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LSU Partners with Louisiana State Police, Industry to Train Hundreds of New Cybersecurity Professionals, Deploy Cyber Range with State Support

Bossier Press Tribune

Through its new Cybersecurity Talent Initiative Fund, the Louisiana Board of Regents is investing \$185,911 in LSU in a broad workforce development effort to rapidly train more cybersecurity professionals. The initiative, called FIREStarter, will engage both traditional and non-traditional students through the establishment of a cyber range—a new Forensic and Incident Response Environment, or "FIRE" in FIREStarter—in the LSU Digital Media Center on the main campus. The range technology, provided by Cyber Range Solutions, Inc., will be supported by data and instruction through a partnership with Louisiana State Police whose Cyber Crime Unit investigates cyberattacks against state-operated networks including critical infrastructure, local agencies and K-12 schools.

Program participants will leverage LONI, the Louisiana Optical Network Initiative—a high-speed optical network managed by LSU that connects 20 universities and 63 technical and community colleges—to port real-time threat data into the LSU cyber range. There, about 100 students per semester will gain hands-on experience analyzing and defending against cyberattacks and emergent malware, including ransomware

"Every organization in the U.S. needs the ability to prevent, stop and respond to cybersecurity attacks, and determine what was compromised or lost. Given the current workforce gap in Louisiana and across the nation, it's imperative that we get students interested early and then give them the skills to make a difference in improving the cybersecurity posture of both the state and the country," said Golden G. Richard, III, LSU professor of computer science, associate director for cybersecurity at the LSU Center for Computation & Technology and FIREStarter faculty lead.

FIREStarter will become part of a growing effort, led by Richard, to train more highly skilled cybersecurity professionals at LSU. In 2019, he and an interdisciplinary team of investigators received \$3.4 million from the National Science Foundation to establish the LSU Scholarships for Service program, which offers students generous scholarships and guaranteed jobs upon graduation. Just this year, LSU was also chosen by the National Security Agency as the first non-member university to pilot the new designation process for their Centers of Academic Excellence in Cyber Operations (CAE-CO) program, the top designation for cybersecurity in higher education in the U.S., with 23 universities currently participating.

Louisiana State Police partnered with FIREStarter as part of the mission of the new Louisiana Cyber Investigators Alliance, which Louisiana State Police was charged to build last year by the state legislature. The partnership will help train law enforcement officers on digital forensics techniques and standard procedures for conducting investigations involving computer and network compromises.

Cyber Range Solutions, Inc., the technology provider for the LSU cyber range, is a national leader in cybersecurity experiential training platforms based in San Antonio. Texas.

"We're honored to partner with LSU on this exciting opportunity," said Cyber Range Solutions CEO Bash Kazi. "The need for workforce development in cybersecurity in the U.S. is tremendous and our unique tool will undoubtedly enhance those efforts in Louisiana. LSU joins an impressive group—among the 16 academic institutions we've partnered with so far, seven are CAE-designated."

One of LSU's key industry partners on FIREStarter is Radiance Technologies, a defense contractor based in Huntsville, Alabama that provides cybersecurity solutions for the intelligence community, armed services and the U.S. Department of Homeland Security. Radiance will provide immersive internships for LSU FIREStarter students.

"We invest in a superior technical workforce to develop leaders and encourage innovation to tackle the nation's toughest technical challenges," said Heath Berry, vice president of electronic systems and cyber technologies at Radiance Technologies. "We see this partnership with LSU and the FIREStarter program as an excellent opportunity to provide students with direct cyber workforce experience in support of our customers."

Radiance has previously worked with LSU on cyber research initiatives.

"We look forward to continuing this relationship long-term and supporting the research ecosystem in Baton Rouge and our continued investment in Louisiana," Berry said.

According to Anas "Nash" Mahmoud, associate professor in the LSU Division of Computer Science & Engineering and director of the LSU Software Engineering and Evolution Lab, students are already lining up to be part of the new program and to use the cyber range.

"FIREStarter will provide an unprecedented opportunity for our students, across all concentrations of computer science, to get hands-on experience in cyber security and threat analysis," Mahmoud said. "They will fill an important workforce gap and have a clear advantage in the job market."

"We are also planning to be inclusive and make an effort to publicize this opportunity to all students, including women and underrepresented minorities," said Juana Moreno, professor in the LSU Department of Physics & Astronomy with a joint appointment in the LSU Center for Computation & Technology. "As an example, women hold only 11 percent of all cyber security jobs worldwide, and FIREStarter could be a way to change that."

Louisiana State Police will provide LSU with an experienced analyst from its Cyber Crime Unit to teach two new cybersecurity classes at LSU. These classes will help bridge the knowledge gap for beginning computer science students and train them on incident response. Additionally, this learning experience will prepare the students to enroll in more advanced courses in memory forensics, malware analysis, reverse engineering and exploit development at LSU.

LONI, Louisiana's high-speed optical network managed by LSU, can be used to transmit information securely between educational institutions in the state and is powered by the Queen Bee supercomputers on LSU's main campus. It will broaden access to the LSU cyber range for any participating partner connected to its network via roughly 1,700 miles of fiberoptic cable.

Lonnie Leger, executive director of LONI, likens the LSU cyber range to a virtual firing range.

"You can handle a weapon in offensive and defensive positions as long as you learn how to use that tool ethically," Leger said. "The cyber range will allow our students and all of our partners to do so in a safe and controlled environment."

"At LSU, our focus is on producing top-tier cybersecurity practitioners and researchers— essentially, cybersecurity superheroes," Richard said. "The cyber range will make this effort easier, across the cybersecurity curriculum, by allowing us to offer additional hands-on, practical education in both offensive and defensive cybersecurity. Beyond formal coursework, the range gives us a platform to host capture-the-flag and other events to attract student attention early. Finally, FIREStarter strengthens our relationships with state and industrial partners and opens up new collaborative opportunities for students. It's going to make a huge difference."

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