specimens. Its ornithological collection contains over 215,000 study skins and 30,000 tissue samples, available to researchers worldwide. Specimens of historical importance in the collection predate the founding of the Academy in 1812 and include important early bird collections made by famous collectors such as Alexander Wilson and John Gould. The collection also represents diverse species from North America, South America, Asia, Africa, and Australia. The Academy's ornithology department is actively adding specimens, locally and internationally, at a rate of about 1,500 specimens per year.

About Middle Bucks Institute of Technology



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Middle Bucks Institute of Technology (MBIT) offers twenty-one career pathways, all geared towards preparing students to meet the needs of High Priority Occupations in Pennsylvania, while enhancing the academic program for all students. In addition, MBIT students can earn nationally recognized certifications and college advanced credits. MBIT services students from the Centennial, Central Bucks, Council Rock, and New Hope-Solebury School Districts. Learn more by visiting www.mbit.org.

Inventors

Alan Ostrow-Instructor

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Daniel Kmet-Student Inventor Central Bucks West (2022 Graduate)

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Photos and videos attached

<https://youtu.be/4c-8sQ8n7YE>