



# Biotechnology Academy

Career-Technical Education Program News from the Six District Educational Compact



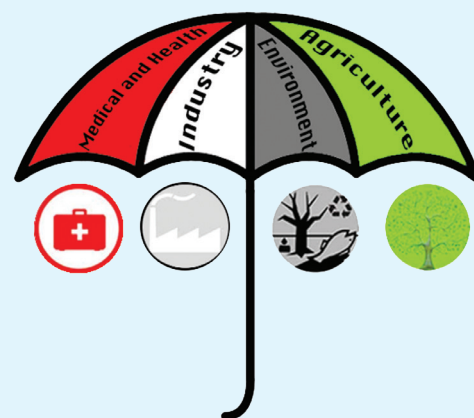
**2020-21 Level II students:** Back - Landon Burton (SMFHS), Kimberly Reese (CFHS), Jenna Sawyer (SMFHS), Sa'Sha Holmes (RHS), Ben Long (SMFHS), Makayla Foley (WHS). Front - Celastina Wortman (RHS), Andrew Smith (THS).

## Capstone Showcase

At the end of the 2020-2021 school year, Biotechnology Academy Level II students showcased their capstone projects to their families, administrators and community members. Students worked all year on an independent scientific research paper on a topic of their choice with the support of a professional mentor within the field they were researching. Students condensed their 12-page paper to a five-minute 'science talk,' a challenge for science learners at all levels. This was a rewarding experience for the students as they were unable to participate in a capstone competition due to the pandemic.

Current Level II Biotechnology Academy students are already hard at work on their capstone projects for the 2021-2022 school year. They have started to write their research paper and will soon be connected with and meet with their mentor within the field they are researching. The topics the students are working on include: Genome-Wide Association Studies (GWAS), CRISPR-Cas9, Biofuel, Alzheimer's disorder, Organ-on-a-chip, and Dissociative Identity Disorder (DID). Students are preparing for and hopeful that they will be able to participate in a competition with other Biotechnology students in the state of Ohio later this year.

## Biotechnology is an Umbrella Term



## What is Biotechnology?

Biotechnology is an emerging science that is defined as using biological processes and products to improve man-made products or processes.

Have you ever wondered about how bacteria is utilized to clean up oil spills? Did you know that we are researching how algae can produce biofuel? Have you wondered how farmers are combating insects using a toxin produced by bacteria? Have you ever wondered how we can revolutionize organ transplantation using organ scaffolds and stem cells? Each of these examples represent a few of the numerous cases of biotechnology in today's world.



**Six District Educational Compact**

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# Biotech receives new equipment

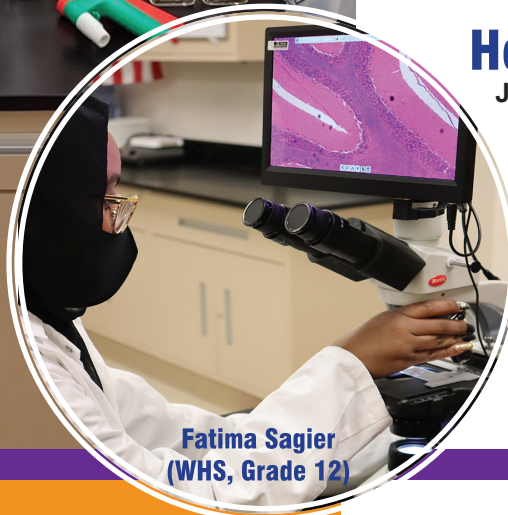


The Biotechnology Academy has received new equipment! A successful DonorsChoose campaign, paired with other fund-raising, allowed the program to purchase industry-standard equipment that gives students the opportunity to use similar tools used by professionals in the field. Some of this equipment includes micropipettes and stands, reagent bottles, cleaning bottles, DNA modeling kits, disease modeling kits and a microscope with a mounted screen.



## Hospital Partnership

**James Gillahan**, Biotechnology Academy instructor, is currently collaborating with the Western Reserve Hospital and the Six District Educational Compact to allow Biotech students the opportunity to shadow professionals in the Biomedical department at the hospital. Additionally, efforts are being made to provide Biotech students internship opportunities at the hospital starting this summer. We are excited about this partnership and opportunity for our students to engage in a professional environment close to home and network with industry professionals!



**Fatima Sagier**  
(WHS, Grade 12)

## Thoughts from a completer



"After completing the Biotechnology Academy, I feel like I have an advantage over other students in many of my college courses. Much of the college level content I am learning was covered in Biotech and since I was able to explore different careers in the field while still in high school, I already know that I would like to pursue a career in genetic research. This program was the best decision I could have made to further my education. It challenged and motivated me!"

**Nick Ciano**  
Cuyahoga Falls High School '21  
Stark State College - Biomedical Engineering

## Update on Courses

Beginning in the 2021-2022 school year, every course within the Biotechnology Academy is being offered as an honors level credit. The courses offered include the following:

Courses and Credits:		
<b>Level I:</b>	Honors English	1cr. (4.5)
	Honors Human Anatomy	1cr. (4.5)
	Honors Biochemistry of Health	1cr. (4.5)
	Biotechnology for Health and Disease	1cr. (5.0)
<b>Level II:</b>	Honors English	1cr. (4.5)
	Honors Bioinformatics	1cr. (4.5)
	Honors Genetics of Disease	1cr. (4.5)
	Biotechnology for Health and Disease	1cr. (5.0)

The Biotechnology for Health and Disease course is a CTAG course, meaning, if a student performs satisfactorily on the end of course exam, they earn credit for a college level "Intro to Biotech" course at any public Ohio college or university. Ongoing work is being done to create additional college credit opportunities within the program.