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UofL to launch health care cybersecurity curriculum with $6.3 million from National Security Agency and pilot focused on veterans and first responders

Project also includes biometrics research in collaboration with HBCU

LOUISVILLE, Ky. – The University of Louisville will develop a curriculum to increase cybersecurity talent specifically focused on health care thanks to a $6 million in funding from the National Security Agency (NSA). The pilot phase of the Healthcare Cybersecurity Workforce Certificate initially will provide the training for 200 first responders and military veterans in accordance with the request for proposal. The certificate incorporates technology industry badging from Microsoft, IBM and Google as well as hands-on applied learning and gamification components.

UofL will lead the curriculum development and pilot the online program through its Center for Digital Transformation, working with a coalition three other institutions. The project also includes $300,000 in funding for research into security biometrics.

“We understand the need for cybersecurity talent in our health care workforce to protect the information systems that patients, providers and payers rely on to deliver quality health care,” said UofL President Neeli Bendapudi. “We are excited to provide this exceptional opportunity for students to enhance their future career opportunities with cutting-edge skills in a short six-month time frame, while increasing security for health care data in Louisville and beyond.”

Building on more than a decade of expertise in cybersecurity training, UofL will lead a coalition of schools to develop the curriculum including the University of Arkansas Little Rock, the University of North Florida and Kentucky Community and Technical College Systems – Bluegrass Technical & Owensboro Technical, as well as a coalition liaison from the City University of Seattle. Each of the schools in the coalition is a NSA-designated National Center of Academic Excellence in Cyber Defense and contributes interests, experience and skills aligned with health care cybersecurity systems.

U.S. Senate Majority Leader Mitch McConnell authored a provision in the FY 2020 National Defense Authorization Act directing the NSA to partner with universities to develop the cybersecurity workforce. Senator McConnell, also a senior member of the Senate Appropriations Committee, then secured the necessary federal funding to make this program possible. Later, the Senator wrote to NSA Director General Paul Nakasone to support UofL’s application and encourage the university’s selection for this prestigious pilot program.

“The University of Louisville is uniquely positioned to educate a new generation of cybersecurity professionals. I was proud to lead the Senate to create and fund this national security pilot program and to support the university’s proposal,” said Senate Majority Leader Mitch McConnell. “Working with industry leaders through its Center for Digital Transformation, UofL and its coalition partners can improve our nation’s health care cyber defense. I’m particularly pleased the university is tapping into the skills of our brave service members as they return to civilian life, including many from Kentucky’s military installations. This project represents an intersection of UofL’s many strengths and I’m grateful

for President Bendapudi's enthusiasm to bring it to Louisville. I look forward to the collaboration's benefits for our Commonwealth and the nation."

The UofL Center for Digital Transformation provides future-focused curricula and educational tools to help train the workforce in fast-growing technology areas by integrating the best features of industry and academic institution relationships. The center will coordinate, develop, manage and monitor the Healthcare Cybersecurity Workforce Certificate program, a two-year project with an option for a third year. Following its development, the curriculum will be made available to other institutions at no charge, increasing the impact of this investment beyond Louisville and Kentucky.

In addition to the certificate program, the project will engage UofL's engineering research power to develop a new security authentication method using neural network models. Adel Elmaghraby, Ph.D., co-PI for the entire project and professor in the UofL Speed School of Engineering, will lead a collaboration with Mississippi-based historically black institution Alcorn State University to conduct pioneering research into biometrics. The researchers will investigate whether a person's computer keystrokes and mouse movements can be used as a sort of digital signature which, along with their username and password, would provide an added layer of cybersecurity.

"As technology continues to become more and more of an integral piece of our everyday lives, a strong cybersecurity industry and workforce are the most important protections we have in making our personal information, our financial transactions and our health care systems secure," said U.S. Rep. John Yarmuth. "I was proud to support this proposal and I am thrilled to see the University of Louisville receive this much sought-after federal investment. This project will help ensure that our city and the university are not only front and center in the future of cybersecurity and the protection of critical information, but also are creating the highly skilled workforce that drives economic growth for years to come."

Certificate program participants will complete the three-level certificate in only six months through online courses led by instructors from coalition institutions, gaining expertise in artificial intelligence, robotics, blockchain, internet of things (IoT), machine learning and other areas. The curriculum will employ innovative training tools including gamification and make use of anonymous datasets and use cases provided by industry partners, including the Louisville Healthcare CEO Council.

"As our health care data environment becomes increasingly complex, it is absolutely critical that patient health information is secure and protected," said Tammy York Day, LHCC president and CEO. "LHCC is committed to supporting UofL's efforts to arm the next generation of cybersecurity professionals with the skills they need to ensure that our health care data infrastructure is a tool – not a barrier – to empowering patients to be active participants in their own health care. This grant from the NSA is one of many LHCC-UofL collaborative efforts designed to support and broaden our health care innovation ecosystem, create a strong tech talent pipeline, strengthen and deepen the connections between our corporate and academic communities and invest in Louisville's success together."

While the curriculum is focused on the health care industry, the skills learned are applicable to multiple industries. In the course of the certificate program, participants will earn industry badges from Google, IBM, Microsoft and others, adding value to certificate completion and providing pathways to additional educational opportunities.

“Since these skills are applicable in nearly every industry, the career credentials these students will acquire are highly valued not only in the health care industry, but across the business spectrum,” said Sharon Kerrick, Ph.D., assistant vice president and executive director of UofL’s Center for Digital Transformation and the principle investigator on the grant.

Andrew Wright, Ph.D., assistant professor of computer information systems in the UofL College of Business, will assist in leading the development of the certificate program curriculum. Once developed, the curriculum will be available to other institutions free of charge for one year. The first cohort of 30-40 students is expected to be enrolled in spring 2021. Applicants do not need health care experience or to be enrolled in a degree program at UofL to complete the certificate, however it can be applied as credit toward some UofL degree programs.

In its pilot phase, 200 military veterans and first responders will participate in the certificate program free of charge.

“The cybersecurity certificate pilot led by UofL for military veterans and first responders is another great example of the university’s strong support to national security. This program will provide participants the opportunity to receive a meaningful certificate leading to employment opportunities in rewarding careers in a growth industry and provide regional/national employers with a much-needed talent source,” said retired Army Brig. Gen. Jim Iacocca, president and CEO of Knox Regional Development Alliance.

Kyle Hurwitz, director of military initiatives at UofL, says this is another example of UofL’s commitment to serving military-connected students.

“This grant is a win-win for the national cybersecurity talent pool especially focusing on health care,” Hurwitz said. “Through it we will be able to assist transitioning service members gain employment in a very high demand industry.”

UofL has achieved Military Friendly School designation for 10 consecutive years.

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