# **ADVANCE CTE EXCELLENCE IN ACTION AWARD**

**PROGRAM SUMMARY**

Advance CTE is pleased to announce a call for applications for the sixth annual Excellence in Action awards, through which we recognize and honor superior Career Technical Education (CTE) programs of study from across the nation.

**CRITERIA FOR JUDGING**

Selected programs will exemplify excellence in:

* Implementing Career Cluster®-based [programs of study](https://careertech.org/programs-study);
* Maintaining effective employer and business partnerships;
* Demonstrating alignment to rigorous and relevant college- and career-ready expectations;
* Demonstrating a clear progression of knowledge and skills and learner transitions across secondary and postsecondary systems;
* Integrating successful career guidance and advisement;
* Integrating high-quality work-based learning experiences;
* Highlighting alignment to workforce and employer needs in the community;
* Providing concrete data on the program of study’s impact on learner achievement, success at both the secondary and postsecondary levels and meeting the needs of underserved populations; and
* Delivering high-quality and effective instruction.

**ELIGIBILITY**

* This award is open to any public secondary or postsecondary schools or colleges in the United States. Your school or institution may submit one application per [Career Cluster](http://careertech.org/career-clusters);
* The program of study must have at least one full graduating class;
* Your program must be eligible to receive funding from the Carl D. Perkins Career and Technical Education Act;
* Applications that do not include data to demonstrate positive impact on learner achievement will not be eligible for consideration.
* If your program has received in an Excellence in Action award from Advance CTE in the past, you may not apply for that same Career Cluster. However, your school or institution may apply in a different Career Cluster.

**AWARD SUBMISSION REQUIREMENTS**

Complete applications will contain the following:

* A completed application including supplemental materials by the application deadline of **November 21, 2018 at 5 p.m. ET.**
* At least one letter of support from an employer or business partner supporting the program of study; and
* At least one additional letter of support from a partner (education, community or business) of your choosing.
* *Optional:* Supplemental materials including photos, videos, news articles, etc., are welcome but not required.

The application must be submitted using [this form](https://careertech.org/2019-excellence-action-application). The application must be submitted in a Microsoft Word format. Supplemental materials, including the letters of recommendation, must be combined and submitted as **one** PDF document.

*Please note:*

* Submissions should **not** include any personally identifiable learner data.
* The application does not have a page limit, however, many questions do have a word limit. Please do not submit responses that go beyond this limit. Also, submissions that do not contain all the required materials (a completed application, two letters of support and supplemental materials in the correct formats) will not be advanced for consideration.

**WINNERS WILL RECEIVE**

* A banner to hang in their school or institution;
* A digital banner to use in email and print materials as they so choose;
* Travel and one hotel room for one night in Washington, DC for a representative to be recognized at an awards ceremony to be held the week of April 8-10, 2019 at the Advance CTE Spring Meeting; and
* Discounted rate to the Advance CTE Spring Meeting

**WINNERS WILL ALSO BE FEATURED IN**

* A national press release, which will be distributed to national media.
* A winner-specific press release to distribute to local media;
* A standalone one-pager;
* A standalone blog on the [Learning that Works blog](http://blog.careertech.org/);
* Representation on the Advance CTE [website](http://www.careertech.org).
* Many past winners have been featured in national conferences, in briefs and reports, on webinars and in the media.

**HOW TO APPLY**

* Fill out the following application.
* Once you have finished, complete [this form](https://careertech.org/2019-excellence-action-application) and upload the following:
* Your full application saved as a Word document (.docx)
* All of your supplemental documents or evidence consolidated as one PDF document.

# **BACKGROUND INFORMATION**

1. Program of study name: Project Lead The Way Biomedical Science
2. Point of Contact
 Name: Jeffrey Crapper

Email Address: jeffrey\_crapper@beaverton.k12.or.us

Phone Number: 503-550-0920

Address: Health & Science High School, 18640 NW Walker Road, Beaverton, OR, 97006

1. Applicant’s School/College: Health & Science High School
2. State: Oregon
3. Type of institution (click the box to check)

 ☐ Area technical center

X Career academy

 ☐ Comprehensive high school

 ☐ Community college

 ☐ Technical college

Other (please specify)

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| --- |
|  |

1. Career Cluster in which your program of study should be considered (Follow this link for a further explanation of each Career Cluster [careertech.org/career-clusters](http://careertech.org/career-clusters)) **(Select only ONE):**

 ☐ Agriculture, Food & Natural Resources Career Cluster

 ☐ Architecture & Construction Career Cluster

 ☐ Arts, A/V Technology & Communications Career Cluster

 ☐ Business Management & Administration Career Cluster

 ☐ Education & Training Career Cluster

 ☐ Finance Career Cluster

 ☐ Government & Public Administration Career Cluster

 X Health Sciences Career Cluster

 ☐ Hospitality & Tourism Career Cluster

 ☐ Human Services Career Cluster

 ☐ Information Technology Career Cluster

 ☐ Law, Public Safety, Corrections & Security Career Cluster

 ☐ Manufacturing Career Cluster

 ☐ Marketing Career Cluster

 ☐ Science, Technology, Engineering & Mathematics Career Cluster

 ☐ Transportation, Distribution & Logistics Career Cluster

1. In three sentences or less, describe your program of study, including the secondary and postsecondary components and how long the program of study has been in place.

In its fifth year, Project Lead The Way (PLTW) Biomedical Science students at Health & Science School explore and discover solutions to some of today’s most pressing medical challenges. Students work together in teams to find unique solutions, and in the process, learn in-demand, transferable skills such as critical thinking and communication. Through scaffolded activities that connect learning to life, students step into the roles of biomedical science professionals and investigate topics including human medicine, physiology, genetics, microbiology, and public health as well as work with the same equipment and tools used by lab professionals.

1. Please check the geographical and demographic setting for your program of study and describe the geographic and economic conditions of the region served by the school.

 ☐ Urban

 X Suburban

 ☐ Rural

 ☐ Other

1. Please describe how your program of study was developed and how it ensures learners are academically and technically prepared for both postsecondary education and careers. Please also address the following:
	1. How were employers involved in the development and continue to be involved in the maintenance of your program of study?
	2. How does this program of study meet the economic needs of your community?
	3. How does this program prepare learners for postsecondary education? (if applicable)
	4. How were both secondary and postsecondary educators involved in the development and/or maintenance of the program of study? (500 word limit)

The backbone of our biomedical program of study is supported by the nationally recognized Project Lead the Way (PLTW) STEM-based curriculum. Our goal is to inspire, engage, and empower historically marginalized and underserved sixth through twelfth grade students by providing them with transformative learning experiences. Our school expects student excellence in the areas of mastering knowledge and skills, developing character and producing high-quality student work. Naturally, this foundation supports our Health Science CTE program of study as we aim to provide students with the skills necessary for postsecondary rigor and 21st century needs in the health-care field.

Many of Oregon’s health professionals are nearing or have already passed traditional retirement age.  Consequently, there is a need to educate and train additional health care providers in our local community. Our program of study is continually shaped by local industry as we do our best to provide career related opportunities to our students. For example, we recently started working with Bridgetown Physical Therapy to further develop our biomechanics and gait analysis research opportunities. Students are working alongside industry professionals using our motion capture, wireless EMG, and force plate systems in order to screen for muscular or skeletal imbalances that may lead to potential athletic injuries.

The PLTW Biomedical Studies curriculum has been enhanced through our strong partnerships with industry professionals, employers, and educational experts. In order to model best practices, we continuously innovate and update our program to best prepare our students for a 21st century workforce and beyond. PLTW requires all teachers to participate in two-week intensive professional development during the summer as well as ongoing training throughout the year. Career explorations are intentionally integrated into all four of the biomedical courses. Locally, our program has been influenced by Oregon Health and Science University Primate Center with the incorporation of Oncofertility content, Kaiser Permanente, Providence Medical Group, and Tualatin Valley Fire and Rescue. Our program of study meets the economic demands of the Washington County community, which has the second highest concentration of health-related professions in the Oregon.

We also work closely with Oregon Institute of Technology and other educational communities to articulate all of our program of study courses for college credit. College professors visit our classrooms, video conference with teachers, meet in Professional Learning Communities, and collaborate on assessments and other academic resources. Our students are able to take courses on-campus through Advanced Credit Programs and High School Transition Programs during the school year and in the summer at a reduced or no cost through Oregon Institute of Technology.

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# **LEARNER POPULATION & DATA**

1. Please describe your program of study’s demographic and outcome data for the most recent academic year(s). It is our strong preference to have data from both secondary and postsecondary levels. If this is not available, please provide an explanation as to why the data from the other learner level is not available. Applications that do not include data to support positive impact on learner achievement will not be eligible for consideration. (100 word limit)

Health & Science School actively recruits marginalized and historically underserved/underrepresented students, and our students are more diverse by income and ethnicity than other schools in the Beaverton School District. As an options school, our school graduates classes of approximately 60-70 students annually with an approximate 95 percent graduation rate. Due to our small graduating class, some post-secondary data is not tracked due to the limited number of students in each of these subgroups. The National Student Clearinghouse only reports on subgroups that contain at least 10 or more students, and the post-secondary percentages are underreported as a result.

**Student Profile**

|  |  |
| --- | --- |
| American Indian/Alaska Native | 1% |
| Asian | 11% |
| Black/African American | 3% |
| Latino | 32% |
| Multiracial | 6% |
| Native Hawaiian/Pacific Islander | 0% |
| White | 46% |

**Selected Demographics**

|  |  |
| --- | --- |
| Economically Disadvantaged | 53% |
| Students with Disabilities | 10% |
| Ever English Language Learner | 33% |
| Different Languages Spoken | 31 |

|  |  |  |  |
| --- | --- | --- | --- |
| SCHOOL YEAR | 2015-16 | 2016-17 | 2017-18 |
| **SECONDARY-LEVEL DATA** |
| **What is the total number of learners served by your school/institution?**  | 667 (grades 6-12) | 667(grades 6-12) | 760(grades 6-12) |
| What is the total number of minority learners served by your school/institution? | 360 | 370 | 250 |
| What is the total number of low-income learners served by your school/institution? | 320 | 302 | 342 |
| What is the total number of learners with disabilities served by your school/institution?  | 73 | 68 | 58 |
| What is the total number of English language learners served by your school/institution?  | 253 | 226 | 226 |
| **What is the total number of learners served by your program of study?** | 145 | 169 | 211 |
| % male learners in program of study  | 61% | 41% | 47% |
| % female learners in program of study  | 39% | 59% | 53% |
| % minority learners program of study  | 55% | 61% | 55% |
| % low-income learners program of study  | 48% | 55% | 53% |
| % learners with disabilities program of study  | 11% | 17% | 12% |
| % English language learners program of study  | 38% | 32% | 33% |
| Other relevant *demographic* data from your **program of study: HOSA Involvement** | 45 | 60 | 55 |
| % of learners in program of study who earned postsecondary credit (dual enrollment, AP, etc.)  | 92% | 100% | 100% |
| % of learners in program of study who earned an industry-recognized credential  | 0% | 5% | 28% |
| % of learners in program of study who participated in work-based learning  | 100% | 100% | 100% |
| % of seniors in program of study who graduated high school (who were eligible/seniors) | 90% | 90% | 100% |
| % of graduates in program of study who enrolled in postsecondary education (who were eligible/seniors)  | 67% | 75% | 82% |
| % of graduates in program of study who entered the workplace and/or military (who were eligible/seniors)  | 33% | 25% | 18% |
| **POSTSECONDARY-LEVEL DATA** |
| **What is the total number of learners served by your school/institution?**  | Data Unavailable | Data Unavailable | Data Unavailable |
| What is the total number of minority learners served by your school/institution? | Data Unavailable | Data Unavailable | Data Unavailable |
| What is the total number of low-income learners served by your school/institution? | Data Unavailable | Data Unavailable | Data Unavailable |
| What is the total number of learners with disabilities served by your school/institution?  | Data Unavailable | Data Unavailable | Data Unavailable |
| What is the total number of English language learners served by your school/institution?  | Data Unavailable | Data Unavailable | Data Unavailable |
| **Total number of learners served by your program of study**  | Data Unavailable | Data Unavailable | Data Unavailable |
| % male learners in program of study  | Data Unavailable | Data Unavailable | Data Unavailable |
| % female learners in program of study  | Data Unavailable | Data Unavailable | Data Unavailable |
| % minority learners in program of study  | Data Unavailable | Data Unavailable | Data Unavailable |
| % low-income learners in program of study  | Data Unavailable | Data Unavailable | Data Unavailable |
| % learners with disabilities in program of study  | Data Unavailable | Data Unavailable | Data Unavailable |
| % English language learners in program of study  | Data Unavailable | Data Unavailable | Data Unavailable |
| **Other relevant *demographic* data from your program of study: College State/National HOSA officers** | 0 | 1 | 3 |
| % of learners in program of study who completed postsecondary/earned a degree or certificate (who were eligible)  | Data Unavailable | Data Unavailable | Data Unavailable |
| % of learners in program of study who earned an industry-recognized credential (who were eligible)  | Data Unavailable | Data Unavailable | Data Unavailable |
| % of graduates in program of study who entered the workplace and/or military (who were eligible)  | Data Unavailable | Data Unavailable | Data Unavailable |
| % of graduates in program of study who transitioned to further postsecondary education (who were eligible) | Data Unavailable | Data Unavailable | Data Unavailable |

\* Unfortunately, post-secondary data is not available for our program of study through Portland Community College, Portland State University or Oregon Institute of Technology which are the primary colleges that our students attend.

**NOTE**: Please specify if and when you are using a percentage with a different denominator (e.g., seniors) than the one listed.

**When completing the data section, please only use percentages and include data that is from your program of study. Additionally, only include data where learners are eligible to participate (e.g., only seniors in high school will be eligible for the section asking for percent of seniors who graduated high school, so only seniors should be included in that data; if your work-based learning only occurs within a specific grade level, only include them in your data for that category.)**

1. Provide links to the source of the above data. If the links are not publicly accessible, please explain the source of the data. If you are missing any data, please explain why and how you measure success.

<http://www.ode.state.or.us/data/reportcard/reports.aspx> - Click on Beaverton School District and then on Health & Science High School

<http://www.studentclearinghouse.org/high_schools/studenttracker> - Data was obtained from the National Student Clearinghouse through the Beaverton School District Central Office.

Registrar Report- Beaverton School District

1. How does your school or institution ensure equitable access for learners with diverse backgrounds? (150 word limit)

With 24 languages spoken in the homes of our students, we are committed to equitable outcomes and the success of every student in our Health Science CTE program. Our district has early release on Wednesdays, allowing teachers to collaborate in professional learning communities and to focus on student achievement, ensuring we are providing equitable access and outcomes for our students. This year, our program of study is specifically focused on improving outcomes for our Latino populations. Additionally, we implement an active Expeditionary Learning advisory program called CREW. Staff members are paired with a small cohort of students to mentor and advise them throughout their four years of high school. “WE ARE CREW” is our motto, and our teachers build strong relationships with students and serve as advocates for them academically and personally. These efforts have resulted in a steadily improving graduation rate.

1. How do you ensure learner success, especially of those who from diverse backgrounds? Please provide examples of what supports you offer learners. (150 word limit)

As one of six options high schools in the Beaverton School District, Health and Science School engages in purposeful recruitment efforts aimed at economically, racially, and gender diverse students to minimize the achievement gap. We host three open house events where we highlight our health science CTE pathway, as well as our internship and career-related opportunities. We work with district guidance counselors at the elementary schools to specifically recruit a diverse student student body. We have intentionally built trust with these communities that are traditionally underserved.  HS2 is a grade 6-12 school, which allows us to collaborate with the middle school teachers in order to outreach and recruit starting in 5th grade. All of our freshman students take a quarter of biomedical science and a quarter of engineering, before choosing their desired CTE pathway program.
2. Is your program of study associated with a Career Technical Student Organization (CTSO)? If so, which one(s) and in what way(s)? (Check the [approved list](http://www.ctsos.org/ctsos/) of CTSOs) (50 word limit)

Our HOSA CTSO program has grown tremendously from four to more than ninety members. Former students have served as Oregon HOSA President, President-Elect and Vice President of Leadership. Last year, twenty four students qualified in multiple events for the International Leadership Conference, which was the largest group from Oregon.
3. Describe how career guidance/advisement is integrated into your program of study to support learners’ completion of the program of study and entry into additional education/training and/or a successful career. Describe how you recruit students into CTE programs. Where applicable, describe the tools (individual career and academic plans, career exploration websites, etc.) that are provided to learners and how they are used. (200 word limit)

A major strength to our program is the opportunity for students to participate in career-related internships. Our full-time internship coordinator organizes career experiences for our students, which helps guide their interest and completion in our program. It is often their experiences as a Kaiser Permanente Intern or a Tualatin Valley Fire and Rescue Intern that encourages students to work harder academically. Career exploration is integrated into all of our PLTW courses and students research careers from a phlebotomist to a crime scene investigator to a biotechnician. Additionally, our HOSA chapter serves as an opportunity for students to practice industry related skills, listen to guest speakers, and learn soft-skills needed for 21st century employment.  Many of our students have access to Advancement Via Individual Determination (AVID) to further strengthen their commitment to being college and career ready. Finally, our dual-credit relationships with Oregon Institute of Technology and other educational partners are paramount to encourage students to pursue college credit and build confidence in their academic abilities by engaging in rigorous coursework.

1. Which technical, academic and/or employability standards does your program of study incorporate at the secondary and/or postsecondary level and how? (Please list the standards you use and be specific regarding how your program uses industry, national, state and/or locally-developed standards) (250 word limit)

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| --- | --- |
| **Standard Types**  | Please list the standards your program of study uses and how it uses them below:  |
| Academic Standards | **Project Lead the Way uses:****NGSS Science****Common Core: Math and Language Arts****National Health Science Standards****See Example for Human Body Systems course** https://lh6.googleusercontent.com/AzSbZkTQ09usi3STNTQ7F3HBdY8o1funNzYAGBeNWRFkOB3GDG_YCvwn3QvjLWNGyD8IaYjHEvgN0oOmzjHsCLfAH_QGIbRhm04jaU3xbZ3HZ9oDcXaFy8-RkcSFJGLLXNHqM88- |
| Career Cluster or Technical Standards | **Health Science Career Cluster Knowledge and Skills: Health Science HSZ01.01, HSZ05.01, HSZ06.01, HSZ07.01,HSZ08.01, HSZ08.02, HSZ10.01, HSZ10.02, HSZ10.04, Health Promotion & Wellness HLPZ01.01,  HLPZ02.01, HLPZ03.01, HLPZ04.01, HLPZ06.01, Health Research and Bioscience HLPE01.01, HLPE02.01,HLPE02.02, HLPE03.01, HLPE03.02, HLPE04.01, HLPE04.02, HLPE05.01, HLPE06.01** |
| Employability Standards  | **Applied Academic Skills****Interpersonal Skills****Critical Thinking** **Technology use** |
| Other | National Health Science Standards  |

Our Biomedical Studies program uses an “Activities, Projects, Problems-based” approach to deliver curriculum that exposes students to the NGSS, Common Core, and National Health Science academic standards. Activities allow students to gain knowledge and skills, projects provide students the opportunity to find meaning and investigate, and problems compel students to apply and transfer their learning. Collectively, these are critical industry-related practices that directly align with Oregon Career Skill Sets.

# **SEQUENCE OF COURSES & CREDIT TRANSFER**

1. Please fill out the chart below, and describe your program of study’s course sequence by grade level, including the relevant or required academic and technical courses, as well as other required activities.

**Make sure to highlight the course sequence that bridges secondary and postsecondary education.** Explain how your program of study ensures learners gain the broader Career Cluster-level knowledge/skills and, over time, gain the more specific occupation-level knowledge/skills as they progress through the program of study. You can also include graphics or [plans of study](https://cte.careertech.org/sites/default/files/PlanPathways-CareerCluster-AG-AgribusinessSystem.pdf) of the course sequence in lieu of filling out the chart below.

**The following are the Health Science CTE courses of study at Health & Science School:**

* Grades 6-7:Medical Detectives
* Grade 9: Principles of Biomedical Studies
	+ Test by Proficiency- Missouri S&T Bio 1943: Introduction to Human Anatomy & Physiology I
* Grade 10: Human Body Systems
	+ Dual Enrollment - Oregon Institute of Technology BIO 103: Introduction to Human Anatomy
	+ Dual Enrollment - Oregon Institute of Technology BIO 200: Medical Terminology
	+ Test by Proficiency- Missouri S&T Bio 1953: Introduction to Human Anatomy & Physiology II
* Grade 11: Medical Interventions
	+ Dual Enrollment - Oregon Institute of Technology BIO 109: Introduction to Medical Science
	+ Test by Proficiency- Missouri S&T Bio 1983: Introduction to Biomedical Design and Innovation
* Grade 12: Principles of Biomedical Studies
	+ Dual Enrollment - Oregon Institute of Technology HED 240: Emergency Care & CPR
	+ Dual Enrollment - Oregon Institute of Technology HED 275: Introduction to Sports Medicine
	+ Dual Enrollment- Missouri S&T Bio 1993: Introduction to Biological Innovation (BI)
	+ Bloodborne Pathogens Certification
	+ First Aid Certification/CPR Certification
	+ Pharm Tech Certification
	+ NASM Personal Training Certification
	+ EMR Certification
* CTE Internships – Health Science (Grades 9-12 years)

**Post-Secondary Opportunities for Health & Science School Students**

* **Option 1:** PCC Medical Assisting
	+ 16 of 16 credits necessary for program prerequisites completed as dual credit
	+ 3 of 46 credits obtained as dual enrollment at Health & Science School
* **Option 2**: OIT- Nursing Transfer Degree
	+ 7 of 79 credits obtained as dual enrollment at Health & Science School
* **Option 2**: OIT- Biology Health Sciences Degree
	+ 15 of 181 credits obtained as dual enrollment at Health & Science School
* **Option 4:** Portland State University- Pre-med Program
	+ 12 credits credits obtained as dual enrollment at Health & Science School
* **Option 5:** Oregon State University- Doctorate of Pharmacy Early Assurance Pre-Pharm Program
	+ 8 credits obtained as dual enrollment at Health & Science School

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| --- | --- | --- | --- | --- | --- | --- |
| Grade/ Year | English/ Language Arts | Math | Science | Social Studies/ Sciences | Other Required Courses/ Electives | CTE Courses and/or Degree Major Courses |
| **9** | Humanities: Language Arts  | AGS 1 or AGS 2 | Physics | Humanities: Social Studies 9 | Spanish or AVID | Principles of Biomedical Science\* |
| **10** | Humanities: Language Arts 10 | AGS 2 or AGS 3 | Chemistry\* | Humanities: Social Studies 10 | Spanish or AVID | Human Body Systems\* |
| **11** | Writing 120 | AGS 3, AP Stats\*, or Pre-calculus\* | Biology\* | Government or Economics | Spanish\*, Computer Science\*, Filmmaking, or AVID | Medical Interventions\* |
| **12** | Writing 121\* | AP Stats\*, Calculus\*, Pre-calculus\* | Computer Science\* or Engineering Design & Development\* | Law | Spanish\*, Filmmaking, or AVID | Biomedical Innovations\* |

\* denotes a course articulated for dual college credit

**PLTW Biomedical Science Foundation Courses**

|  |
| --- |
| **Principles of Biomedical Studies:** By engaging in activities like dissecting a sheep heart, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person.  |
| **Human Body Systems:** Through projects such as determining the identity of a skeleton using both forensic anthropology and DNA analysis, students examine the interactions of human body systems and apply what they know to solve real-world medical cases. |
| **Medical Interventions:** Students delve into activities like designing a prosthetic arm as they follow the life of a fictitious family and investigate how to prevent, diagnose, and treat disease. |
| **Biomedical Innovation:** Students build on the knowledge and skills gained from previous courses to design their own innovative solutions for the most pressing health challenges of the 21st century. |

1. How do you ensure that CTE instruction and coursework is integrated with core academics? Please provide one, specific example.

The biomedical science pathway is also aligned with National Health Standards. Thus, we know that our CTE instruction and coursework has ample ties to core academic concepts. Health Science CTE Instructors work collaboratively with our general education and core academic instructors. PLTW curriculum aligns with Common Core State Standards for Mathematics and English Language Arts, as well as Next Generation Science Standards. For example, the Statistics and Calculus instructor will teach corresponding topics from our Health Science CTE courses.  Our Law and Government instructor will embed real-life Health/Medical examples into her instruction. Each of our Health Science CTE instructors also teach Science courses, including Physics, Chemistry and Biology, which provide opportunities for students to learn the direct application of Health Science concepts in the Science classroom.

In addition to implementing the PLTW Biomedical Sciences curriculum into our Health Science CTE program of study, Health and Science School developed a state of the art Biomedical Studies Lab to enhance the learning opportunities available to our students. Last year, our Health Science faculty developed a Lab Assistant course where current seniors complete independent research topics using our Optitrack Motion Capture System, Bertec Biomechanics Force Plate, Cardio Coach VO2 Max machine, Deslys Wireless EMG and Anatomage Virtual Cadaver Table.  These senior lab assistants also develop guides and instructional tools for their peers in the Biomedical Innovation capstone course.

Currently, Health & Science School is one of approximately ten high schools in the nation that has implemented the Anatomage Cadaver Tables in their Health Science program of study. Students, as young as sixth grade, have access to this innovative technology.  Our Biomechanics equipment; which includes the motion capture system, force plate, and wireless EMG systems, also rivals the equipment in most graduate school programs and greatly enhances the projects that our students complete in our PLTW courses.

1. List the opportunities for learners to earn articulate and/or transcript dual enrollment credit across K-12 and postsecondary, such as AP/IB, dual and concurrent enrollment, capstone experiences and/or transcripted credit articulation agreements. (250 word limit)

The Health Science CTE Program has been articulated with the Biology-Health Science program at Oregon Institute of Technology. Our PLTW students also earn college credit by proficiency through PLTW affiliate colleges, such as University of Colorado- Colorado Springs and University of Missouri Science and Technology through passing an end-of-course exam.  Credit is awarded for these exams similar to an Advanced Placement (AP) or International Baccalaureate (IB) exam if students score in the 75th percentile or higher.

The Biomedical Studies Program at Health & Science School requires students to successfully complete a capstone experience.  As part of this experience, students develop a case study for a fictional athlete who experienced a significant athletic-related injury.  Each injury rehabilitation project must contain detailed physiological and psychological medical interventions, as well as explain the surgical method recommended for this type of injury.  Students must successfully defend their work in front a panel of educational and medical professionals, as well as be able to justify the recommended course of action.

Since Health & Science School is part of the Expeditionary Learning network of schools, our students must complete Passages presentations, also called presentations of learning exhibitions. Passage presentations are an opportunity for students to reflect on their learning and their readiness to move on to the next phase of their education, which are shared before a panel of school staff and community partners. During these presentations, share their experiences from the PLTW capstone projects and the work-based learning opportunities they completed while at Health & Science School.

1. Please provide information on **at least three partnerships** with *education institutions and groups* your program of study has, and describe how these partnerships have been built, maintained and sustained over time. Use this space to specifically address the secondary and postsecondary partners that contribute to and maintain this program of study.

|  |  |  |
| --- | --- | --- |
| Education Partnership Name | What role does this partner have in directly supporting your program of study? | How many years has this partnership been active, and how was this partnership developed? |
| PLTW | Curriculum, Professional Development, Networking, Centralized Ordering, College Credit liaison, Assessment | Eight years: Developed curriculum for POS |
| Oregon Tech | Curriculum, Professional Development, Networking, College Credit  | Eight years: PLTW affiliate university |
| Perry Initiative | Curriculum, Professional Development, Networking, Enrichment Opportunities | Seven years: Internship Coordinator |
| OHSU | Internship and field trip opportunities, guest speakers, lab supplies and oncofertility curriculum  | Seven years: Internship Coordinator |
| George Fox University | Field trip opportunities, cadaver lab usage, guest speakers | Five years: Previous experience in working with the Science Outreach |

# **ALIGNMENT WITH INDUSTRY AND BUSINESS NEEDS**

1. Describe how your program of study is aligned with the needs of the workforce and industry in your community. Make sure to include information on how the program of study helps meet workforce demand identified by business and industry. What labor market data does your program of study use to align to workforce needs? (250 word limit)

Locally, Washington County, has the second highest concentration of health related professions in the state.  Over the next ten years, both state and county projections estimate an approximate 14% increase in the demand for health-care professionals.

According to Oregonwhi.org, (2012), Washington county has

* 17% of the Oregon’s dietitians
* 16% of dental hygienists
* 16% of dentists
* 15% of certified pharmacy technicians
* 15% of occupational therapists
* 15% of physical therapists
* 14% of pharmacists
* 13% of physicians
* 13% of psychologists
* 12% of occupational therapy assistants.

Health and Science School has developed exceptional partnerships with local industry professionals to gain insight into workforce needs as well as to receive feedback about program practices. As a STEM-based curriculum,  we are giving our students the skills needed to be successful in any STEM related field, not just health science. Our locally developed Technical Skills Assessment  (TSA) was designed and is run by local Registered Nurses and other healthcare professionals. In our TSA, HS2 students demonstrate skills they have developed through a practical exam. For example, students apply proper techniques in a bloodborne pathogen clean-up scenario or demonstrate how to properly dispose of a syringe. Our community regularly participates in this event and provides critical feedback regarding current industry techniques and skills. Relationships with community partners strengthens our program of study by challenging our students to meet the needs of local workforce and industry standards.

1. Are ALL learners in the program of study required to participate in a work-based learning opportunity? Please describe the work-based learning opportunities available to learners who participate in this program of study. (250 word limit)

Yes. All students have access to work-based learning starting in ninth grade.

 OHSU Primate Center scientists serve as guest teachers, lecturers and lab assistants. Students learn about fertility preservation for cancer patients,  listen to lectures on cutting edge oncofertility research and then participate in hands-on labs related to fertility issues.

Kaiser Permanente Westside Medical Center Health Careers Learning Crew meets with professionals who work with students to explore health careers at Kaiser Permanente. For example, Orthopedic Physician Assistants and Nurses will engage students in cast making.

The Providence School Outreach program connects career seekers of all ages to health care careers through experiential learning. Their innovative and award winning program encourages students to explore the many career opportunities that exist within health care.

The Perry Initiative partners with various medical centers to host outreach opportunities for young women in high school. Participants perform mock orthopedic surgeries and conduct biomechanical engineering experiments, while also hearing from prominent female engineers and surgeons in the field.

1. Please list the industry-recognized credentials/certifications/licenses offered/required. If your program of study does not include industry-based credentials/certifications, please explain why. (200 word limit)

|  |  |
| --- | --- |
| **Offered** | **Required** |
| National Academy of Sports Medicine (NASM) Personal Training |   |
| Pharmacy Technician Certification Board (PTCB) Pharmacy Technician |   |
| American Red Cross- Emergency Medical Responder |   |
| Precision Exam: NCHSE- National Health Science Assessment | X |

Every student in our program earns their First Aid, CPR, and AED certification through Medic First Aid.  Students are also eligible and may choose to earn their credentials as Emergency Medical Responders through the Oregon Health Authority, Certified Pharmacy Technicians through the Oregon Board of Pharmacy, and Certified Personal Trainer through the National Academy of Sports Medicine. Several students have also completed a two-month long Certified Nursing Assistant program through a local community college.

1. Please provide information **at least three** *business, industry and/or labor* partnerships your program of study has, and describe how these partnerships have been built, maintained and sustained over time.

|  |  |  |
| --- | --- | --- |
| Business/Industry Name | What role does this partner have in directly supporting your program of study? | How many years has this partnership been active, and how was this partnership developed? |
| Oregon Tech | Curriculum, Professional Development, Networking, College Credit  | Six- PLTW affiliate university |
| Kaiser | Internship Opportunities, Scholarships for Students, Donation of Surplus Equipment | Five- Built a facility near our school |
| OHSU | Internship and field trip opportunities, Field trips, Internship experiences, guest speakers | Five- Internship coordinator |
| Kaiser | Internship Opportunities, Scholarships for Students, Donation of Surplus Equipment | Five- Built a facility near our school |
| Tualatin Valley Fire & Rescue | Work experience opportunities through the Tualatin Valley Explorers Program | Five- Internship Coordinator |
| Providence | Work experience opportunities through the Providence Health Careers Program | Five- Internship Coordinator |
| Edwards Center | Work experience opportunities, field trips, and employment opportunities | Three- Internship Coordinator |
| American Red Cross | Various blood-drive and volunteer opportunities | Five- Internship Coordinator |
| Bridgetown Physical Therapy | Work experience opportunities | Inaugural year- Internship Coordinator |
| Pacific University | Simulation Lab Task Force and Internship opportunities | Inaugural year- Internship Coordinator |

1. Please feel free to use the space below to share any other information or evidence of success of your program of study and the learners who participate. (Optional)

The Biomedical Studies Health Science CTE Program at Health and Science School has become a national model for other Health Science programs in Oregon.  In addition, the Health Science CTE program has been recognized as a model school within the national network of Project Lead The Way schools. Moreover, two of the three CTE teachers within the program are recognized as Master Teachers for Project Lead The Way and every teacher within the Health Science program of study was recently recognized by the Oregon Science Teachers Association as a High School Science Classroom Teacher of the Year.

Most recently, our Biomedical Studies program was recognized as one of the best Project Lead The Way programs in the country.  Out of 12,500 schools nationally, The Health & Science School Health Science CTE program was one of four recognized on the main stage during a General Session for the 2017 PLTW Summit in Orlando, Florida.  Seven of our students presented on the main stage, discussing how our project-based approach to instruction helped them overcome learning disabilities and language barriers and how it taught them relevant career-related skills.  Students also discussed the use of our motion capture system and how they used the system to analyze human movement and the predisposition of ACL injuries for female athletes. The video developed for the PLTW Summit can be viewed here: <https://vimeo.com/238652767>

In addition to the General Session, our students partnered or led five different professional workshop sessions for teachers and school administrators along with PLTW staff or master teachers.  Students shared how they contacted local legislators requesting funding for stronger CTE programs, shared the need for sheltered instruction and ELL supports in the CTE programs, and how they assisted in our program of study development through fulfilling various student leadership roles. Whenever our program of study receives new equipment, such as our VO2 machine, motion capture system, or wireless EMG system, our students are directly responsible to learn how to use and implement these educational tools into our instruction.

1. If applicable, please provide more detail on any partnerships your program of study has that have not been mentioned already. This includes community groups, non-profits, volunteer organizations, etc. Describe how these partnerships have been built, maintained and sustained over time. (Optional)

|  |  |  |
| --- | --- | --- |
| Business/Industry Name | What role does this partner have in directly supporting your program of study? | How many years has this partnership been active, and how was this partnership developed? |
| Oregon Tech | Curriculum, Professional Development, Networking, College Credit  | Seven- PLTW affiliate university |
| Kaiser | Internship Opportunities, Scholarships for Students, Donation of Surplus Equipment | Six- Built a facility near our school |
| OHSU | Internship and field trip opportunities, Field trips, Internship experiences, guest speakers | Six- Internship coordinator |
| Multicultural Integrated Kidney Education | Work experience opportunities | Inaugural year- Internship Coordinator |
| Providence | Work experience opportunities through the Providence Health Careers Program | Six- Internship Coordinator |
| Edwards Center | Work experience opportunities, field trips, and employment opportunities | Four- Internship Coordinator |
| American Red Cross | Various blood-drive and volunteer opportunities | Six- Internship Coordinator |
| Bridgetown Physical Therapy | Work experience opportunities | Inaugural year- Internship Coordinator |
| Pacific University | Simulation Lab Task Force and Internship opportunities | Inaugural year- Internship Coordinator |
| Digital Health Collaborative | Internship Opportunities, Led the Diabetes Connect A Thon Challenge Project in Spring 2018 | One year - developed through recommendations with city and school district.  |
| Pacific Personal Training | Functional Movement Screening & Motion Capture Project 2019 | Inaugural year- Internship Coordinator |

# **SUBMIT YOUR APPLICATION**

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* Fill out this application.
* Once you have finished, complete [this form](https://careertech.org/2019-excellence-action-application) and upload the following:
* Your full application saved as a Word document (.docx)
* All of your supplemental documents or evidence consolidated as one PDF document.

**THANK YOU!**

Thank you for completing this application! You will know the status of your application by January 22, 2019. The programs of study will be evaluated based on their effective leveraging of partnerships, alignment to rigorous and relevant college- and career-ready expectations, clear progression of knowledge and skills across secondary and postsecondary systems, integration of successful career guidance/advisement, and key indicators of learner success.

Don’t forget to use the Excellence in Action award submission checklist to make sure you’ve completed your application in its entirety.

We look forward to learning more about your program!

For questions, concerns please contact awards@careertech.org.