

# School of Science, Technology, Engineering, Mathematics



## **Cybersecurity Center:**

**Faisal Aljamal** – Assistant Professor and Coordinator, Cybersecurity program  
**Yavuz Birol Guner** – Instructor of Computer Science/Cybersecurity.

## **Water Sampling at HCCC:**

**Raffi Manjikian** - Instructor, Chemistry program.  
**Fatma Tat** - Assistant Professor, Chemistry program.

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## **Dean of STEM:**

**Burl Yearwood**

Board of Trustees, September 2023

# School of Science, Technology, Engineering, Mathematics

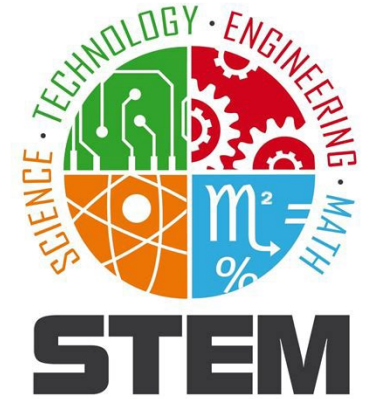
## Cybersecurity Center:

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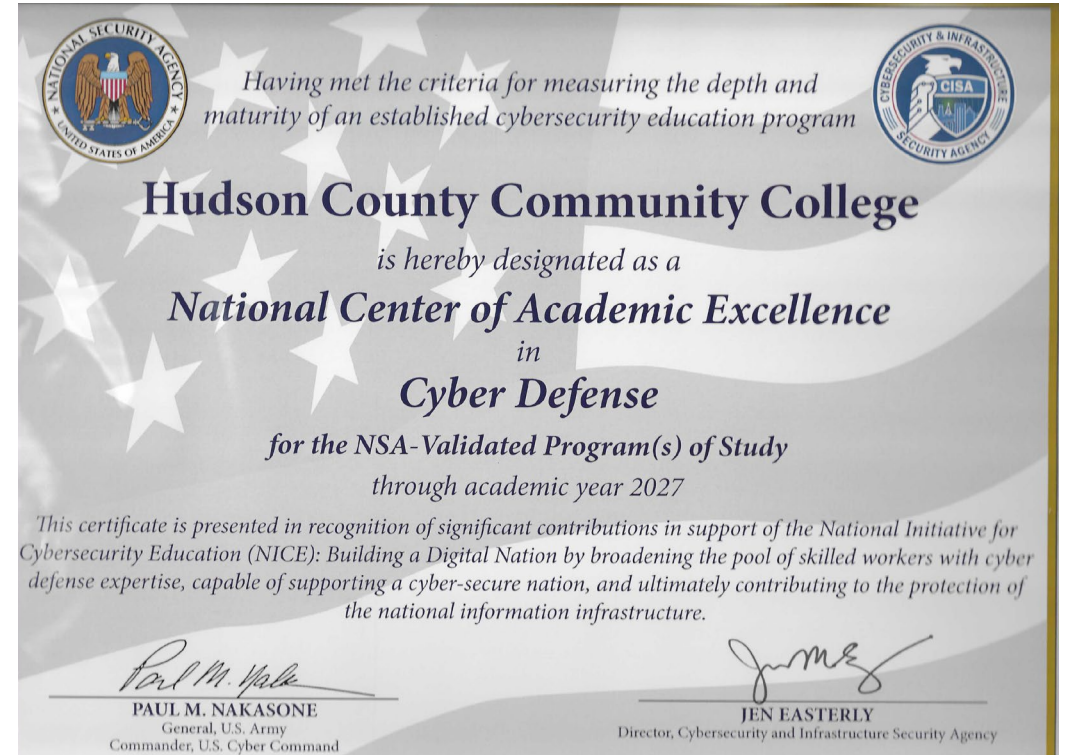
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Board of Trustees  
September 2023



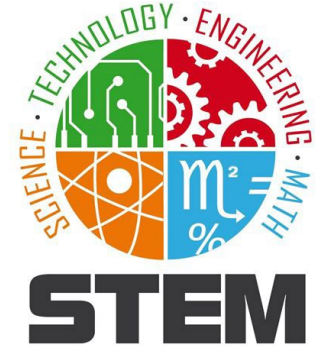
# HCCC is designated as a CAE- CD

CAE\_CD designation indicates that our institution is helping reduce threats to our national infrastructure by promoting higher education and research in cyber defense as well as provide the nation with a pipeline of qualified cybersecurity professionals.



# NSF – ATE grant proposal goals

- Provide a high standard of cybersecurity education to meet market demands as well as the technology needs of the local community and the nation.
- Increasing enrollment in the Cybersecurity program, **targeting women and economically underserved minorities**.
- Create Academic and Proficiency Certificates in cybersecurity to meet the increasing demand for cybersecurity professionals.



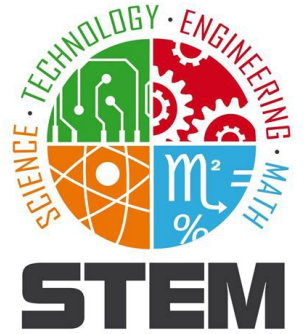
## The Cybersecurity program is growing!

- As per the latest enrollment report, the Cybersecurity program has a **47% enrollment increase** compared to the Fall 2022 Semester.
- A significant increase in enrollment compared to most of the HCCC programs.

| Academic Program | 2023FA HC | 2022FA HC | HC % Difference |
|------------------|-----------|-----------|-----------------|
| Cybersecurity    | 147       | 100       | 47.00%          |



# Establishing a Physical Cybersecurity Lab/Center



- To elevate our students' knowledge by providing them physical access on top of the available virtual lab access provided by a third-party organization (Infosec).
- To enable our students to compete better in the job market.
- To provide our students with access to the latest and greatest technology, such as:
  - XRY forensics tool used by law enforcement and criminal investigations:
  - Maltego: Pen-testing tool
  - Shodan: Pen-testing tool
  - Burp Suite: Pen-testing tool
  - Wireshark
  - VMware
  - Linux Server
  - Firewall
  - Wi-Fi Pineapple
  - Nessus
  - FTK



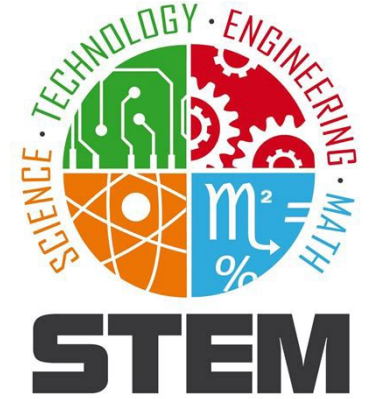
# Establishing a Physical Cybersecurity Lab/Center



- Help our local community increase their cybersecurity awareness:
  - By holding public events to better educate the local community about cybersecurity-related topics such as:
    - Ransomware
    - Social Engineering
    - Malware types such as viruses, worms, trojans, etc.
    - Cyber-defense
    - Information Gathering
    - Ethical Hacking
    - Digital Forensics
    - Cyber Warfare
    - Cybersecurity for Beginners



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## New Jersey Department of Health SARS-CoV-2 Wastewater Surveillance Monitoring Program at HCCC

### **Water Sampling at HCCC:**

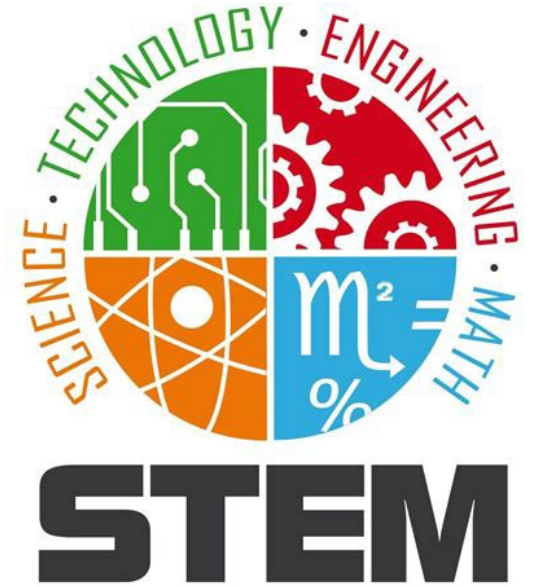
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# Purpose of the Water Sampling Project

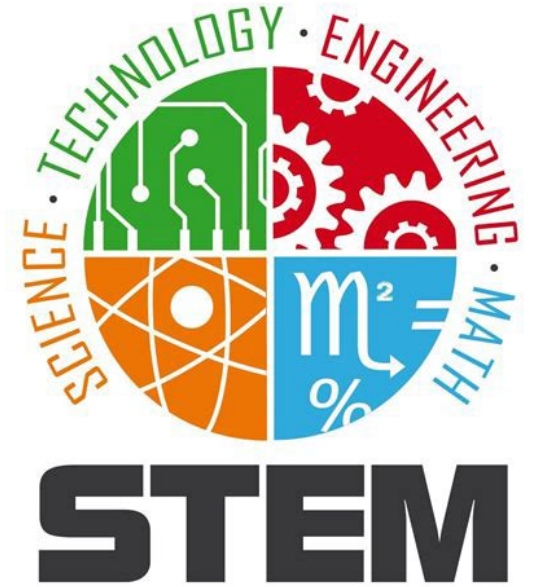
- New Jersey Department of Health (NJDOH) Wastewater Surveillance program is part of the National Wastewater Surveillance System (NWSS) program conducted by the Centers for Disease Control and Prevention (CDC).
- This program intends to track the presence of SARS-CoV-2 and other communicable diseases in wastewater samples throughout the country.
- Testing for pathogens in wastewater is a public health tool that can serve as an early warning that disease is spreading in a community, since shedding results from people with and without symptoms.





# Overview of the Procedure

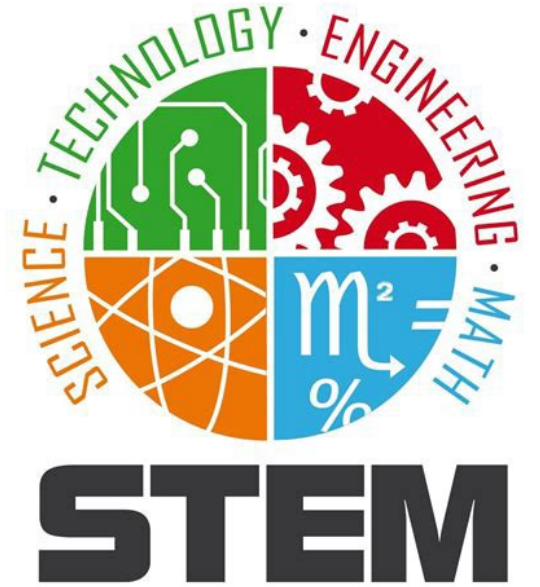
- All sample collection kits, and shipping supplies will be provided at no cost to HCCC by the NJDOH.
- Shipping samples will also be free, and any accommodations for courier transport.
- Sample 2 times per week according to the assigned sampling schedule and sampling protocol and at the approved sampling location (HCCC Library, 71 Sip Boiler Room LLL10).



# Equipment Used

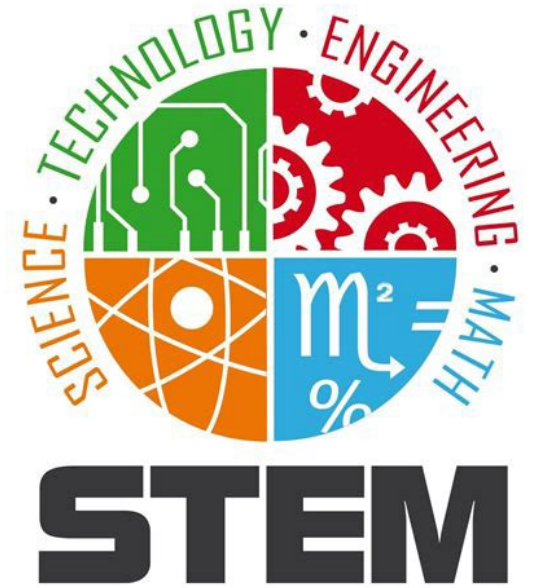


- AS950 Portable Sampler
- Container for pooling composite samples
- Cooler or shipper
- Frozen ice packs
- 70% ethanol spray bottle
- Sealed container for contaminated gloves, paper towels, and all BioSafety Level 2 (BSL-2) waste



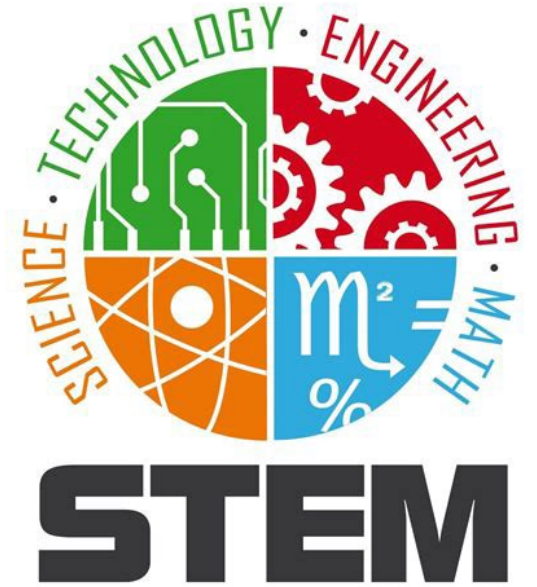
# What will be done with the results?

- HCCC will receive results relevant to the location of each sample submitted.
- Results will be shared with the CDC and become part of the CDC-NWSS dashboard COVID Data Tracker.
- In addition, results will be used to inform NJDOH surveillance efforts.
- Publicly shared data will be presented at the county or regional level.
- **Specific wastewater treatment plant names will not be identified.**



# Benefits to the HCCC and Jersey City Community

- The NJDOH Communicable Disease Service (CDS) and the Public Health and Environmental Laboratories (PHEL) will build and maintain a statewide wastewater surveillance program in partnership with state, federal agencies, and local health departments.
- Tracking trends in wastewater supplements other surveillance efforts and can show if virus levels are increasing or decreasing in a community, independent of healthcare-seeking activity.
- This information can be a critical early warning of new outbreaks and inform public health decision-making.





Thank you for your time!

Questions?

