



Upcoming Events

- Sept. 21 – Health Science Best Practices Session – Watertown
- Sept. 27 – Deadline for CTE Presidential Scholar nominations
- Sept. 29 – SDMyLife Training, Sioux Falls
- Oct. 2-3 – SD Invests Training Yrs. 1 & 2 – Sioux Falls
- Oct. 5 – New Teacher Academy, Huron
- Oct. 8 – SDMyLife Training, Rapid City
- Oct. 20 – MakerSpace Training – Harrisburg
- Oct. 27 – SD Invests Training Yr. 4 – Rapid City

Register for these events and more at southdakota.gosignmeup.com

CTE Monthly Newsletter Turns One!

September marks the first anniversary of the CTE Monthly Newsletter. This anniversary issue is packed full of upcoming events, professional development opportunities, exciting news about what's happening in the world of CTE and more! Take advantage of the many opportunities the DCTE has to offer. Some exciting events include our New Teacher Academy, which begins on October 5 in Huron. You can register for that at <https://southdakota.gosignmeup.com/public/course/browse?courseid=3639>.

Also, be on the lookout for information about the kick off of our 2nd Annual Infographic Contest, which will be held October 1-December 31. More details will also be available in our October newsletter.

Another exciting opportunity is our CTE 101 course offering, which will be available ONLINE in January. An alternative to the in person training, meetings will take place online the first and last Wednesday in January of 2016. You can register for that NOW at <https://southdakota.gosignmeup.com/public/course/browse?courseid=3667>.

Finally, other important dates to remember include the upcoming Program Improvement Meetings. Attendance at these meetings is mandatory for approved CTE program. Save the following dates, and look for more information coming soon:

November	2	Rapid City
November	3	Pierre
November	4	Aberdeen
November	5	Mitchell
November	6	Sioux Falls

Maker Space Cadet Camp to be held at Harrisburg South Middle School



Are you ready to join the Maker Space movement? The first question you may ask is, "What is Maker Space?" The maker space movement was sparked by

the need for creative, problem-solving individuals in the work place and beyond. In this culture, individuals who create things are called "makers." Makers come from all walks of life, with diverse skill sets and interests. The thing they have in common is creativity, an interest in design and access to tools and raw materials that make production possible.

A maker space is essentially a workshop-type place where students can express their creativity and imaginative thinking

through the materials given. They can make their dreams and ideas a reality through the use of the maker space. The general focus is in the STEM area but also encompasses art and design which are fundamental principles for engineering.

Here is a link to a video showcasing the maker space at Harrisburg South Middle School https://www.youtube.com/watch?v=7Q_jzstgw_M

Travis Lape, Harrisburg South Middle School Technology Integrationist, will be leading workshop participants through the process of developing a maker space and sharing information about how to start a maker space at your school. The hands-on Maker Space Cadet Camp will be held October 20 at Harrisburg South Middle School.

The workshop is being sponsored by the SDDOE – Department of Career and

Technical Education. The workshop is open to all CTE teachers, administrators, media specialists, technology integrationists, and anyone who would like to learn more about this exciting way to enhance STEM at your school. Space is limited to 30 participants so register early to ensure your spot.

- The link to register is: <https://southdakota.gosignmeup.com/public/course/browse?courseid=3666>
- There is no cost for the workshop except lunch - which is on your own
- 5 CEU's will be given for workshop completion
- For more information about developing a Maker Space - <https://www.youtube.com/watch?v=7NUjR9l6vyE>

Connecting Classrooms

The connection between the traditional classroom and CTE is an exciting one, and the staff at Sturgis Brown High School provides the perfect model. The 2015-2016 Geometry in Construction program at Sturgis Brown High School is alive and well. This year's class currently has 21 students enrolled, down from about 40, with approximately half male and half female.



The program has been a great success with the completion of no less than five Habitat for Humanity homes to date. Due to logistics issues, they have modified the program to build cabins for the first time.

The Black Hills are full of camp grounds in need of cabins, and this fits the program perfectly. The purchaser of the cabins will provide all materials necessary to complete the job and is responsible for the transport/relocation of the cabins when complete.

The class plan on initially building two cabins for the Buffalo Chip camp ground and, if time allows, one to two more before the end of the school year.

The students and staff are very excited about this opportunity. Chad Hedderman, who initiated this program, has now moved on to become the Assistant Principal at

Sturgis Brown. The program carries on with Jon Swan; the new construction teacher, who has continued to partner with Deb Cano, the geometry teacher, to keep this venture going. Mr. Pete Wilson is the new Principal and is very supportive of the program. Sturgis Brown High School looks forward the next chapter of this very successful partnership.

For further examples of the exploration between what students are studying in K-12 classrooms today and how that translates to jobs and careers, please enjoy the following videos. Both feature South Dakota educators and employers.

- **Mathematics:** [Connections to the Workforce](#)
- **English Language Arts:** [Connections to the Workforce](#)

Postsecondary Partner Highlight

State Board of Education approves new WDT programs

The South Dakota Board of Education approved three new programs for Western Dakota Tech on Monday, August 24, 2015. The programs are Cybersecurity, Dental Assistant, and Medical Laboratory Technician.

Labor market information indicates that demand for workers in these fields is strong in South Dakota and nationally. WDT will offer the programs beginning in 2016.

A closer look at the cyber security program

Cybersecurity students will complete classes in network security, network defense and countermeasures, information security, databases, computer forensics, and more. The industry is currently experiencing unprecedented growth due to the dramatic increase in computing and communications technologies across the globe. Through 2022, the number of Information Security Analysts will grow by 25 percent in South Dakota and 37 percent nationally.

The recent slew of high-profile data breaches (like the one that afflicted Target and millions of the retailer's customers) have highlighted the need for skilled cybersecurity workers. Currently, the supply is not meeting demand: There are presently as many as 300,000 unfilled security jobs across the country, according to a report from The Abell Foundation and CyberPoint International.

According to the Cyber Security Jobs Report, the dramatic proliferation of computing and communications technologies across the globe has caused unprecedented growth in the cybersecurity industry. This growth has created an urgent need for qualified individuals to fill current job openings and to develop the skilled workforce necessary to address job growth in the

future. The WDT Cybersecurity program has been designed to prepare students for those opportunities. Students will complete classes in network security, network defense and countermeasures, information security, databases, and computer forensics.

Graduates of the program will be able to accomplish the typical duties of a cybersecurity professional, including:

- Monitoring their organization's networks for security breaches and investigate a violation when one occurs
- Installing and using software, such as firewalls and data encryption programs, to protect sensitive information
- Preparing reports that document security breaches and the extent of the damage caused by the breaches
- Conducting penetration testing, which is when analysts simulate attacks to look for vulnerabilities in their systems before they can be exploited
- Researching the latest information technology (IT) security trends
- Helping plan and carry out an organization's way of handling security
- Developing security standards and best practices for their organization
- Recommending security enhancements to management or senior IT staff
- Helping computer users when they need to install or learn about new security products and procedures

WDT is the only technical institute that serves the western South Dakota region. WDT offers more than 20 programs in a variety of fields, including Business and Computers, Construction Trades, Health Services, Legal and Public Services, Manufacturing and Mechanical Trades, and Science and Technology.

For information about WDT, call (800) 544-8765 or (605) 718-2565 or send an email to admissions@wdt.edu. Visit WDT on the web at www.wdt.edu.



Career Cluster:

STEM

STEM is an acronym for Science, Technology, Engineering and Math. This career cluster encompasses unlimited career opportunities. Workers in this cluster provide solutions to technical problems across many industries. If you think creatively, wonder how to make things better and can apply what you've learned in math and science classes to solve real-world problems, a career in STEM may be for you!

There are two pathways in the STEM cluster:

- Engineering & Technology
- Science & Mathematics

Students considering a career in the STEM field should consider taking courses in:

- Mechatronics/Robotics
- Principles of Engineering
- Engineering Design & Development
- Chemistry
- Mathematics
- Physics

Suggested school activities for those interested in the STEM cluster include:

- Project Lead the Way
- Robotics Clubs
- HOSA
- Science Fairs



Data Highlight:

STEM

- Starting salary for a civil engineer is between \$49,100 and \$54,800
- There is a 18.3% demand in market growth for engineers between 2012-2022
- The average hourly wage for electrical engineers in South Dakota is \$36.27



Presidential Scholar Nominations being Accepted Now

The South Dakota Department of Education is seeking candidates for the state's nominations for U.S. Presidential Scholars. The program was established by President Lyndon Johnson in 1964, and, since that time, has honored more than 7,000 outstanding high school seniors. President Obama recently amended the program by adding a new component – recognition for excellence among students in career and technical education (CTE).

This year each Chief State School Officer can nominate up to 20 students in the traditional Scholars program: 10 males and 10 females. Additionally, up to five students in CTE can be nominated. All high school seniors graduating between January and June of 2016 who are U.S. citizens or legal permanent residents and who attend public, parochial, or independent schools, as well as those who are home-schooled, are eligible.

Nominations must be submitted by 11:59 p.m. on Sunday, September 27, 2015. Incomplete submissions will not be considered. A checklist of information needed to complete a nomination is attached. Learn more and submit nominations at <http://www.sdmylife.com/educators/presidentialscholar/>.

DCTE Employee Profile:

Tiffany Sanderson



Welcome to the 2015-16 school year! Thanks for the role you play in preparing students for their life after high school. I'm Tiffany Sanderson, state director for career & technical education. I love this work and partnering with educators, businesses, industry organizations, and state agencies to ensure our students can navigate multiple avenues to success in postsecondary education and the world of work.

I've been at the Department of Education since 2009. My work focuses on the technical institutes, partnerships with CTE stakeholders, policy and funding. Prior to DOE, I worked for a start-up education company, Vivayic, in Lincoln, NE and for the National FFA Organization in Indianapolis, IN.

I live in Pierre with my husband, Nathan, and 8-year old son, Carter. We love staying active, seeking adventure, traveling, spending time with good people, eating (I would say cooking/baking, but let's be real) and cheering on our son and nephews in their activities.



In The News

Madison High School opens new STEM class this fall

DOE seeking recommendations for CTE programs

Community college grads out-earn bachelor's degree holders

 **Learning that works for South Dakota**

800 Governors Drive | Pierre, SD 57501-2291
P: 605.773.3423 | F: 605.773.4236 | doe.sd.gov

