

National Initiative for Cybersecurity Education (NICE) Working Group

K-12 Subgroup

K-12 Cybersecurity Educational Instructional Professional Development (PD) Series

Project Team Lead(s):

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1. Project Team Purpose

The K12 Community of Interest (COI) Webinar series is designed to increase awareness and dissemination of high-quality K-12 cybersecurity educational instructional strategies that inspire cybersecurity career awareness with students in elementary school, stimulate cybersecurity career exploration in middle school, and enable cybersecurity career preparedness in high school. We are especially interested in learning how to integrate cybersecurity content into the general instructional setting. Facilitators will share best practices and lessons learned in the classroom related to interdisciplinary or industry-based cybersecurity education practices.

2. Connection to NICE Strategic Plan

This Instructional PD series addresses the current NICE Strategic Plan Goal #1 - Accelerate Learning and Skills Development and #2 - Nurture a Diverse Learning Community. This PD project team will determine from the community what cybersecurity educational instruction is most needed by K12 educators and will develop a series of professional development opportunities available for free and to the general public.

This effort also directly aligns with multiple Pathways within the Federal STEM Strategic Plan and addresses the NICE K-12 Cybersecurity Education Implementation Plan elements:

#2. Infuse Cybersecurity Across the Education Portfolio: Design Cybersecurity Education for the Future STEM and Cybersecurity Workforce

- a. Infuse cybersecurity concepts into classroom instruction that align with the NICE Cybersecurity Workforce Framework.
- b. Develop and replicate programs that support youth in obtaining knowledge, skills, and abilities required for success in the future STEM and Cybersecurity Workforce.

#3 Stimulate Innovative Educational Approaches: Improve K-12 Cybersecurity Education Instruction

- a. Increase coordination among teacher preparation, professional development, support, and recognition efforts within existing and proposed cybersecurity educator programs.
- b. Stimulate innovative educational approaches to accelerate learning and skills development.

3. Project Team Objectives

The Instructional PD series will increase awareness and dissemination of high-quality K-12 cybersecurity educational instructional strategies that inspire cybersecurity career awareness among students in elementary school, stimulate cybersecurity career exploration in middle school, and enable cybersecurity career preparedness in high school. Instructional strategies will also impact informal content instruction. The connection between the NICE Workforce Framework and other nationally recognized K-12 standards will be emphasized. Project deliverables will aid in the adoption of proven instructional strategies and techniques that promote the infusion of cybersecurity content across the education portfolio and improve K-12 education instruction.

4. Project Team Deliverables

Deliverables proposed for this effort include:

- Survey key stakeholders to determine what cybersecurity educational instruction is most needed by K-12 educators and of high interest
- Working in partnership with NICE K-12 sub-group members, develop and deliver a series of professional development opportunities available for free to the general public.
- Working with the NICE K-12 Cybersecurity Education Conference Project Team/Planning Committee share findings from the survey and help in the development and selection of workshops and concurrent sessions that address the needs revealed by the survey
- Archive PD opportunities for future access – Record and archive webinars and videos. This series should be recorded and posted on the NICE website as a resource for K12 instructors.
- Literature brief of best or proven practices to integrate cybersecurity content in the general classroom based on proven practices from other disciplines.
- Develop a one-pager and/or a guide sharing best or promising practices to integrate cybersecurity education into multiple K-12 settings.

SAMPLE MONTHLY WEBINARS

All presentations will focus on the integration of cybersecurity content into the general classroom setting, strategies to infuse or connect cybersecurity with general classroom courses and will share K 12 resources and best practices.

- Engineering and Cybersecurity
- Geo and Cybersecurity
- Bioagriculture and Cybersecurity
- Chemistry and Cybersecurity
- Health care and Cybersecurity
- Mathematics and Cybersecurity

If the series is popular, a second series will be developed for 2025, focusing on instructional strategies and other

- Work-Based Learning Opportunities (Physical/Virtual) Curriculum Options
- Certification Preparation
- Teacher Professional Development
- Standards Alignment
- Data Reporting
- Virtual Learning and Online Software Tools and Resources for Instructors/Students