



# CTE DIRECTIONS

## Career and Technical Education (CTE) News and Information

December 2020

**Career and Technical Education provides all students access to high-quality, rigorous career-focused programs that result in attainment of credentials with labor market value.**

### 2021 U.S Presidential Scholars in CTE Nominees

Congratulations to Nathan Ford, Owen Geiger, Andrew Grunander, Kaden Patten, and Laura Randall who have been nominated as a 2021 U.S. Presidential Scholar in Career and Technical Education. All five nominees have been nominated for this high honor because of their academic accomplishments, their technical competence, the certifications they have earned, and for their ingenuity and creativity to solve problems.

The 2021 U.S. Presidential Scholars semifinalist will be announced in April and the finalists will be announced in May.

#### Nathan Ford



Nathan Ford is a student at Cedar Valley High School. His goal is to pursue a career as an electrical engineer. Nathan has been nominated as a 2021 U.S. Presidential Scholar in CTE not only for his academic accomplishments but also for his ability to design many original devices.

Nathan won a contest where he designed and built a starship engineering panel for the Christa McAuliff Space Center in Pleasant Grove, UT. He competed against professional programmers and engineers, but ultimately his panel was chosen to be replicated in five state-of-the-art simulators. Nathan's panel uses buttons, switches, lights, dials, and plug in cables to teach 5th and 6th grade students STEM concepts such as graphing skills, binary, and algebra concepts. Because of design ability, the space center offered Nathan a job to help produce the panels and to consult on other projects.

#### Owen Geiger

Owen Geiger is a student at Jordan High School. His goal is to pursue a career in engineering. Owen has been nominated as a 2021 U.S. Presidential Scholar in CTE not only for his technical competence but also for his community service.

Owen has extensive experience in community service that involved volunteering with the Parks and Recreation department and working on several hiking and biking trails. He has also participated for four years with athletes in adaptive sports for veterans. Owen was instrumental in the installation and training of a new CNC plasma table, purchased by the welding program in his high school, to allow the class to create more complex projects. Owen took the initiative in the setup, programming, support, and leveling of the machine, as well as the required electrical and safety components of the installation. As an engineer, Owen wants to work on projects that improves quality of life and allows more people to participate in activities by developing personal adaptive equipment.



## Andrew Grunander



Andrew Grunander is a student at Box Elder High School. His goal is to pursue a career as a doctor of immunology and allergy study. Andrew has been nominated as a 2021 U.S. Presidential Scholar in CTE not only for his academic and technical accomplishments but also for his insight in recognizing a need in his community and one that will assist emergency medical professionals.

Andrew started a cotton candy business and within that business founded “Cotton Candy for Homework.” Cotton candy was awarded to children who finished their homework during online school. He served over 1,000 children throughout three cities, boosting morale, and keeping young students motivated during difficult times.

Andrew is developing image/video software that scans for unnatural body patterns, such as uncontrolled, rapid movement, and alerts EMS for assistance. “My favorite class was medical anatomy and physiology taught by Peter Burt. I loved this class because Mr. Burt doesn’t just care about the grade he cares about the student. He helped me further my career and technical education skills,” said Andrew.

## Kaden Patten

Kaden Patten is a student at Mountaincrest High School. His goal is to pursue a career in computer science and computer engineering. Kaden has been nominated as a 2021 U.S. Presidential Scholar in CTE not only for the certifications he has earned, and for the awards he has won in state IT competitions, but also for his ingenuity and creativity.

Kaden has developed several computer apps. One app, a sound meme board, has been downloaded 1,511 times in 52 countries. He also developed a meme blocker. He is known as someone who can figure things out. He is often relied on as a source of information by his peers.



“I really enjoyed my CTE classes. My favorite class was IT STEM, taught by Mrs. Amy Norman. I really enjoyed this class because it allowed us to work with all fields of information technology and we did a lot of hands-on work that allowed us gain real life experience, said Kaden.

## Laura Randall



Laura Randall is a student at American Fork High School. Her goal is to pursue a career as a dermatological surgeon. Laura has been nominated as a 2021 U.S. Presidential Scholar in CTE not only for her academic accomplishments and the certifications she earned but also for her community service—locally and internationally.

Laura was chosen out of 20 students from Utah to complete a medical internship in Vietnam, provided by FutureDocs Abroad – National Leadership Academy. During the internship, she was involved in hospital rounds, surgeries, pediatric cases, and labor and delivery. Laura was able to use the medical skills she learned in CTE and incorporate her vocal talent to help others. Laura feels great satisfaction in her work and hopes to change lives in the medical field.

“I love my CTE classes in my high school. My favorite one that I have taken is my medical emergency responder class, taught by Becky Bailey. I loved just how hands-on it was and how I received a certificate that I’ve been able to use in my everyday life. I am thrilled that as I look forward in my life that my goal to become a doctor, my love of science, and my goal to heal people’s bodies will be enhanced by my talent to also share vocal performance and heal their souls through music.” said Laura.

## Career and Technical Student Organization (CTSO)

Career and Technical Student Organizations provide relevant, engaging programs that improve student achievement, reduce dropout rates, and help students discover the wide range of career options available. In this video <https://youtu.be/V36OgSR456w> CTSO members tell what their favorite part is about being involved in CTE and a CTSO. CTSO members enjoy:

1. Learning career skills
2. Meeting new people
3. Networking
4. Preparing for the future



Students who are interested in joining a CTSO should contact the CTSO advisor in their school.

Utah CTSOs = [DECA](#), [Educators Rising](#), [FBLA](#), [FCCLA](#), [FFA](#), [HOSA](#), [SkillsUSA](#), and [TSA](#)

## Herriman High School Model Railroad Project

The CTE department at Herriman High School has started to develop a model railroad layout at the school. The layout will encompass almost all of the school's CTE departments during the development process. Once completed, the layout will be mobile and can easily be moved to different areas of the school for demonstrations and presentations.



The original idea for the project came from the school's computer science teacher, Sam Puich. He wanted to teach his AP computer science class how railroad signals are programmed to keep trains safely running on railroads. He planned to build a straight section of track and install some signals that the students could program and synchronize. He brought the idea to his principal, Todd Quarnberg. After discussing the idea, it grew to become an entire layout that multiple CTE programs can contribute to.

The layout features N scale trains running on a 4'x8' board. The trains are all computerized and programmed using digital command control. The students are currently wiring and programming the turnouts for the tracks. The computer science students are completing the track work, wiring, and programming. They will eventually program the signal system using Arduino computers linked to the layout. This design will allow any number of trains to run simultaneously, however, the plan will be for four trains to autonomously navigate the railroad.

As progress continues, the wood shop students will build the bench work and mobile table that the layout will permanently be displayed on. The FCS department will sew the skirt that will surround the layout and hide the bench work. The art department will paint the mural backdrops surrounding the layout. The engineering department is designing and 3D printing various structures for the model. Many of the students will be involved in the final scenery and details of the layout. Then the business and marketing department will eventually publicize the final project to television stations, newspapers, and hobby magazines.

The pandemic has greatly slowed the progress of this project, but the students are determined to see it through to completion. The train will be a permanent fixture in the school, one that many students will see and one that many students helped create.

## Calendar:

**December 3:** [Utah State Board of Education](#) Meeting – 250 East 500 South – Salt Lake City, UT

**December 10:** [Utah State Charter School Board](#) Meeting – 250 East 500 South – Salt Lake City, UT

[Utah CTE Calendar](#) | [ACTE Calendar](#) | [Utah School Calendars](#)



Utah CTE classes are open to all qualified students without regard to race, color, national origin, sex, disability, or age.