In response to:

General Information

1. Are you involved in cybersecurity workforce education or training (*e.g.*, curriculum-based programs)? If so, in what capacity?

Secure Programming Logic Aimed at seniors in High School (SPLASH@Towson) offers a college course in Secure Programming Logic to prepare high school girls for majors and careers in computing and cybersecurity. The goals of SPLASH are to

1) Increase the interest and participation of girls, which are severely underrepresented in computer science, to computing and cybersecurity majors and
2) Improve the preparation of girls for college majors such as computer science, information science, cybersecurity, and engineering, and
3) Introducing girls to secure programming.

The SPLASH program is an online version of Towson University's COSC175 - General Computer Science, an introductory programming logic course that prepares students to begin programming in any language. An important element of SPLASH is secure coding. Software security and secure coding are particularly important in the cybersecurity initiative. Software controls critical systems and infrastructure; therefore, all code written must be reliable and robust. Towson University has demonstrated success in introducing secure coding across the curriculum, particularly in the beginning courses, via the Security Injections @Towson project. The modules from the Security Injections project are integral to the SPLASH curriculum.

SPLASH students receive 4 college credits upon successful completion. By providing college credit for successful completion of the course, the SPLASH model complements the current AP test model.

The class includes over 30 hours of video-recorded classroom lectures, ten C++ labs, seven homework assignments that use C++, and four security injections to teach software Security concepts including the Secure Development Lifecycle, Integer Error, Input Validation, Buffer Overflow, and the Principles of Cybersecurity.

Since 2012, 56 girls from sixteen high schools have completed SPLASH. The large majority of the girls performed at or above the level of college students in parallel sections. This class is high impact, potentially life changing. Girls are introduced to cybersecurity and computer science curriculum they would not see in high school, even if they have the opportunity to take the AP, which most do not. Many of the girls choose majors in computer science, engineering, or cybersecurity based on their experience with this course. And for those girls who do not choose these majors, they are exposed to important information about software security and programming logic. All of the girls have earned four college credits, learned fundamental programming concepts and been exposed to cybersecurity and responsible coding techniques.

The SPLASH project enables students at schools which lack computer science courses to gain exposure to secure coding skills, enter college with a foundational knowledge in computer science, and earn college credit.

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