



**ESSEX NORTH SHORE**  
AGRICULTURAL & TECHNICAL SCHOOL

**Fall 2020 Program Advisory Committee Meeting Minutes**

**Program: Biotech**

**Date: 10/22/20**

**Members Present: Arlyssa LaPorte, Deb O'Reilly, Phil Damiani, Brianne Hantzis, Gene Wong, John Delyani, Kento Lewis, Jillian Mason, Kalomira Kalaitzis, Helen Clark**

**Program Facilitator: Arlyssa LaPorte** (should be the instructor)

**Committee Chair: not in attendance** (should not be an instructor)

Meeting took place over Zoom at 6pm

- I. **Introduction of PAC members** - Each member Introduced themselves and indicated which organization they are from and what their role is. There was a good mix of individuals from both academia and Industry with Endicott, Cell Signalling, Charles River Laboratories, Skyhawk, Illumina, VWR and Tmunity represented.
- II. **Curriculum Bias Form** was completed.
- III. **Student enrollment/Placement-Class of 2023** - Student placement in the Biotech CTE program at Essex Continues to grow. Currently we have 17 Seniors (1 virtual) , 18 Juniors, & 20 Sophomores. Boys make up less than 20%, girls over 80%. 10th grade class is more diverse than 11 & 12.
- IV. **Remote Learning Best Practices** - Remote days are being used for pre-lab theory lessons, and pre-lab questions, documentation of procedure and also for post lab write ups & analysis. Lab X change offers good virtual labs, interactives, & video lessons. In person days are fast paced, and contain as much hands on lab work as possible. Gene attests that Endicott is doing much the same, using remote time for pre/post lab. Endicott looked into E scene lab kits and Labster but were not used due to inavailability of kits and licensing agreements. Exploratory will employ some take home (bagged) lab supplies (safe/kitchen science) for students that can be used over zoom.
- V. **Internships and Coop** - Other than CVS not many opportunities due to staffing restrictions in buildings. Gene reports that some Endicott students are doing their internships on campus. One company is paying students to grow cells and ship them in their proprietary solution. Gene will send the info about this.



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- VI. **New Trends** - CRISPR Cas9 continues to be the hot trend and gene editing tool of choice. Electroporation capability is also in high demand. Biotech continues to move toward more automation. CRL is using robotic automated genotyping. Currently there are not many good CRISPR educational tools, and those that are out there, mimic bacterial transformation so closely that the difference is almost lost on students. With the increasing use and study of CRISPR and of pluripotent stem cells comes opportunities for exploration into bioethics. With dedifferentiation of cells the use of embryonic stem cells becomes less necessary. Single cell and spatial transcriptomics is also a growing field, and using barcoding for visualization is growing in popularity. Companies like O-link are doing high throughput protein screening using antibodies. Also coding, big data analysis (tableau tools), how to manipulate data to look at trends, Anything to do with COVID , Test for Covid antibodies by ELISA. Program has potential for 2 NGS bioinformatics projects, but time to perform and remote learning make that a challenge and expense is great.
- VII. **Employment Outlook.** If anything, the pandemic has resulted in more money being spent in the biotech sector, hiring will increase, however restrictions of staff allowed in buildings makes new employment challenging. Many companies are seeing “Brain drain” of talent being hired at higher pay to conduct COVID testing.
- VIII. **Portfolios** - Went digital last year. Subcommittee is trying to establish deadlines and guidelines. With so many different programs portfolios should not be “one size fits all”. In keeping with the biotech industry practice of having new hires present their work, having students present their experiments or research projects in either a presentation format or poster format would make more sense than a binder full of documents. Perhaps having students participate in a “journal club” type activity where they read review papers and then read and present new techniques or technology may be good preparation. The biology honor society journal may have more high school appropriate papers as they are written by college students.

Meeting was adjourned at 7:40.