



Seneca Valley School District

Press Release

For Immediate Release

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SV Center for Biotechnology Students Present for Community

JACKSON TOWNSHIP, PA (May 26, 2026) – Students from the Seneca Valley Center for Biotechnology, a teacher-led initiative that empowers and equips students to develop university-level scientific research skills using the latest technology, presented projects, led tours and showcased their workspace during the Center for Biotechnology’s annual Open House held May 21 in the Seneca Valley Intermediate High School Library.

In total, 18 student projects were displayed and presented to attendees, including parents and family members, community members, teachers, administrators and staff. Topics ranged from the effect of apple cider vinegar on biofilm growth to Hellbender primer comparison using qPCR.

Many students involved in the lab conduct research during their free time without receiving grades or course credit. Students also complete a full year of training before developing and conducting their own research studies.

“Our students are able to get hands on experience with these techniques and equipment that, in many cases, they would not have the opportunity to do so until late in their college career,” said Biology teacher and Center for Biotechnology advisor Tom Lavelle. “We are incredibly proud of the work they have done.”

During the tours, students demonstrated equipment and technology used throughout the program, including the autoclave, ultraviolet spectrophotometer, fluorimeter, PCR laminar flow hoods, shaking incubator and fluorescent microscope. Students also highlighted the new Geneious software, which played a pivotal role in many student projects this year.

Attendees also participated in several hands-on activities, including micropipette use, microcentrifuge operation, vacuum filtration of creek water for eDNA analysis and stereoscopic viewing of bacteria to detect mutations.

Seneca Valley alumni Alexis Helsel and Gavin Blazer, both students at University of Pittsburgh, returned as special guest speakers during the Open House and spoke about how the Biotechnology Lab and guidance from teachers Tom Lavelle and Brian Carson contributed to their success both at Seneca Valley and in college.

Also speaking was Seneca Valley Deputy Superintendent for Secondary Education, Dr. Sean McCarty.

“These students who work and learn at the Center for Biotechnology take time outside of their schooling to pursue a passion,” Dr. McCarty said. “That’s what true learning is about. That’s the future of where public education needs to go.”

Throughout the year, students utilized the Center for Biotechnology to conduct the following experiments:

Metabarcoding a Marine Ecosystem

Effect of Apple Cider Vinegar on Biofilm Growth

Designing and Testing North American River Otter Primers

Using Geneious to Advance Salamander Metabarcoding

Pollinator NGS Metabarcoding

Constructing a Mitochondrial Reference Genome

Using Geneious to Advance Invasive Carp eDNA Detection

Hellbender Primer Comparison using qPCR

Plasmid Stability and E. coli

Bacterial Growth on Orthopedic Materials

Genetic Analysis of Commercial Tuna

Creation of Wide-Reaching Mammalian eDNA Primers

UV Effects on DNA

GMOs in Common Snack Foods

Bacteria on Orchestral Instruments

Analytical Evaluation of UV Spectroscopy, Nanodrop
Spectrophotometry, Gel Electrophoresis,
Fluorimetry in DNA Quality Determination

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