

## General Information

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

The Security Injections@Towson ([www.towson.edu/securityinjections](http://www.towson.edu/securityinjections)) project is recognized as a model for integrating security across the curriculum with a focus on introducing secure coding in lower-level programming classes. This project has led to the design, assessment, and dissemination of over 50 learning modules (called 'security injections'). These are self-contained, lab-based modules, targeting specific security issues (including input validation, integer error and buffer overflow), and designed to be injected into courses with minimal impact on the curriculum. Assessment results from over 1,600 students from diverse institutions show that security injections help students retain, comprehend, and apply secure coding concepts in the introductory programming courses. In addition, the modules help increase students' security awareness in all computing courses.

The Security Injections@ Towson project has been collaborative since the start, including faculty from community colleges and an HBCU to design, pilot, develop, and assess the modules. Additionally, dissemination has included over 50 workshops, panels and birds-of-a-feather groups, a 'Build-A-Lab' program, and a 'Security Ambassador' program reaching over 400 faculty.

The Security Injections@Towson e-learning ecosystem includes over 50 cybersecurity teaching modules that introduce cybersecurity in computing classes and also provides support materials and resources for faculty (e.g., course mappings, sample syllabi, etc.). To date, over 360 faculty, across 221 institutions, including 91+ community colleges and several high schools, have completed more than 3,100 cybersecurity modules.

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