

Ibrahim (Abe) Baggili
Elder Family Endowed Chair
EAI Fellow
Samuel S. Bergami Jr.
Cybersecurity Center
300 Boston Post. Road
West Haven, CT, 06516
Phone: 1-203-932-7198
E-mail: ibaggili@newhaven.edu
URL: <http://www.unhcfreg.com>

March 4, 2020

Testimony for S.B. No. 235 an Act Establishing a Cybersecurity Task Force

Members of the Public Safety & Security Committee,

I am in support for the Act Establishing a Cybersecurity Task Force. As a cybersecurity researcher, scientist, professor, educator and father, I am in full support of initiatives like this Act. Cybersecurity is a major problem in the world we live in today. The state of Connecticut faces the same challenges that are being faced worldwide and creating this task force will help us reduce vulnerabilities in the state. Let me bring some recent publicly disclosed cybersecurity events to your attention:

- In 2019, Starling Physicians, based out of Rocky Hill, was attacked through phishing. The investigation determined that leaked e-mails contained certain patients' names, addresses, dates of birth, passport numbers, Social Security Numbers, medical information and health insurance or billing information¹.
- Attackers in the state have not only focused on small companies. They have also targeted larger corporations. For example, EMCOR, a \$9 Billion corporation in Norwalk, suffered a ransomware attack which was reported this past month².
- School systems are continuously being attacked in Connecticut. Examples of districts that were affected by ransomware that have been disclosed publicly include the Wolcott Public School System³, the New Haven Public School System⁴, and the Middletown Schools⁵.
- There have also been challenges with towns being attacked in recent years such as the ransomware attack on the towns of Hamden⁶, Watertown⁷, and Plymouth⁸.
- Most recently, 326,000 patient records were impacted in a UConn Health phishing attack⁹.

Perhaps another important statistic may be of interest to the committee. Did you know that the Federal Bureau of Investigation (FBI)'s 2019 Internet Crime Report¹⁰ reported that in 2019 Connecticut had 4,412 cybercrime complaints, with losses totaling \$33,789,138? Mind you, this is only data from filed complaints that were reported to the FBI.

Members of the committee. Cybersecurity has a talent pipeline problem. If your team did not know this, Cybersecurity Ventures predicts that there will be 3.5 million cybersecurity openings that need to be filled globally by 2021¹¹. In fact, the CyberSeek¹² cybersecurity job demand and supply heat map shows that Connecticut has about 3,626 cybersecurity openings, and the geographic concentration of cybersecurity workers is below the nation's average. Cybersecurity talent development needs to become a pillar for this task force, and the University of New Haven is well poised to help this task force both with expertise and building the talent pipeline. Let me elaborate on that.

When I moved to Connecticut in 2013, I was surprised at the lack of cybersecurity talent in the state, and was tasked at the University of New Haven to help build a world-class program. Today, I am proud to say that we have done that. We are one of only 21 Universities in the country designated by the National Security Agency (NSA), and the Department of Homeland Security (DHS) as a Center of Academic Excellence in Cyber Operations (CAE-CO), with only two in the northeast, and us being the only one in Connecticut. We also boast the only CyberCorps Scholarship for Service (SFS) program in the

state, a \$4,000,000 scholarship grant funded by the National Science Foundation (NSF) that covers full tuition, an excellent stipend, books and conference travel for cybersecurity students in exchange for their service to local, state, federal or tribal government employers in cybersecurity.

We are also committed to building paths for students to pursue a career in cybersecurity. We host the only 9th-12th grade (20 boys and 20 girls) summer camp called the GenCyber Agent Academy that is funded by the NSA and the NSF, so that we can educate kids and excite them to choose cybersecurity as a major and as a career. Students accepted into the GenCyber Agent Academy attend the camp for free. Additionally, we work with local schools and organizations like the Girl Scouts of Connecticut to improve broader participation of underrepresented minorities in the field, and we are proud to have the first Women in CyberSecurity (WiCyS) student chapter in the state of Connecticut.

Furthermore, our very own students have uncovered vulnerabilities in systems that affect over 1.5 billion people worldwide, including devices that are used by utilities organizations in the state. Our research program in cybersecurity and forensics is world-class, and our hacking team has beaten universities with enrollments five times our size.

Not only are we in full support of a task force, we have already started leveraging our strong relationships with government entities and organizations like the MITRE Corporation to work on projects that can safeguard our state election process. In that regard, we have already made connections with the Deputy Secretary of the State on the matter - at no cost to the state. We have also recently applied for a grant through the Department of Defense (DoD) to train the Connecticut National Guard in the area of cybersecurity, and have recently received an Office of Naval Research (ONR) grant to educate Army ROTC students in the domain of cybersecurity research.

Members of the committee. We have created pathways for K-12, focused on diversifying the student body, received funding, and conducted world-class research, but there is one more important statistic: **Only one student out of all the ones that worked under my direct mentorship since 2013 works for a company in the state of Connecticut.** All the others have left the state, and many of them were born and raised here.

Building cybersecurity talent for Connecticut requires a concerted effort. This task force is just one of the many things we should be doing to improve our cybersecurity posture. We need not only to graduate cybersecurity talent, but to find a mechanism to retain that talent. Systems will not secure themselves, and people are the missing link. I implore you to not only support this task force, but to support any and all initiatives that improve the security stature of our infrastructure. I also urge you all to explore what other states are doing to support their Centers of Excellence by investing in cybersecurity hubs in their respective states that span businesses, academia and training centers.

I have a special place for Connecticut in my heart. It is where both of my daughters were born, and the place where I received my United States citizenship less than a year ago. Protecting this state means to me that I am protecting my own family. Connecticut is a state that has a lot to offer, and has been a cornerstone of the defense industry for years. We can together make it the cyber defense industry hub for years to come. At the University of New Haven, we are committed to work with all of you and play a pivotal role in this task force to make this dream a reality.

On behalf of the University of New Haven and the Samuel S. Bergami Jr. Cybersecurity Center, thank you for this opportunity for allowing me to testify. We are in full support of this Act, and we see it as the starting point of where we need to go as a state. We hope that we can be included in this critical effort towards **Securing Our Future.**

Sincerely,



Ibrahim (Abe) Baggili, PhD

*Notes

1. <https://www.fiercehealthcare.com/practices/connecticut-physician-practice-warns-patients-data-breach-after-cyber-phishing-attack>
2. <https://www.ctpost.com/business/article/Hackers-hit-Norwalk-corporation-with-15093265.php>
3. <https://edscoop.com/ransomware-halts-everything-in-connecticut-school-district/>
4. <https://www.nhregister.com/news/article/New-Haven-Public-Schools-hit-by-ransomware-attack-14119810.php>
5. <https://www.courant.com/community/middletown/hc-news-middletown-school-ransomware-20180629-story.html>
6. <https://www.nhregister.com/metro/article/Hamden-Town-Hall-computers-hit-with-malware-14545648.php>
7. <https://www.rep-am.com/local/localnews/2020/01/21/watertown-computer-system-almost-repaired-after-ransomware-attack/>
8. <https://www.nbcconnecticut.com/news/local/plymouth-town-computers-infected-with-ransomware/889/>
9. <https://healthitsecurity.com/news/326000-patients-impacted-in-uconn-health-phishing-attack>
10. https://pdf.ic3.gov/2019_IC3Report.pdf
11. <https://cybersecurityventures.com/jobs/>
12. <https://www.cyberseek.org/heatmap.html>