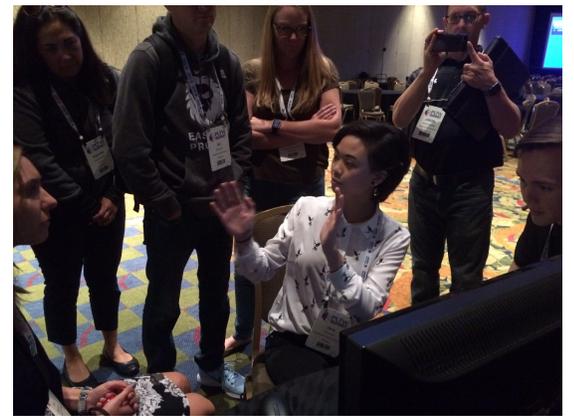


Health Science CTE Program of Study Accomplishments

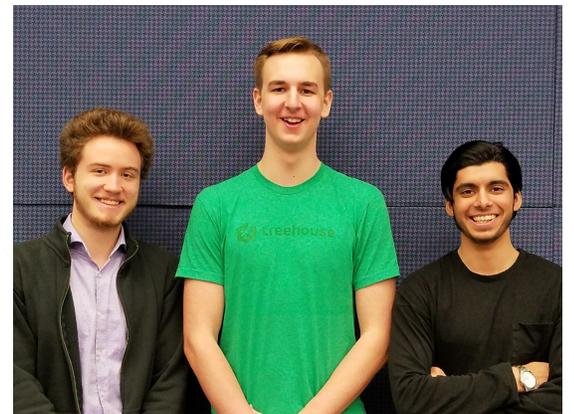
Conference Presenters

- Keynote Speakers at the National 2017 Project Lead The Way (PLTW) Summit. Health & Science School students shared how they used the motion-capture system as part of their work in integrating both the PLTW engineering and biomedical science pathways. The full video can be seen at bit.ly/HS2video and the program is currently featured on the Project Lead The Way website at bit.ly/PLTWHS2Story
- Workshop Presenters- 2017 National Project Lead The Way Summit. Health & Science School students participated and helped present at four different workshops; which included topics such as making your program of study stand out, using language supports in the CTE classroom, advocating local and state government officials, and sharing their independent biomedical independent research projects.



Student Recognition

- Three out of five CTE 2018 Presidential Scholar Nominations for Oregon, and three out of 243 nominees nationwide were from the Health & Science School Health Science CTE program of study. The U.S. Presidential Scholars in CTE program recognizes and honors up to 20 students each year
- Simeon Florea, senior at Health & Science School, testified to Oregon Education committee and Governor Kate Brown regarding the state Dual Credit Standards (2/14/18). Health & Science School currently offers more college credit opportunities than any high school in the Beaverton School District and has become a statewide model on rigorous and meaningful dual credit college opportunities.



- Four out of five state officers for Oregon HOSA: Future Health Professionals from HS2, one of eight international HOSA officers is a Health & Science alumna. HOSA provides leadership development, motivation and recognition for secondary students enrolled in Health Science Education programs and/or interested in pursuing careers in healthcare.



University & College Partnerships

- Developed Partnership with Advanced Credit Program with Oregon Institute of Technology. Students graduate from Health & Science School with up to 30 college credits in Science, Engineering & Biomedical Studies.
- Developed Partnership with High School Transition Program (HST) through Oregon Institute of Technology HST Program, which gives qualified high school students the opportunity to take college courses.



Program and Teacher Recognition

- All teachers in the Health Science CTE Program of Study were recently recognized as an Oregon High School Science Teacher of the Year. Carlie Harris and Doug Smith have taught at Health & Science School for four years. Harris teaches Principles of Biomedical Studies and Medical Interventions. Smith teaches Medical Detectives and Human Body Systems. Jeff Crapper has taught at HS2 for five years and teaches Biomedical Innovations.
- Jeff Crapper was selected as one of eight CTE educators nationwide as a 2018 ACTE Fellow. The ACTE Fellowship is a leadership development program for educators in CTE.
- Carlie Harris was selected as a one of nine national semifinalists for the HOSA Goodheart-Wilcox Outstanding Advisor Award. In addition, the Health and Science School HOSA Chapter was recognized as an Outstanding HOSA Chapter at the 2018 International Leadership Conference in Dallas, Texas.
- Doug Smith, Human Body Systems teacher, was recently featured by *Anatomy in Clay* as a Teacher in Action. The full video can be seen at bit.ly/DougSmithHS2 on the Anatomy in Clay YouTube Channel. Anatomage, creators of the virtual cadaver table also selected Smith to speak at their 2019 Anatomage Summer Conference.



Oscar's Story: Witnessing a Miracle in my Biomedical Innovation Course



Jeffrey Crapper is a biology and health science Career and Technical Education (CTE) teacher at [Health & Science High School \(HS2\)](#) in Beaverton, Oregon. Jeffrey is a National Board Certified Teacher-Early Adolescent Science and earned the honor of 2016 Oregon High School Science Teacher of the Year.

When I first met Oscar, a junior at HS2, he was an extremely disengaged,

cynical young man. He was barely on track to graduate, struggling to get Cs in his classes, and rarely participated in classroom lessons or activities. Sadly, Oscar could have easily been one of the 40 percent of Latino males that drop out of high school in Oregon. However, that all changed when he enrolled in my [Biomedical Innovation](#) class.

The self-paced, project-based focus of Biomedical Innovation encouraged Oscar to thrive. He took leadership roles in his human physiology experiment in Mission File 2, excelled in his orthopedic injury capstone presentation in Mission File 8, and then coordinated an independent research project involving our biomechanics motion-capture system, which rivals the current motion-capture system used at local universities and graduate schools in the area.

Although Oscar has decided not to pursue a career in the medical field, his appreciation and interest in photography and filming has carried over to an interest in the field of biomechanics. Oscar, on his own, met virtually with biomechanists to develop a screening protocol for female athletes and anterior cruciate ligament (ACL) injuries. His skill and interest has allowed him the opportunity to instruct other students how to use this state-of-the-art activity.

Throughout my career, I have observed the PLTW curriculum transform the lives of my students, especially my students of color and those who are economically disadvantaged. If it were not for the dynamic, highly engaging curriculum embedded into the Biomedical Innovation course, Oscar would have been less inclined to stay focused and engaged academically.

Oscar learned more than valuable academic skills – he exhibited professionalism, leadership traits, and incredible problem-solving skills daily in his various interactions with industry professionals. A year ago, I would

have never guessed that the young man who rarely moved his head off the table in class might someday be meeting and collaborating independently with biomechanists and industry vendors from across the country.

And although he has never volunteered before, Oscar completed his volunteer application at HS2 and criminal background check before even graduating, so he can return to my school and volunteer with the motion-capture project. In addition, I've seen a level of maturity that I had never observed previously in this young man. In fact, Oscar is an incredible teacher to his former peers and considers the motion-capture project part of his legacy at HS2.

The PLTW Biomedical Innovation course was the mechanism that opened up incredible opportunities for this young man. As Oscar's teacher, I was blessed to see the development of an incredible desire to learn, which previously had been missing.

Project Lead The Way's mission of empowering students to thrive might seem to many to be a lofty goal. I can attest, however, that for Oscar, our PLTW Biomedical Science courses delivered on that mission by providing the mechanism for him to finally love the art of learning, take ownership in his own education, and develop the leadership and maturity necessary to converse with industry professionals without feeling intimidated or inferior.

As his Biomedical Innovation teacher, I could not be prouder of him and his amazing accomplishments this year.

PLTW's blog is intended to serve as a forum for ideas and perspectives from across our network. The opinions expressed are those of each guest author.

Improving Student Engagement Through Kagan Cooperative Learning Groups



Jeffrey Crapper is a biology and health science Career and Technical Education (CTE) teacher at [Health & Science High School \(HS2\)](#) in Beaverton, Oregon. Jeffrey is a National Board Certified Teacher-Early Adolescent Science and earned the honor of 2016 Oregon High School Science Teacher of the Year.

Few things are more rewarding as an educator than seeing my students take

full ownership of their learning, and as a [PLTW Biomedical Science](#) instructor, my Biomedical Innovation students amaze me daily.

Initially, it was overwhelming to have a [Biomedical Innovation](#) course with nearly 40 students. Since my school is fairly small with approximately 400 students, my Biomedical Innovation classes were fairly imbalanced in size due to a scheduling conflict with a college statistics course. However, incorporating the Kagan Cooperative Learning model in my Biomedical Innovation course this year has resulted in the most significant instructional improvement as an educator.

Using the Kagan model, each student is assigned a specific role for each project. These roles include facilitator, task manager, recorder/reporter, resource manager, and spy. I randomly assign students to their groups for each module, giving students the opportunity to work in a variety of peer combinations and group roles.

In my experience, having this group structure established has become a necessity since my class periods are only 45 minutes in length and any instructional transitions simply limit the amount of class time available for my students to complete the various “missions” within the curriculum.

I have included a brief description for each role below:

- The **facilitator** helps their team get started and makes sure each person understands the task.
- The **recorder/reporter** shares the team’s results with the class, speaks to the teacher when the entire table has a question, records the group’s work on posters/projects when applicable, and makes sure team members understand what information they need to record in their notebooks.
- The **resource manager** gets necessary supplies and materials, makes

sure the team has cleaned up after each task/activity, manages the resources/materials for each lab/activity, and seeks input from each person during classwork and then calls the teacher over to ask a team question.

- The **task manager** keeps the team focused on the assignment and checks in with each group member to make sure assigned tasks are being completed.
- When the team is stuck, the **spy** can go to another team and observe their work. The spy may not talk to or touch any other team or their work/supplies, may only get up as a spy ONCE during a class period, and may not talk when observing other groups in the spy role. Once spies return to their groups, they report on what they've learned.

Having these defined roles in an [activity-, project-, problem-based \(APB\)](#) course like Biomedical Innovation has greatly increased the effectiveness of my instruction, quality of student work, and overall student engagement. It has also created a culture in which students are encouraged to discuss and solve their problems on their own as they collectively work as a group to complete each task.

The use of huddles, along with using the Kagan model, has helped tremendously as well. Instead of starting each class with up-front, entire-class discussions, my students have learned to start immediately on their task for the lesson. While students are actively working in their groups, I often request a huddle with one of the specific roles mentioned above.

For example, resource managers know it is their responsibility to gather the needed supplies for each activity or lesson. With such a large class, I simply cannot maintain and manage all the supplies necessary for the many open-ended, kinesthetic projects in my Biomedical Innovation course. Effective use of these huddles has also provided a means of sharing with students essential

information on completing their projects without inhibiting their current work production or interrupting their focus on the assigned task.

Having these systems and routines established in my Biomedical Innovation course has created a strong sense of student ownership and responsibility for all my lessons. My students continue to amaze me with their inquiry mindset and their ability to solve complex tasks with minimal instruction or intervention from their teacher. As an educator, I could not be more proud of my students as they continue to perform well academically and explore the various issues involved in the healthcare and medical fields in the 21st century.

PLTW's blog is intended to serve as a forum for ideas and perspectives from across our network. The opinions expressed are those of each guest author.



November 2, 2018

To Whom It May Concern:

Over the past decade the Beaverton Health and Science School or HS2 has created a community of students all preparing to be successful in career or college. Through a focus on inquiry based attainment of critical reading, critical writing, and critical thinking skills the team at HS2 are changing lives. HS2 has a strong focus on bio medical and engineering fields through two four year pathways and middle school grades aligned coursework. The skills for successful college graduates or successful employees are similar: digital literacy, inventiveness, communication skills, and the ability to produce results with real-world application. This is the work of HS2.

HS2 opened in 2007 and has expanded to include grades 6 to 12 and over 700 students. Even as a small school all students participate in CTE pathways with a STEM focus. When they started the school and district leadership worked hard to ensure all stakeholders were at the table. The entire community was invested in better education, a stronger economy and a brighter future for the community with HS2 as a new partner.

Washington County, Oregon is a high tech hotbed. Creating and meeting the demand for high-skill, high-paying jobs in high tech and Biomedical Science should be a state imperative – but it wasn't. With two voter lead property tax revolts Oregon school districts were cutting and retrenching not innovating. With CTE programs on the decline HS2 bucked the trend to do its part to develop a sustainable workforce with the technical skill, core academic knowledge, innovation and workplace behaviors needed to help our region succeed.

Since it's opening HS2 has been a diverse student body economically and culturally. HS2 has several indicators showing impressive student achievement, greater engagement, reduced dropout and increased college-going rates compared to similar populations. I do not have that data handy but I have seen it at community stakeholder meetings. HS2 has worked hard to partner with local post-secondary institutions to reduce the costs of postsecondary education.

The program implementation, talented staff and partners have created an great school. This track record is why community partners are deeply engaged in the schools success. Check out this video that relates to just one aspect of the internship partnerships at HS2:

<https://www.youtube.com/watch?v=86dfkZQrsA8&feature=youtu.be>

The team at HS2 are inspiring students inside the classroom and outside the classroom with multiple partnership like this one with HOSA:

https://www.youtube.com/watch?v=YFuZzaP_5vA

HS2 students are Oregon's future, we already have an older than average workforce and peak retirement in the near future. Since 2010 99% of the new family wage jobs created required post-secondary training. Not every student chooses college but they all need real-world skills that they are gaining from the CTE programs at HS2. Entrepreneurship is a requirement at



HS2. Students in Engineering or Biomedical Science pathways have a curricular objective to innovate or invent. HS2 puts an emphasis on innovation and know-how when it comes to innovation and invention, and how one might make money off of those ideas.

HS2 partners with the community to provide technical knowledge required for students to lead and innovate. Technology is essential to the pathways at HS2, because it is integral to almost every career. HS2 pathways are using technology to teach students how to use technology, solve problems, collaborate more effectively, and boost performance.

Jeff Crapper is a teacher in the Biomedical Science Pathway at HS2. He is also active in HOSA. Jeff has been supporting schools who want to emulate the success at HS2 by attending and presenting at professional conferences (often at his own expense). He also generously makes himself available to schools considering a HOSA program and those needing assistance.

The HS2 the Engineering Capstone and Biomedical Pathway Capstone classes have been combined to provide levels of excellence not only in problem solving of real-world issues, but have pollinated the ideas of Disciplines of Study often isolated until graduate school. The collaboration in and out of the classroom has brought together pathways

Industry partners recognize the quality of HS2 teaching and how students respond in the classroom. HS2 classrooms intentionally cultivate a sense of wonder, the excitement of discovery, and the satisfaction of trying hard. The self-direction and self-discipline required, as well as the learned skill of team work and trust, are sought after abilities in the work-place and have allowed his students access to internships previously only open to students in college.

The revitalization of CTE including acceptance of Dual High School to College Credit is an area Jeff and the HS2 team's work may impact every high school student in the State of Oregon. Oregon voters recently passed the first sustainable increase in CTE funding in years. The work at HS2 was often pointed to as an example for why voters should support the ballot measure.

Brian Sica, the current Principal at HS2 and his team understand that a fundamental goal is developing partnerships with business and industry to keep programs grounded in the standards students must meet to compete in the job market— and they seek guidance on what must be included in instruction in order to be successful in their careers. HS2 has active advisory committees, expansive internships, teacher externships, workplace experiences and other interaction, local employers have the opportunity to share information regarding expectations, technical requirements and workplace behavior.

HS2 is a strong school worthy of recognition because they are doing everything they can to prepare the students in our community for a prosperous future.

Ed Dennis
Government Relations Director
Project Lead The Way



CTE -- Excellence in Action Award
8484 Georgia Avenue, Suite 320
Silver Spring, MD 20910

November 1, 2018

To Whom It May Concern:

It is with great pleasure that I recommend Beaverton Health and Science High School (HS2) for the *CTE - Excellence in Action Award*. I have had the privilege of working with HS2 over the past four years to provide concurrent enrollment opportunities for their students. In this time, many teachers have champion the development and increased the rigor of their high school curriculum to meet collegiate standards for numerous courses.

When I think of outstanding programs that I have worked one common thread exists, dedication to student success. The first teacher Oregon Tech began working with at HS2 was Mr. Crapper. Mr. Crapper heads the Biomedical pathway for Project Lead the Way (PLTW) and has really worked to expand program options for students. Mr. Crapper is one of the most dedicated educators I have ever worked with. The first time I met Mr. Crapper was when multiple colleges were unable to articulate credit for his classes due to the nature of administrative rules our state has imposed on community colleges. This type of roadblock often deters teachers and subsequent programs from seeking out and expanding opportunities for their students. Mr. Crapper and HS2 didn't take "no" for an answer and sought to find an institution that could see their vision for students to see themselves as college going. His tenacity and dedication was the spring board to building a partnership that will not only impact his students, but students throughout the state.

Beaverton Health and Science High School articulated credit with Oregon Tech for the first time in the Spring of 2013. Mr. Crapper partnered with the college to impact college identity and readiness among his students. He adapted his coursework to not only meet our collegiate requirements, but to also align with the PLTW standards. Mr. Crapper sought the opportunity to not only articulate credit with his own PLTW classes, but also expanded the practice throughout his high school. Through countless meetings, phone calls, emails, and other correspondence, Mr. Crapper and HS2 Administrators worked with the college and teachers to provide college credit opportunities throughout the PLTW Biomedical pathway. Oregon Tech now partners with a number of teachers in the high school. This articulation with HS2's PLTW program led to the expansion of working with other PLTW Biomedical teachers throughout the state to offer dual credit along with the potential proficiency credit students receive through PLTW. HS2 was determined to make this a true pathway for students throughout the state and did so with persistence.

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Mr. Crapper, Ms. Harris, Mr. Smith, and Mr. Baker are all extraordinary educators who put the needs of their students first. The expansion of dual credit at HS2 has impacted the ability to guide students to post-secondary programming that fits with our state's economic needs. The teachers and HS2's program are always creating new opportunities to provide student's knowledge into the vast world of healthcare and engineering. Recently the Biomedical program has connected with the college's Humanities Department to try to provide dual credit for the emerging field of Population Health Management. In working with this program, it has become obvious that the high school keeps pushing to better align curriculum to redefine and reinvigorate the high school classroom!

Sincerely,

Carleen Drago Starr
Academic Partnership Coordinator
carleen.drago@oit.edu
503.821.1297

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November 6, 2018

Advance CTE
State Leaders Connecting Learning to Work
Re: 2018 Excellence in Action Award

I am writing to enthusiastically recommend Health and Science High School for your 2017 Excellence in Action Award.

My son graduated from Health and Science (affectionately referred to as "HS2") last year. Thanks to the committed staff and abundance of enrichment opportunities there, Josh graduated with a terrific resume and a wealth of knowledge that launched him extremely well-prepared into Portland State's Honors College. He left high school with a passion for learning, a strong work ethic, a pile of college credit thanks to HS2's expansive Dual Credit programs, and a commitment to excellence that will serve him long after he graduates from college and graduate school.

HS2's classroom experiences were terrific preparation for university level academics. Thanks to dedicated teachers like Jeff Crapper, who have worked tirelessly to create classroom and extracurricular opportunities for students, Josh's high school education included extensive biomedical and engineering coursework, much of which earned him college credit. Beyond the classroom, internship and exploration offerings with the Red Cross, Tualatin Fire and Rescue, and Kaiser Permanente gave him insight into the inner workings of fields he's interested in and allowed him to forge connections with mentors who generously shared their expertise and guidance far beyond our expectations. Through a science program offered at HS2 by Lewis & Clark College, Josh was able to spend a summer working in an OHSU lab, a fantastic internship experience doing protein folding (I have no idea what protein folding is, but he tells me that what he learned in the lab was invaluable).

Besides the academic benefits of HS2's programs, there was an immeasurable personal benefit. Students are treated as professionals inside and outside the classroom, so they learn to interact in the professional world as adults while still receiving the level of support and attention that young people need. I heard over and over again from outside agencies how mature, responsible and capable our students were during interviews and in the workplace.

For students planning careers in engineering or health sciences, the academic road is long, the demands great, and the competition stiff. Health and Science gave our son the foundation and tools to make him successful. The knowledge base he built during his high school experiences is enormous, and the support and encouragement of the adults he has met through his Health and Science experience – the school staff, teachers, and the mentors he met through HS2's enrichment programs – instilled in him confidence and fearlessness in the pursuit of knowledge and greater understanding of the world he lives in. We could not have asked for a finer learning experience for our son than the one he received from Health and Science and its dedicated and talented staff, and that is why I recommend without reservation Health and Science High School for your 2017 Excellence in Action award.

Thank you!

Alica Martwick
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Martwick4@gmail.com



Inspiring youth to create technology solutions for diabetes care

May 17, 2018 Franny White [Community](#)



Connectathon Challenge: Diabetes



Jaqueline Hernandez Perez (left) and Litz Rachell Ramos Cisneros work together on the Connectathon Challenge: Diabetes project, a learning experience organized by Digital Health Collaborative. Thirty-three Beaverton students participated in the activity. (Photo courtesy Digital Health Collaborative)

From ensuring their continuous glucose monitor and insulin pump are working to disregarding well-intentioned advice from strangers about what to eat, daily living can be a challenge for those with diabetes.

This is something **Brianna Morales**, an OHSU research assistant, knows well. She's among [9.4 percent of the U.S.](#) that lives with diabetes. That's why she eagerly agreed to help Beaverton teenagers develop new technologies for people with the disease.



Brianna Morales

Thirty-three students are participating in the Connectathon Challenge: Diabetes, a hands-on learning experience organized by the [Digital Health Collaborative](#). The collaborative aims to make Beaverton, Oregon, and surrounding communities a hub for digital health technology development and commercial activity. It's also a collaboration between the Beaverton School District, City of Beaverton and the private biotech industry.

"These kids' minds are so incredible," Morales said. "If we can encourage them to use technology to better a life and help those living with diabetes, then I'm a big supporter."

Morales was among a handful of OHSU health care professionals who initially met with the students in mid-March. Other OHSU clinicians present that day include **Farahnaz Joarder, M.D.**, and **Joseph El Youssef, M.D.**, who organized an expert panel to explain what diabetes is, how it is treated and share what it's like to live with the disease.



Joseph El Youssef, M.D.



Farahnaz Joarder, M.D.

The students, all of whom attend Beaverton's Health and Science School, were divided into six teams. Each team was given a box of supplies – including a tablet, health monitor watch, glucose monitoring patch and cloud development tools. Next, they met with physicians, patients and technology leaders to brainstorm ways to turn those supplies into solutions that help people living with diabetes.

Seeing the students' enthusiasm, Morales twice returned to these weekly tech jam sessions. She's particularly excited about one team's idea: a social networking app to help patients connect with others living with diabetes.



Teams of students were given a box of supplies – including a tablet, health monitor watch, glucose monitoring patch and cloud development tools. Next, they met with physicians, patients and technology leaders to brainstorm ways to turn those supplies into solutions that help people living with diabetes. (Photo courtesy Digital Health Collaborative)

Joarder, who treats young adults with Type 1 diabetes, also sees the Connectathon as a way to help patients.

"One group is making a decorated glucose meter, which could make a patient's day-to-day routine more cheerful and pleasant," Joarder said. "That small touch can encourage patients to be more involved in their own care, and ultimately be healthier."

Dennis McNannay, a co-founder of the Digital Health Collaborative and chief executive officer of health technology company Curadite, hopes the learning experience will show students there are innovation opportunities in Oregon and encourage them to consider careers in health technology.

The public can learn more from 5:30 to 7 p.m. on Thursday, May 17, when all six student teams will present their product ideas. The student showcase will happen at the Arts & Communication Magnet Academy, 11375 S.W. Center St., Beaverton. Given the venue's small space, attendees are asked to confirm ahead of time [online](#).

Franny White
Senior Media Relations Specialist
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Health and Science School 'leads the way'

Teacher Jeffrey Crapper and his students will present at a STEM conference in Florida.



Inside a storage area attached to Jeffrey Crapper's biology and health classroom at Beaverton Health and Science School, Mazin Ashfaq waits for his computer software to load.

The software is for the school's motion-sensing cameras, which can track and code human movements, and provide data for projects as diverse as helping athletes recover and creating lifelike video games.

Ashfaq, a senior at Beaverton Health and Science School (also known as

HS2), studies the screen as his classmate Jane Hang waves a wand with camera-attracting markers at the end of it. The markers will help the computer identify the space it should be mapping.



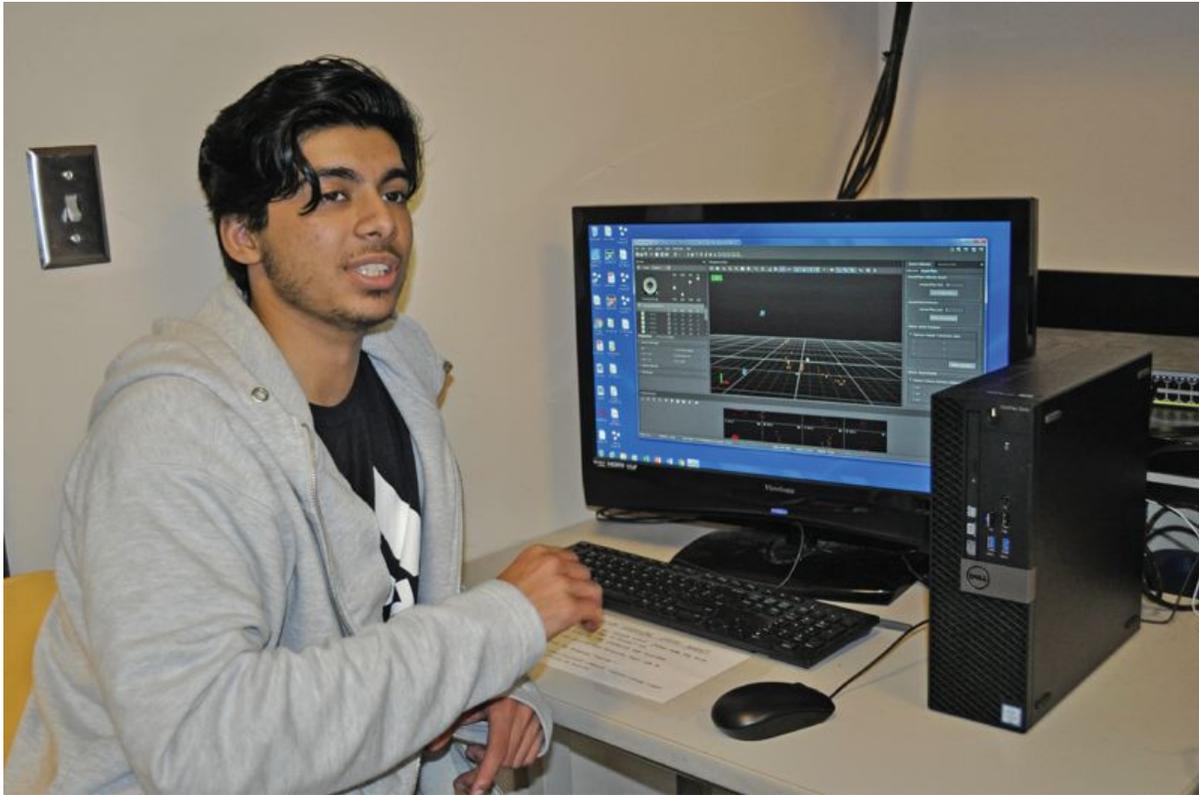
Once Hang's job is complete, fellow senior Jennifer Meier jumps in, wearing a motion-capture suit with markers on it. Onscreen, the computer uses the markers to find and map Meier's form.

This informal presentation is happening in a storage area — but later this month, HS2 students and Crapper will show it onstage at the PLTW Summit in Orlando, Fla.

"Onstage, I'll be in the motion-capture suit," Meier said. "I'll be doing box jumps on that thing" — she points a stool — "and I know if you do certain movements in the suit, Mr. Crapper was telling me, it can tell if you're more prone to ACL tears. So it can really help athletes."

PLTW, which stands for Project Lead the Way, is a national non-profit that provides interactive curriculum for STEM (science, technology, engineering and math) projects in K-12 schools. HS2 has offered PLTW programs since 2008, and has since received official certification from the organization. The school now offers three different PLTW tracks: biomedical, engineering and

computer science.



From Oct. 22 through Oct. 25, PLTW will hold its annual summit, where leaders in STEM education will meet to share ideas and present their findings. Crapper will take part in several presentations, and his students will help operate the motion-sensor cameras in one of them.

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"They're going to demonstrate all the things we can do with these cameras," said Ashfaq. "With these cameras, you can show how an injury happens, and if someone gets tackled, what happens to their body, things like that."

Students at HS2 first got to use the cameras and software late last year, meaning this year's group of seniors are the first class to master them. Ashfaq, who will attend Oregon Institute of Technology next year and hopes to be a surgeon one day, said that the quality of education at HS2 has improved as the school incorporates more PLTW curriculum and state-of-the-art technology into its classrooms.

"The PLTW exposes you to a lot of different fields," he said. "In a class you'll see, all the students are really involved. The teacher isn't talking nonstop."

His classmate Hang agreed.

"They worked really, really hard to bring this program to light," said Hang, who is in both the biomedical and engineering track, and plans to be a pediatrician. "And through Mr. Crapper, we got all these nice things."

When they aren't busy preparing and presenting, Crapper's students will take advantage of their time at the PLTW summit by networking.

"Once we get to the summit, we want to show everyone what a state-of-the-art program this is, and make things better for those that come after us," Hang said.

They'll also take a little time to enjoy themselves: "I think we were talking about Disney World or Universal Studios," Meier said.



Blair Stenvick

Reporter

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Examining Access and Achievement Gaps

This brief, the second in a series focused on equity in Career Technical Education (CTE), lays out a strategy for state and local policymakers to confront historical inequities by using data to examine and address gaps. It examines promising strategies from states that are using data to better understand where and how learners are being under-served, identify root causes and disrupt historical inequities.

Using Data to Identify and Resolve Inequities in CTE

State leaders can use data as a tool to understand the effects of historical inequities and arm local leaders to mitigate their impact. Data, when disaggregated to unmask differences in enrollment and performance, can be a powerful tool to diagnose problems, navigate course corrections and evaluate progress and impact. Yet there are some real challenges and limitations to CTE data. Historically, CTE data have been collected by separate, non-longitudinal data systems (with secondary and postsecondary CTE data often collected separately), relied on a mix of sound and self-reported information, and had limited distribution among stakeholders and the public. Such archaic systems limit the impact and usefulness of CTE data.

Some states, however, have invested in robust, linked data systems that allow for a closer examination of learner outcomes. In these states, policymakers have leveraged their data systems to identify and address the inequities in their own communities, working to close equity gaps by:

- Leveraging accountability to draw attention to inequities;
- Committing to data transparency; and
- Examining root causes of achievement and access gaps.

Accountability as a Lever to Highlight Equity Gaps

Accountability can be a powerful lever for promoting equity. What gets measured matters, and holding schools and institutions accountable for career readiness signals to local leaders that each and every learner should be able to access high-quality CTE programs of study and experience work-based learning, credentialing and instructional opportunities that will prepare them for success in the real world. Valuing career preparation in state and federal accountability systems also ensures that local and state leaders collect the data they need to identify access gaps in CTE programs of study and are empowered to act on this information to close gaps.

However, accountability and public reporting systems must be designed to effectively provide local leaders and community members with actionable information, as well as equip them with the skills to

Supporting English Learners in a Biomedical Science Program of Study

Beaverton, Oregon

Health & Science School in Beaverton, OR, an Excellence in Action award finalist, uses the Project Lead the Way curriculum in its Biomedical Science program of study.¹¹ Learners exercise hands-on, team-oriented skills and explore topics such as human medicine, physiology, genetics, microbiology and public health.

The high school is an options school, meaning it is one of six lottery-based admissions schools in the district that provide specialty education. As such, school leaders work actively to recruit a population of students that is representative of the district population. The school is 54 percent non-white, 53 percent economically disadvantaged, 33 percent English learners, and 10 percent students with disabilities.

Staff at Health & Science School use data to promote equity and deliver resources and supports to each student based on need, particularly focusing on the school's large English learner population. An equity team at the Beaverton School District provides professional development and resources to help school-based staff understand their student data. They look at graduation rates, postsecondary success, technical skill attainment and more for each student sub-group and pair this information with teacher testimony and qualitative survey data.

This information helps staff at Health & Science School work in partnership with district leaders to make programmatic changes to better serve students in need of additional supports. As a result, Health & Science School has modified teaching practices, developed resources, and embedded support staff in the classroom to allow for full inclusion of English learners.

suggest that these students do not have equitable access to that program. This analysis is facilitated by dynamic dashboards, similar to those used in Maryland, which allow DDOE staff to quickly drill down to the district, institution and program levels to closely examine student data.

When inequities are identified, a structured protocol is set into action. DDOE uses a partnership approach to performance management, opting for a collaborative conversation with school-based staff. DDOE staff provide district leaders with data reports, which illuminate specific gaps in enrollment and performance. They then co-construct a series of questions for study and conduct interviews with teachers, students and parents to identify gaps and models of support. Student and parent opinions carry the most weight in this process, ensuring that the voices of those being served are elevated.

Once the interviews are completed, DDOE and district staff debrief about the conversation and collectively develop a report summarizing the findings of the study. The report includes commendations, recommendations, compliance issues, and next steps for closing equity gaps. The report also highlights opportunities for local leaders to co-invest with the state in trainings, tool development and other interventions to support under-enrolled and under-performing students. Although local sites are not required to act on DDOE's recommendations, many recognize the need and seize the opportunity for additional state support. In this way, DDOE serves as a partner in equity,

“ As a senior in high school, I've been going around looking at all these different colleges, and walking through the biology departments, and I will be with my parents and I will look up at the walls and see all these posters about their human physiology experiments. I can look at my parents and point up there and whisper to them, **'I can do that. I've done that before.'** ”

- *Ben Moreno, PLTW Biomedical Science Student*
Health & Science High School | Beaverton, Oregon



The Digital Health Collaborative, Beaverton School District, and City of Beaverton invite BSD staff to attend the **Connectathon Challenge: Diabetes Student Showcase on Thursday, March 17, 2018 from 5:00 – 7:00 p.m.** at the Arts & Communication Magnet Academy (ACMA) Performing Arts Center, 11375 SW Center, St., Beaverton.

Students at Health & Science School (HS2) are participating in the Digital Health Collaborative's inaugural Connectathon Challenge: Diabetes. The Connectathon is all about finding real solutions in the real world. It is designed to engage students with a hands-on learning experience that combines health, science, and technology. Students are being challenged to design innovative solutions and ideas to improve the lives of people living with diabetes.



To whom it may concern:

Kaiser Westside Medical Center has had the privilege of working closely with Health and Science School since 2013. We collaborate on an internship program called the Health Career Learning Crew (HCLC). This program designed to help students learn about various health care careers. For eight sessions over the course of the school year, we arrange different speakers to discuss their career and lead a hands on activity. It is part of Kaiser Permanente's efforts to improve community health by encouraging students, especially those from diverse and/or economically disadvantaged backgrounds, to pursue postsecondary education and join the healthcare workforce.

The HCLC program at Kaiser Westside Medical Center (KWMC) is run in partnership with Health and Science School (HS2) in the Beaverton School District. HS2 serves students in grades 6 through 12 from a variety of diverse backgrounds and focuses on preparing students for college success.

This partnership has been extremely rewarding and successful. The success is made possible by the devoted and committed leaders at HS2 who consistently impress us with their efforts on their student's behalf.

We couldn't ask for better partners and enjoy being able to help the future of young leaders together.

Don't hesitate to reach out to me if needed.

Sincerely,

Adam Haslam

A handwritten signature in black ink that reads "Adam Haslam".

Building Manager
Kaiser Westside Medical Center
2875 NW Stucki Ave.
Hillsboro, OR 97124