

NICE FRAMEWORK SUCCESS STORY

California Cyber Innovation Challenge,
Cal Poly California Cybersecurity Institute

Talent Management

The voluntary [Workforce Framework for Cybersecurity](#) (NICE Framework) was developed through a collaborative process by industry, academia, and government stakeholders. It establishes a taxonomy and common lexicon that describes cybersecurity work and is intended for use in both the public and private sectors. NIST does not validate or endorse any individual organization or its approach to using the NICE Framework.

ORGANIZATIONAL PROFILE

Cal Poly's California Cybersecurity Institute (CCI) teaches Californians to protect California. Cal Poly's CCI is located on Camp San Luis Obispo, home of the California Army National Guard. The CCI consists of three buildings (over 100,000 square feet) including a forensics lab, operations, training facility, and cyber range suitable for hosting large-scale, immersive training events. Through a combination of training courses, grants, special events, donations, and research efforts, the CCI offers an attractive environment for students from both technical as well as liberal arts majors to "Learn by Doing." The CCI provides training to multiple government and quasi-government entities such as the Bay Area Urban Area Security Initiatives, Northern California Regional Intelligence Center, State of California Commission on Peace Officer Standards and Training, and private organizations through California's Education Training Panel.

The California Cyber Innovation Challenge (CCIC) is the cybersecurity championship for the State of California. The CCIC focuses on providing California middle and high school students an engaging introduction into cybersecurity. The 2020 competition was themed around the convergence of space and cybersecurity and featured a virtual-immersive environment on Cal Poly's digital range. Students responded to a fictional storyline of a satellite that was hacked and falls to Earth. Participants engaged in a 3D immersive environment featuring multiple space-themed set designs to solve the cybersecurity mystery of

how the satellite was hacked (see Figure 1 to watch the live immersion environment).



Figure 1: The 2020 CCIC virtual environment:
<https://youtu.be/NGRVRURPeJU>

DRIVERS

- Need for more hands-on learning opportunities for students.
- Desire to align student training with employer expectations.
- Enable students from multiple disciplines to participate in building cybersecurity content.
- Raise awareness of the variety of cybersecurity careers.
- Goal to be a national leader in providing cybersecurity challenges.

PROCESS

CCI staff, students, and faculty adopted the NICE Framework, which provided a guide for our team to identify cybersecurity roles and skills, for the challenge.

By leveraging the NICE Framework to conduct this competition, students learn about:

- The Foundations of Cybersecurity
- Why Cybersecurity is Important
- Future Careers in Cybersecurity

The first step for our team was to identify the critical cybersecurity roles relevant to our competition. Next, we built the challenge as well as team training exercises for the event around the NICE Framework. For example, specific sections of the event are mapped to NICE Framework Task, Knowledge, and Skill statements.

Our challenge was to adapt the NICE framework for middle and high school students new to cybersecurity. We introduced a blended approach to expose students to different career fields and skillsets required in the cybersecurity marketplace.

TIE-IN WITH THE NICE FRAMEWORK

The NICE Framework helped us meet our objectives by providing a consistent reference language. Further, the mapping provided a listing of outcomes that students were able to use to describe their competence in cybersecurity.

“We want to recognize the importance of each student’s cybersecurity career pathways, and their knowledge of the NICE Framework is paramount to their success. The CCIC Cal Poly student team who created the CCIC challenges understands the magnitude of including ‘this blueprint to categorize, organize and describe cybersecurity work’. We are thrilled that NICE has supported our efforts in helping the next generation of cybersecurity professionals excel in this in-demand career!”

–Henry Danielson, Program Manager. Cal Poly California Cyber Innovation Challenge

BENEFITS & IMPACT

The 2020 CCIC was particularly unique to our team. Upon graduating high school, one of our past high school competitors began an internship at CCI and has had an active role in designing the 2020 competition. His perspective as a past competitor has been invaluable to our team.

Our goal is to expose more students from underrepresented communities to a career in cybersecurity and to the NICE Framework by participating in the CCIC. We are tracking the success of many of our student participants and are amazed at how this challenge has catapulted many students to explore cybersecurity as a future career.

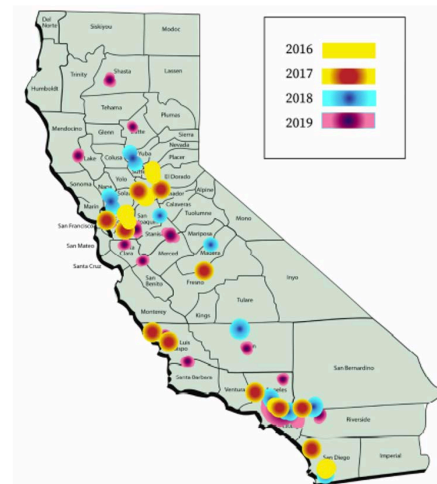


Figure 2: Where students have participated in the past

CONTACT INFORMATION & RESOURCES

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