

**SEATTLE PUBLIC SCHOOLS  
Career & Technical Education  
ANNUAL BOARD REPORT**

**Including: SPS Skills Center**

**2013 - 2014**

**Mary Davison, CTE Program Manager**

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## CAREER and TECHNICAL EDUCATION

### Definition

Career and Technical Education (CTE) is a planned program of courses and learning experiences that begins with exploration of career options, supports academic and life skills, and enables achievement of high academic standards, leadership development, and preparation for career and college.

### Mission

The Career and Technical Education Department broadens career choices for students, supports and promotes quality instruction, and ensures that every secondary school has a range of CTE offerings for every student, including skill center options.

### Vision

Career and Technical Education: Where all students imagine, design, and craft their future.

### Central CTE Staff

Manager ..... Mary Davison

Administrative Assistant ..... Mark Daniels

Fiscal.....Wendy Turner

#### Specialists:

Robert Austin .....Agriculture, Arts, Media, Science & Engineering

Michelle Chaney..... Business, Marketing, & Information Technology

Patsy Ethridge-Neal - .3 Part-time..... State and Federal Reporting

Myrna Muto — .6 shared with College & Career Director..... Career & Guidance Services

Joanne Patrick .....Academies

Cathi Rodgveller - .5 part-time ..... Non-traditional Counseling

Roxanne Trees..... Health & Human Services, and Family & Consumer Science

### Additional Seattle Public School Skills Center CTE Staff

Principal .....Shani Watkins

Registrar - .8 Part-time..... Deanna Gallichan

## ASSESSMENT OF CTE PROGRAM

Career and Technical Education (CTE) in Seattle Public Schools continues to offer students some of the finest CTE experiences in the nation. We have organized CTE around the following areas with Specialists to support current programs, research new programs and initiatives, and work with industry partners for advice in keeping our programs current and what industry is telling us it needs for now and in the future:

- **Arts, Communications, and Media**
- **Business, Marketing, Information Technology and Computer Science**
- **Environmental Science and Agriculture**
- **Health & Human Services, and Family & Consumer Science**
- **Science, Engineering, and Industry<sup>1</sup>**

We have very strong programs in most pathways, and are moving to a Program of Study model for all course offerings.<sup>2</sup> Programs of Study<sup>3</sup> are detailed guides for students, mapping out specific course options for a chosen career path from high school through postsecondary education. Programs of Study show how to smoothly transition into postsecondary education from high school CTE.

### Program and Teacher Quality

As we continue to offer our students some of the finest Career and Technical Education experiences in the nation, our research indicates we are delivering in ways that are aligned to industry standards and best practices. The 2011, [Pathways to Prosperity<sup>4</sup>](#) report from the Harvard School of Education cited Career Academies and Project-Lead-the Way (PLTW) engineering programs as best practices and bellwethers of quality. Seattle Public Schools is one of the only Washington school districts to sustain Career Academies and we have done so since 1987. We were the first district in Washington State to implement [Project Lead the Way](#) (PLTW). Other high-quality, award-winning, and high-profile programs include: C89.5 our radio station at Nathan Hale; Film/Video at Ballard; *ProStart* culinary at Rainier Beach, Ingraham, Roosevelt, and West Seattle; Project Lead the Way (PLTW) Biomedical, and Engineering at Cleveland; Photography at Garfield; Automotive Tech at Ingraham, West Seattle, and City Campus; Marketing at Ballard, Garfield, Hale, Roosevelt, and West Seattle, and the Graduation, Reality And Dual-Role Skills (GRADS) Teen Parent Program at South Lake; Microsoft IT Academy at Sealth and Ingraham; and Video at Ballard, Center School, Cleveland, Hale, and Franklin; and Biotech at Ballard. We are using the Microsoft sponsored TEALS (Technology Education and Literacy in Schools) program for computer science at Ballard, Franklin, Hale, and Rainier Beach, and have been able to hire highly qualified computer science teachers at Cleveland, Garfield, and Roosevelt and sustain our International Baccalaureate computer science program at

<sup>1</sup> See Appendix #1 – Career Clusters Pathways – Course Offerings, Pages 16-18

<sup>2</sup> See Appendix 1 - Career Clusters™- Pathways – Course Offerings – Pages 16-18

<sup>3</sup> <http://www.k12.wa.us/CareerTechEd/ProgramsofStudy.aspx>

<sup>4</sup> [http://www.gse.harvard.edu/news\\_events/features/2011/Pathways\\_to\\_Prosperty\\_Feb2011.pdf](http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperty_Feb2011.pdf)

Ingraham. We are planning an agreement with [code.org](http://code.org) for additional computer science offerings in middle and high schools, and professional development opportunities for computer science teachers. Seattle's CTE teachers and staff win recognition and awards and are consistent leaders at regional, state, and national levels. Students who concentrate their studies in CTE, which is taking four semesters in a program area, go to college at a greater rate, and complete their programs more often than other students who do not as evidenced in research from the National Academy Foundation and the Work Force Training Board of Washington State.<sup>5</sup>

Because of OSPI requirements and best practices for CTE, courses are up for reapprovals on a four-year cycle. Courses have been rewritten incorporating 21<sup>st</sup> Century Skill indicators, and the Common Core Standards for English Language Arts and Mathematics that apply to the course content. All of the Family and Consumer Science and Health and Human Services courses were rewritten and approved in 2013. The Business, Marketing, Information Technology including Computer Science, and Applied Math are due for reapproval in early 2014 for Seattle Public School courses. Skills Center courses due for reapproval in 2014 are: Fire Science, and Aerospace Science and Engineering.

### **Current Skills Center Initiatives**

Launching the Seattle Public Schools Skills Center has been a major focus and consumed much time and energy over the last three years. Programs have been proposed; locations sought; skill panels designed by industry partners; facilities provided support; courses and frameworks were written and approved for OSPI and Seattle Public School course catalogs; instructors were hired; school partners approved locations and sites; and programs are actually up and running. Skill Center programs are half-day programs for students over 16. Students attend their assigned high school and then travel to the Skill Center for 2½ hour sessions of their school day. This can occur during the regular school day or after the regular school day. The following are current Seattle Skills Center programs:

- Academy of Interactive Entertainment (AIE) Animation and Gaming – Armory at the Seattle Center - 2 sessions
- Aerospace Science and Engineering – Rainier Beach – 1 session
- Culinary Arts – Rainier Beach – 1 session
- Fire Science – Franklin – 1 session
- IT CISCO Networking – Rainier Beach – 1 session
- Medical Careers – West Seattle – 2 sessions
- Medical Services – Wilson Pacific – 2 sessions

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<sup>5</sup> <http://www.wtb.wa.gov/Documents/CTESuccess.pdf>

Planning for next year is taking place and these are the additional programs that we are planning to offer:

- Multimedia Broadcasting – KNHC, Nathan Hale – 1 session
- Microsoft Technology Associate (MTA) – Ingraham – 1 session
- Maritime Science and Engineering – Ballard – 1 session
- Auto – Shop behind Washington Middle School – 2 sessions

### Enrollment and Staffing

High School and Middle School CTE have seen increases in offerings of Computer Science, Engineering, Material Science, *Pro Start* Food Production, Visual Communication, AP Psychology, and Microsoft IT Academy courses. Our overall trends are increasing from 10.8% in 2010-11 to 11.19% in 2011-2012 to 11.99% in 2013-14 of all high school teachers. We added 7 additional CTE sections in middle schools. We hired an excellent Skills Center Principal in Shani Watkins. She is managing day-to-day operations, promoting the programs, and driving future initiatives of the Skills Center. There were no program cuts in the 2013-2014 school-year. Because of reductions in the Carl Perkins grant we had to reduce our non-traditional counselor to half time. We were able to hire a new Skills Center principal full-time and a new CTE specialist for Business/Marketing/IT to replace the position left vacant when Mary Davison took the CTE Manager position. We were able to increase our Skills Center registrar from a .6 to a .8 position to handle more students and the City Campus data issues.

We were able to offer a Skills Center Summer School Program for the first time in the summer of 2013. These programs are open to rising 9<sup>th</sup> graders through 12<sup>th</sup> graders and are funded by OSPI as if a student was in a regular Skills Center program. We offered five subjects last summer and plan to double that in summer 2014.

### CTE Full-time Equivalent (FTE) Student Numbers are Averaging:

YEAR	FTE HS	FTE MS	SKILLS CTR	TOTAL FTE
2007-2008	1582.84	60.54		1643.38
2008-2009	1538.43	73.63		1612.06
2009-2010	1501.63	18.37		1520
2010-2011	1464.49	26.78		1491.27
2011-2012	1464.99	50.67		1515.66
2012-2013	1485.54	72.41	50.5	1608.45
2013-2014	1556.49	102.55	65.27	1724.31

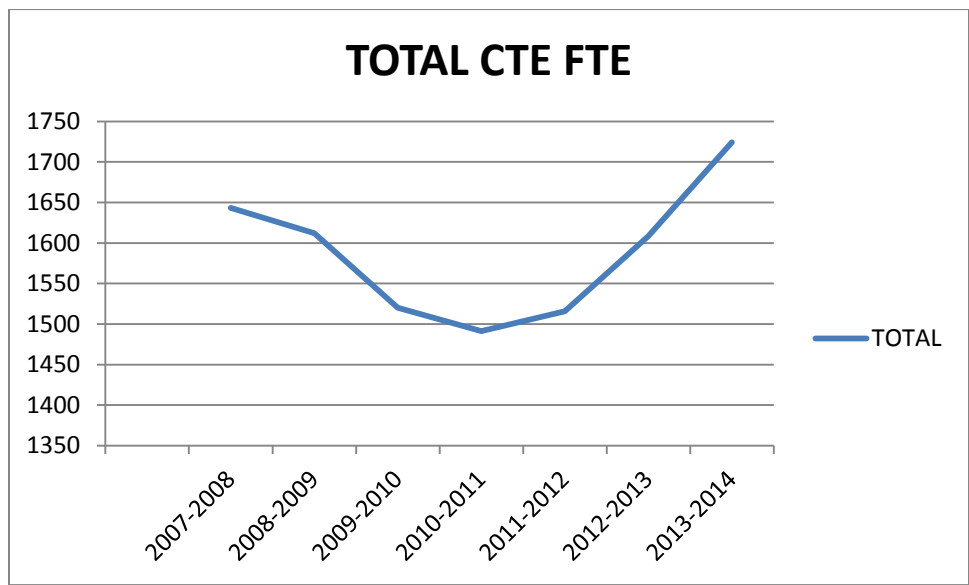
While CTE FTE totals are increasing, compared to total High School and Middle School enrollment, the increases are slight as shown in the following table:

**ENROLLMENT AS A PERCENT OF TOTAL ENROLLMENT IN HS and MS**

Year	CTE/HS	CTE/MS
2007-2008	12.25%	0.98%
2008-2009	12.17%	1.20%
2009-2010	11.97%	0.30%
2010-2011	11.66%	0.43%
2011-2012	11.51%	0.78%
2012-2013	11.47%	1.08%
2013-2014	11.99%	1.49%

Our Skills Center enrollment has increased a little over 29% this year and we were able to add three additional programs: Culinary Arts, Fire Science, and Medical Assisting.

**CTE FTE Total is charted from 2007-2014:**



In comparison to the above numbers, in 2000-2001, CTE averaged a high of 1767 FTE.

For the 2012-2013 school-year staffing there was a 1.3 FTE in cuts, and 3.4 in additions plus the 2.0 Skill Center positions. For 2013-2014 there were no reductions in staffing. Additions in 2013-2014, were an additional 2.0 Skills Center positions, which included updating and converting Medical Assisting from a City Campus program; and half-time positions in Culinary Arts, and Fire Science. Other additions were in middle schools specifically: three classes of computer science at Broadview Thomson, an additional video offering at McClure, and additional classes in technology education at McClure and Washington Middle School.

Seattle Public Schools Skills Center FTE Average is 65.27 up from 50.50 last school year. We are enrolling additional students for second semester, February 2014, which will stabilize enrollment over the school year.

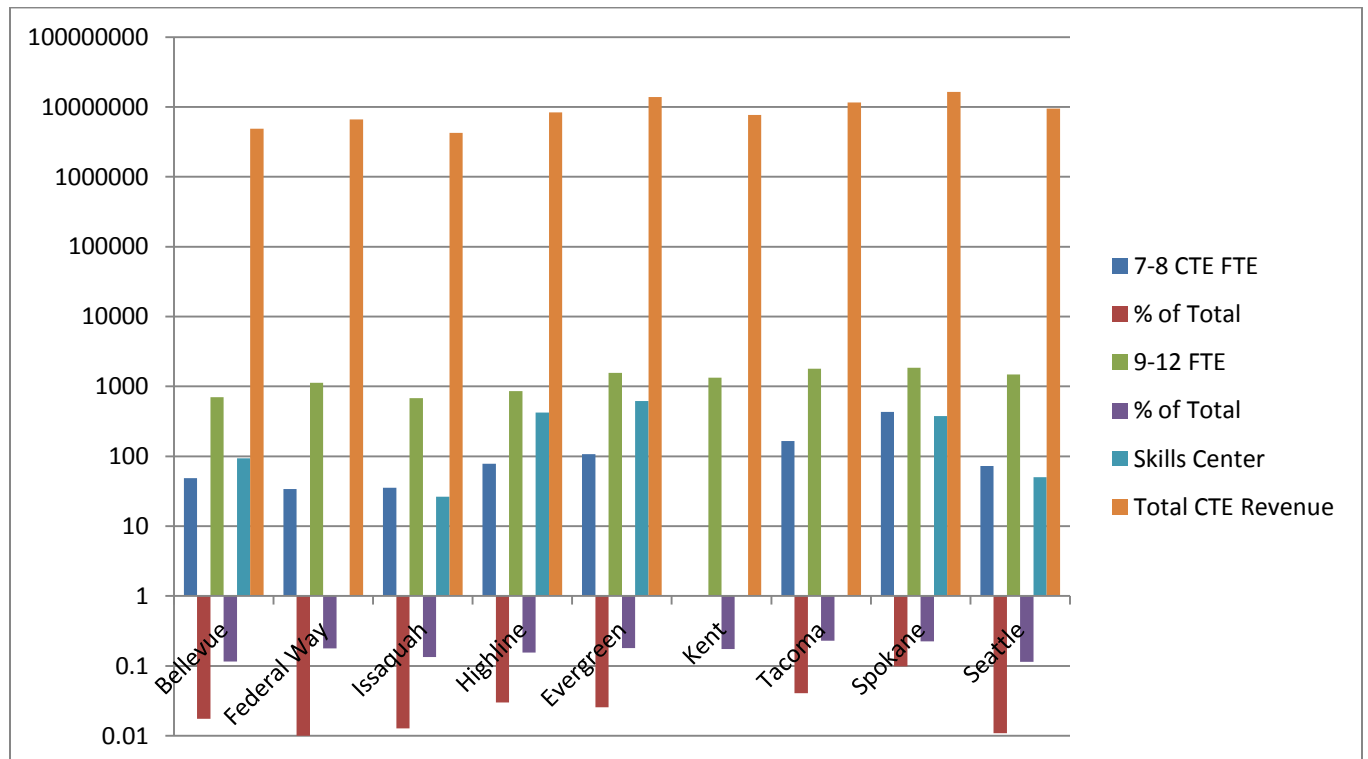
### Student FTE Comparison with other large Washington State Districts

Districts were chosen for comparison based on proximity to Seattle and their reputations for quality educational experiences for their students as well as the largest districts in the state.

#### DATA for 2012-2013 SCHOOL YEAR

All Data for 2012-2013 School Year						
District	7-8 CTE FTE	% of Total	9-12 FTE	% of Total	Skills Center	Total CTE Revenue
Bellevue	48.47	1.75%	698.09	11.55%	94.02	\$4,866,490.19
Federal Way	33.88	1.00%	1125.71	17.77%	0	\$6,613,837.92
Issaquah	35.56	1.28%	680.16	13.37%	26.34	\$4,256,475.88
Highline	78.33	3.01%	857.87	15.50%	424.27	\$8,328,362.72
Evergreen	107.15	2.55%	1559.2	18.08%	615.76	\$13,879,299.62
Spokane	431.8	9.92%	1855.48	22.57%	375.23	\$16,361,161.22
Tacoma	165.34	4.09%	1796.59	23.03%	0	\$11,524,850.62
Seattle	72.41	1.09%	1485.54	11.48%	50.5	\$9,468,359.79

#### DATA COMPARISON by DISTRICT for the 2012-2013 SCHOOL YEAR





## STRENGTHS AND QUALITY INDICATORS

When principals are asked about exemplar programs or have outside visitors to the schools, you will often see that they point out their Career and Technical Education (CTE) programs and that these CTE programs are a point of pride for the school and community. Recent media articles that come to mind are Biotech, Maritime, and Project Lead the Way at Ballard, Mobile Apps at Rainier Beach, Culinary Arts at West Seattle, Construction and apprenticeship at Chief Sealth, Radio at Nathan Hale, and Video at Ballard. Our strengths and quality indicators are characterized by:

### Strengths

- Strong programs in each of the pathways<sup>6</sup>
- Curriculum, instruction, and assessment aligned with standards
- Teachers who are leaders in instruction and in their schools
- The SPS Skills Center startup, running, and addition of programs
- Consolidated Program Review (CPR) OSPI Audit for CTE was completed in March 2013. There were no findings for CTE - suggestion for proportionally more CTE classes compared with other large districts
- Advanced Placement programs up and running in each pathway except Agriculture
- Tech Prep Articulations – dual credit with the Seattle Community Colleges are up and running and gaining strength
- Academies that are long-lived and strong<sup>7</sup>
- Community engagement and strong advisory boards<sup>8</sup>
- Clear and Shared Focus
- High Standards and Expectations – new frameworks (program standards) on 4 year cycle for review and approval, common core standards and 21<sup>st</sup> Century Skills incorporated into all frameworks with specific objectives
- Learning environments that focus on meeting industry and program design standards
- High levels of communication and collaboration

### Quality Indicators

- Middle School offerings in Career and Technical Education starting to gain steam
- Monitoring of teaching/learning and professional development provided
- IGNITE – Inspiring Girls Now in Technology Evolution offers girls and now boys, opportunities to job shadow, find mentors, and connect with companies that represent

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<sup>6</sup> See Appendix #2 – Exemplars in Each Pathway – Page 19

<sup>7</sup> See Appendix #3- Academies – Page 20

<sup>8</sup> See Appendix #4 – Advisory Boards – Pages 21-26

- Students qualifying and winning state and national Career and Technical Student Organizations (CTSO) awards and state and national awards in particular fields such as computer science, family and consumer sciences, and video, non-traditional fields especially in the Science, Technology, Engineering, and Math (STEM) areas.

## **Community Engagement**

Advisory boards are required for all program areas in CTE through our standards and by OSPI. We are very fortunate to have community and industry partners participating on our strong advisory boards for each of our program areas.<sup>9</sup> Advisory boards and pathway specialists meet between three and nine times each school year to review, evaluate, and discuss current and planned programs. The advisory board members and other volunteers serve roles as speakers, judges for Career and Technical Education Student Organizations (CTSOs), and informal advisors. These community partners allow us to keep our programs current with industry requirements and standards, and also, know about and take advantage of numerous opportunities for our students and staff.

## **CHALLENGES**

Our challenges focus on three main areas: access for all students, sustainability of programs, and funding. These challenges represent areas that need to be negotiated with high school and middle school administration especially around sustainability and new program placement, and with central office staff around priorities. Among those items needing focused attention are:

- Scheduling conflicts – each high school has different schedules which makes it harder to enroll Skills Center students
- Impact of additional math and reading support classes on elective programs making it difficult for students to enroll in Skills Center programs and additional CTE courses
- Perception challenge to see CTE as a core part of program of study for all students
- Equity and accessibility of course offerings across district
- Sustainability of programs that are expensive to operate such as auto, woods, and video
- Locating space for Skills Center programs in the North End
- Finding funding for certification exams for students to earn industry certifications
- Funding for Tech Prep initiative – the Carl Perkins federal grant still college credit articulations with community colleges as a requirement but funding dissolved at end of 2010-2011 school year
- Students may fulfill Occupational Education (Oc Ed) graduation requirement with non-CTE courses and there are a large percentage of students that do not take any CTE course in their high school program and fulfill the graduation requirement through non-CTE Oc Ed.

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<sup>9</sup> See Appendix #4 – Advisory Boards – Pages 21-26

## OPPORTUNITIES

### Expanding and Strengthening CTE Programs

There are many initiatives and programs we are researching and examining to expand and strengthen our offerings especially in the Green Technology, and Science, Technology, and Engineering (STEM) fields. Our Skills Center Aerospace Engineering Core + program was initiated and developed by our advisory boards because of industry need and advisory board interest. We were named as one of 19 programs in the state for our Aerospace Engineering Skills Center program using the Core + model. Maritime Science and Engineering Skills Center program slated for the start of 2014 school year will also adopt the Core + model. Most of our new programs are currently involved in Skills Centers but we are also looking at all program areas for opportunities and meeting with other CTE Directors in King County and the state to find best practices for our students. We are initiating an agreement with [code.org](http://code.org) that will include professional development for teachers and result in additional computer science offerings in the middle and high schools.

### Career Clusters

[Career Clusters](#)<sup>™</sup> are an organizing tool for curriculum design and instruction. They provide students with relevant contexts for studying and learning and are organized nationally into 16 areas that support over 79 distinct career pathways. In Seattle Public Schools (SPS), we've organized and consolidated these 16 areas into 15 pathways with 3 Specialists, that link coursework with the knowledge and skills required for success in the workplace, career exploration, and for preparation for college and career. They also function as a guide in developing programs of study (POS) bridging secondary and postsecondary curriculum, and for aiding students in development of their high school and beyond plans. CTE helps students discover their interests, their passions, and empowers them to choose a pathway that will aid their success in high school, college, and a career.

In Seattle Public Schools, as previously mentioned, we consolidate these 15 pathways into 5 areas:

- **Arts, Communications, and Media**
- **Business, Marketing, Information Technology and Computer Science**
- **Environmental Science and Agriculture**
- **Health & Human Services, and Family & Consumer Science**
- **Science, Engineering, and Industry<sup>10</sup>**

These 5 areas are overseen by three Specialists and give us a focus for how to organize new initiatives and assess our strengths and gaps.

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<sup>10</sup> See Appendix #1 – Career Clusters Pathways – Course Offerings, Pages 16-18

## STEM – CTE Programs

We have many strong course and program offerings in the STEM areas including our offerings at the Skills Center: Aerospace Science and Engineering, Medical Careers, and Medical Assisting, Animation and Gaming, and Cisco/IT Academy. The Project Lead the Way (PLTW) Biomedical at Cleveland, and PLTW Engineering at Cleveland, Ballard, Franklin, Garfield, and Roosevelt. Other STEM courses include: Woods, C-West Construction and Apprenticeship, BioTech, Computer Science at seven high schools, and Middle-School STEM courses in computer science, technology, video, and PLTW Gateways to Engineering. [ACE](#) (Architecture, Construction, and Engineering) Mentors is an additional STEM after school program open to all Seattle Public School high school students. The mission of ACE is to engage, excite and enlighten high school students to pursue careers in architecture, engineering and construction through mentoring. We currently have about 66 students taking advantage of this opportunity CTE teachers are also the mentors for most of the First Robotics teams in the schools as after school activities.

We are continually investigating new programs and integrated models of delivery in the STEM areas and consider this an area to look to for CTE growth.

## CROSS-CREDIT, DUAL CREDIT, and INDUSTRY CERTIFICATION OPPORTUNITIES

The CTE Department participates in extensive interdisciplinary collaboration, in particular with science, math, and visual performing arts. Cross-crediting of CTE courses with core academics continues, and entails a rigorous application process that has been piloted this year between CTE and visual performing arts. Most Skills Center courses are cross-credited with either third-year math, lab science, or visual arts. We continue to pursue Advanced Placement (AP) and International Baccalaureate (IB) CTE courses and currently have courses in Computer Science, Psychology, Arts Portfolio, Economics, and IB Business Management.

### Third-year math options

Financial Algebra and Applied Math options are approved to fulfill the third-year math graduation requirement if they are part of a student's high-school and beyond plan.

### Double Credit – Dual Credit – Tech Prep

There are new state initiatives for meeting two graduation requirements with one course – called double credit:

[WAC 180-51-067](#) provides for students' ability to check off two graduation requirements, so called – **double credit** – for CTE courses starting with the graduating class of 2015 – 2016 (current 9<sup>th</sup> and 10<sup>th</sup> graders). The language is as follows:

- a) Students who earn a graduation requirement credit through a CTE course locally determined to be equivalent to a non-CTE course will not be required to earn a second credit in the non-CTE course subject; the single CTE course meets two graduation requirements.

Students can now earn **dual credit** with the Seattle Community Colleges through Tech Prep. This is dual credit for a college and a high school course much like Running Start but students and the FTE stays in the schools. Because the funding for Tech Prep was eliminated from the 2010-2011 Carl Perkins Grant, we made a decision to partner with the Seattle Community Colleges and CTE pays for half the funding for the Seattle Community College work-force liaison to continue this initiative.<sup>11</sup> Students in CTE programs in Seattle Public Schools earned a total of 2422 credits through the three Seattle Community Colleges for the 2012-2013 school year. This translates to a savings for families of \$258766.50 at the current cost of \$106.84 a credit at the Seattle Community Colleges. A list of our current Tech Prep courses can be found with a link from the SPS CTE page or at: <http://www.techprepseattle.org/>. We are currently working on additional courses for second semester and next year and will have those articulated sometime in March with the Community College and SPS CTE teachers.

### UNDUPLICATED TRANSCRIBED STUDENT COUNTS

Year	Registered Students	Transcribed Students	Percent Completed	Credits Earned
2012-2013	1,175	849	72.26%	2,422.00
2011-2013	1,074	853	79.42%	3,456.50

Our numbers were down slightly because of the perception that we hadn't been able to keep the program going and there are some classes that the community colleges deemed not available for Tech Prep.

We have also been able to initiate the University of Washington College in the High School (UW in HS) model for computer science at Cleveland, Garfield, and Roosevelt. Students at these schools can choose to pay for credit through the University of Washington's partnership with the high school teachers.

### Industry Certification

Students have the option to earn Industry Certifications in most of our programs and pathways. We are investigating making the testing in all areas more available to students that it has been in the past. The state is also investigating making certifications available in many areas at a no or low cost (\$2.50 per test). We have testing available now in the following classes:

<sup>11</sup> <http://www.techprepseattle.org/downloads/Master%20list%20articulations%202012.pdf> – Tech Prep

<b>Courses</b>	<b>Certification/State/National Recognition</b>
ACE and C-West	Direct entry in Apprenticeships
AIE Animation & Gaming	Direct entry into AIE Technical College
American Sign Language (ASL)	Transfer credit with Seattle Community Colleges
AP Art	AP 2-D and AP 3-D
AP Economics	AP Economics at Garfield
AP Psychology	AP Psychology
Automotive	Automotive YES –ASE exit exam
Cisco 1-4	CCNA
Computer Science	AP Computer Science and UW in the High School
Human Development; Child/Parenting	First Aid/CPR/Merit Certification for Learning
IB Psychology	IB Psychology
IT Essentials	A+ and Net+
Marketing	National Professional Certification in Customer Service
Medical Careers in Skills Center	NAC – Certified Nurse Assistant, HIPPA, First Aid/CPR
Microsoft Office Specialist	MOS Core; MOS Expert
NAF Academies	End of Course Exams
Project Lead the Way	End of Course Exams
<i>Pro Start</i> Food Production	Certificate of Recognition and Achievement

## **SKILLS CENTER**

Along with schools, industry partners, and advisors, CTE has been working with our new Skills Center instructors and programs to make sure they are as strong as our regular CTE course offerings. Locating facilities north of the ship canal has been our major challenge. Our goal is to determine offerings that afford access and equity across the district for all interested students. Planning for future expansion includes program quality, industry projection needs now and in the future, and facility availability.

### **City Campus**

Our City Campus programs were originally designed before Seattle Public Schools was approved for Skills Center programs, they are based on a Skills Center model of delivery in that students

attend for half of their school day. The SPS City Campus programs have strong support and we are investigating moving their standards and directions to Skills Center programs to reflect their outcomes and take advantage of enhanced funding. This year, we were able to make this change with Medical Assisting, and are looking for a north end location to relocate to in 2014-2015 when Wilson Pacific is repurposed at the end of this school year. The instructor at our Automotive program located behind Washington Middle School will be gaining a certification that he needs to move the program to a Skills Center model for the 2014-2015 school year. We will investigate Auto Body next year as a Skills Center model for the 2015-16 school year. Our C-West apprenticeship program at Rainier Beach, and the XIP program, that we operate cooperatively with Special Education, will remain as City Campus programs.

## CONCLUSION

A strong JSCEE CTE staff works to ensure quality instruction occurs in CTE courses across the District. The CTE program is committed to keeping course offerings and programs up-to-date with cutting edge practices, approaches and content. The successful launch of our SPS Skills Center and our work to engage our communities is second to none. These commitments highlight CTE's strengths in Seattle Public Schools. Equitable access for all students, sustainability of program offerings, and funding for current and future programs are challenges that we are addressing. Other challenges for the Skills Center are the disparate schedules of each high school, facilities with room in the north end of the city, and the demands for increased graduation requirements. By working with the opportunities we are creating and the new partnerships we are forging, some of these challenges can be addressed. Growth areas are in middle school STEM offerings, cross-crediting initiatives, and a renewed focus on CTE in the district. As in the [Pathways to Prosperity](#) report from the Harvard School of Education, and United States Secretary of Education, Arne Duncan affirming CTE as a delivery model for college and career readiness<sup>12</sup>, we are feeling renewed energy for CTE initiatives, courses, and programs in Seattle Public Schools.

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<sup>12</sup> <http://www.ctat.org/news-and-events/news/secretary-arne-duncan-affirms-cte-in-response-to-harvard-report/>

## Appendix #1 – Career Clusters™- Pathways – Course Offerings

Each Career Cluster™ represents a distinct grouping of occupations and industries based on the knowledge and skills they require. The 16 Career Clusters™ and related Career Pathways provide an important organizing tool for schools to develop more effective programs of study (POS) and curriculum.

- **Agriculture, Food & Natural Resources**

*The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.*

**Offerings in SPS: Horticulture, Food Science, Nutrition and Wellness, Environmental Science**

- **Architecture & Construction**

*Careers in designing, planning, managing, building and maintaining the built environment.*

**Courses in SPS: Woods, C-West and opportunity for an ACE Mentor**

- **Arts, A/V Technology & Communications**

*Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.*

**Courses in SPS: Video, Radio, Multimedia, Graphic Design, Yearbook, Animation, Photography, Technical Theatre**

- **Business Management & Administration**

*Careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.*

**Courses in SPS: Introduction to Business, Project Management, IB Business Management, AP Economics**

- **Education & Training**

*Planning, managing and providing education and training services, and related learning support services such as administration, teaching/training, administrative support, and professional support services.*

**Currently no courses in SPS**

- **Finance**

*Planning and related services for financial and investment planning, banking, insurance, and business financial management.*

**Courses in SPS: Academy of Finance Program, Accounting**



- **Government & Public Administration**

*Planning and executing government functions at the local, state and federal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.*

**Currently no courses in SPS**

- **Health Science**

*Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.*

**PLTW Bio Medical, Medical Assisting, Medical Careers, Family Health, Sports Medicine, Nutrition and Wellness**

- **Hospitality & Tourism**

*Preparing individuals for employment in career pathways that relate to families and human needs such as restaurant and food/beverage services, lodging, travel and tourism, recreation, amusement and attractions.*

**Courses in SPS: Academy of Hospitality and Tourism Program**

- **Human Services**

*Preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.*

**Courses in SPS: IB Psychology, AP Psychology, Teen Grads Program**

- **Information Technology**

*Building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.*

**Courses in SPS: Cisco Networking, Microsoft IT Academy, Computer Applications, Web Design, Computer Science, Phone Application Programming, AP Computer Science, UW in the High School Computer Science, Middle School Computer Science, Skills Center Animation & Game Programming**

- **Law, Public Safety, Corrections & Security**

*Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.*

**Courses in SPS: Fire Science**

- **Manufacturing**

*Planning, managing and performing the processing of materials into intermediate or final*

*products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.*

**Courses in SPS: Skills Center Aerospace, Auto, Auto Body, C-West, Metals**

- **Marketing**

*Planning, managing, and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing communications and market research.*

**Courses in SPS: Marketing 1-4, Store, Advertising**

- **Science, Technology, Engineering & Mathematics**

*Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.*

**Courses in SPS: PLTW Engineering, Applied Math, CAD, Computer Science, Aerospace Engineering, Marine Science, Financial Algebra**

- **Transportation, Distribution & Logistics**

*The planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.*

**Courses in SPS: Maritime Academy Program, Auto**

## **Appendix #2 – Exemplars in Each Pathway**

### **Arts, Communications, and Media**

**Video Program at Ballard**

**KNHC Radio Station at Hale**

**Animation and Game Programming in Skills Center at AIE**

**Technical Theatre at Roosevelt**

### **Business, Marketing, Information Technology and Computer Science**

**Academy of Finance Programs at Chief Sealth, Franklin, and Ballard**

**Academy of Hospitality and Tourism at Chief Sealth**

**AP Computer Science at Rainier Beach, Cleveland, Hale, Roosevelt, & Garfield**

**Marketing at Ballard, Hale, Garfield, Roosevelt, and West Seattle**

**Skills Center Cisco Networking Academy at Rainier Beach**

### **Environmental Science and Agriculture**

**Biotech at Ballard**

### **Health & Human Services, and Family & Consumer Science**

**GRADS Program at South Lake**

**IB Psychology at Ingraham**

**AP Psychology at Roosevelt**

**Award winning Family & Consumer Sciences Programs across district**

**PLTW Biomedical at Cleveland**

**Medical Careers at Interagency**

**Skills Center Medical Assisting at West Seattle**

### **Science, Engineering, and Industry**

**PLTW Engineering across district**

**City Campus Auto Tech**

**Skills Center Aerospace/Aviation at Rainier Beach**

## SEATTLE PUBLIC SCHOOLS ACADEMIES

### National Academy Foundation (NAF)

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NAF Academies are in 490 schools, 41 states and the District of Columbia plus the US Virgin Islands. The NAF Academies established in 1982; have been a part of Seattle Public Schools since 1987.

- [Academy of Finance](#)
- [Academy of Hospitality & Tourism](#)

### Career Academies

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- [Ballard Maritime Academy](#)
- [Biotechnology Academy at Ballard](#)
- [CREATE Academy at Franklin](#)
- [John Stanford Public Service Academy at Franklin](#)

### Cleveland High School STEM Career Academies

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[Cleveland STEM](#) stands for Science, Technology, Engineering and Mathematics, fields that are the underpinnings of modern life. The STEM Program at Cleveland High School will give students the opportunity for rigorous and advanced study in these subjects. The two academies that students can choose from are:

- [School of Life Sciences](#) which includes PLTW Biomedical
- [Engineering and Design](#) which includes Computer Science and PLTW Engineering

### Seattle Academies Foundation

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The Mission ~

The Seattle Academies Foundation ~ Academy of Finance, Academy of Hospitality and Tourism, and Academy of Information Technology promotes academic excellence and provides real-world experiences in a Finance, Hospitality and Tourism, and Information Technology environment and provides personal involvement with local business and industry leaders for qualified high school students.

The SAF Focus Statement ~

Our children are worthy of our Investment!

## Appendix #4 – CTE Advisory Boards

### Career and Technical Education Advisory Committees

Career and Technical Education (CTE) advisory committees advise, assist and provide support and advocacy for quality CTE programs. Advisory committee volunteers have the opportunity to learn more about the CTE program, and the instructor's are able to increase their understanding of the job market, employers' needs and community opportunities. Advisory boards are required for all CTE programs in the CTE standards through OSPI.

<http://www.k12.wa.us/CareerTechEd/Forms/AdvisoryBrochure.pdf>

#### GENERAL ADVISORY COUNCIL AND SKILLS CENTER ADVISORY BOARD

##### SKILLS CENTER & GAC MEMBERS LIST

First	Last	Company
Jay	Abram	Professional Solutions for Personal Computers
Robert	Austin	Career & Tech Ed Dept, SPS
Bridgett	Bascomb	Seattle City Light
Peter	Cavanaugh	Workforce Development Council of Seattle -King County
John	Lederer	North Seattle Community College
Mary	Davison Ethrige-	CTE Program Manager
Patsy	Neal	Seattle Public Schools
Renée	Florio	SSCC, CTE Teacher Cert Prep Program
Taylor	Gaussoin	Media Design & Production
David	Gering	Manufacturing Industrial Council (MIC)
Alfred	Griswold	Seattle Central Community College
Melda	Hickman	Port of Seattle
John	Hughes	SPS, School & Community Partnerships
Darren	Linker	Dept of Environmental Health and Safety, UW
Gary	Fasso	PNW Regional Council of Carpenters
Karen	Mattson	WSECU Community Relations
Mike	McBee	IUOE Local 609
Annika	Mertz	Seattle Central Community College
Andrea	Samuels	Seattle Community Colleges
Kathleen	Moriarty	Port of Seattle
Myrna	Muto	Career & Tech Ed
Myra	Myra	Seattle Community College District
Jim	Nicholson	Oppenheimer & Co Inc.
Joanne	Patrick	Career & Tech Ed, SPS
Mickey	Pierce	Community Activist - Contract – Microsoft
Lindsay	Pulsifer	Port of Seattle
Will	Rance	WSECU
Michael	Ryan	South Seattle Community College
Shepherd	Siegel	Project Lead the Way
Gary	Stauffer	Youth Maritime Association (YMTA)

Neal	Storme	Music Production
Michael	Tolley	Seattle Public Schools
Roxanne	Trees	Career & Tech Ed, SPS
Dana	Twight	Twight Financial Education, LLC

### **BALLARD BIOTECH ADVISORY**

Distribution List Name: Biotech Steering Committee

Members:

Bob Visenor	<a href="mailto:BobV@sabarch.com">BobV@sabarch.com</a>
Bruce Busby	<a href="mailto:bbusby@fhcrc.org">bbusby@fhcrc.org</a>
David Warren	<a href="mailto:warren@atmos.washington.edu">warren@atmos.washington.edu</a>
Lynn Onstad	<a href="mailto:lonstad@fhcrc.org">lonstad@fhcrc.org</a>
Randy Howard	<a href="mailto:rhoward@idri.org">rhoward@idri.org</a>
Reitha Weeks	<a href="mailto:rweeks@nwabr.org">rweeks@nwabr.org</a>
Rick Ridgway	<a href="mailto:rridgway@spu.edu">rridgway@spu.edu</a>
Tracy Wrey	<a href="mailto:correlations@earthlink.net">correlations@earthlink.net</a>
Victoria Sangrey	<a href="mailto:Victoria.Sangrey@bms.com">Victoria.Sangrey@bms.com</a>

### **BALLARD MARITIME ADVISORY BOARD**

Active participation – meetings monthly – can provide names if requested

### **BUSINESS/MARKETING/IT Advisory Board**

Andrew Davidson	UW
Benton Melbourne	Web Design & Voice Overs
Dartanyon Race	Independent Business Owner
Helene Martin	UW
Joni Blakeslee	Cisco Systems
Kelly Boodell	FAA
Kevin Wang	Microsoft
Margaux Eng	Amazon
Pete Mazza	Financial Planner
Gabriella Smith	Boeing

FAMILY & CONSUMER SCIENCE and HEALTH & HUMAN SERVICES ADVISORY BOARD

Meet five times per year

<b>Advisory Board Member</b>	<b>Representing Industry/ Group</b>
Crickmore, Suzi *	Northwest AED/ American Heart Ass'n.
Marsha Brown	South Seattle Community College
Annika Merz	Seattle Community College - Tech Prep
Trez Buckland	University of WA – Dept. of Nursing/ Health
Bob Tidwell	Education Volunteer
Aileen Gagney	American Lung Association
Nancy Bush	Seattle University; BA programs
Joanne Card	Hearthstone – Executive Chef
Darren Linker	University of WA – Environmental Health
Victoria Wentz	Education Consultant
Adrianna Tossini	WA Dept. of Voc Rehabilitation

SCIENCE, ENGINEERING, & INDUSTRY ADVISORY

Project Lead the Way Advisory

**2012-13 NATIONAL ACADEMY FOUNDATION BUSINESS & COMMUNITY PARTNERS**

Note: Members prefer their company names be used instead of person names but personal names could be provided. Meetings are monthly – September through June with a Summer fundraiser

**Academy of Finance**

**Academy of Hospitality and Tourism**

- Absolutely Northwest
- Argosy Cruises
- Boeing
- Bolt Bus
- buuteeq, Inc
- Career Path Services
- Central Washington University
- Cognizant
- Conover Capital Management
- Courtyard by Marriott Downtown Seattle Lake Union
- Deloitte & Touche LLP
- Donna Longwell & Associates
- Eagle Strategies/ New York Life
- Highline Community College
- Holland America
- Holland America Princess
- ITT-Technical Everett
- Johnson Scannell & Associates

**Ballard, Chief Sealth International & Franklin High Schools**

**Chief Sealth International High School**

K 12 DigiPen Institute of Technology  
K&L Gates  
Key Bank  
KMPG  
Marsh  
Microsoft  
Morse Best Innovation  
North Seattle Community College  
Office of the Insurance Commissioner  
Oppenheimer & Co, Inc  
Parametric  
Pineapple Hospitality  
Polar Marine, LLC  
Professional Claim & Loss Consulting  
RBC Wealth Management  
Roche's Travel  
Russell Investments  
Seattle University – Albers School of Business & Economics  
Sellen Construction  
The Janus Group LLC  
Vulcan  
Washington State Convention Center  
Washington State Housing Finance Commission



## KNHC – RADIO ADVISORY

<b>Name</b>	<b>Title</b>
Charlie Nordstrom	Owner, Recording Studio
Dan Magden	Remote Engineer, KOMO
David Shield	Engineer, Solar Energy Systems
Don Iverson	Principal Engineer, Coffman Engineering
Gregg Neilson	General Manager, KNHC
Jai Jaisimha	VP of Development, AOL
Jamie Hammond	Television Executive Producer
Jill Hudson	
Lisa Hechtman	Principal, Nathan Hale
Jim McKenna	Owner, McKenna Gottlieb
Mary Davison	CTE Director, SPS
Michael Dever	Supply Analyst, Boeing
Myron Partman	TV/Film freelance producer
Shani Watkins	Director, SPS Skill Center
Shepherd Siegel	Director, Project Lead the Way School Engagement
Simon Thwaites	Station Supervisor, KNHC
Stacy Walters	Vandeberg,Johnson&Gandara
Susan Harmon	Public Radio Capital, Emitus
Vince Lerner	Radio Voicework Personality
Mary Davison	CTE Program Manager

## HORTICULTURE ADVISORY BOARD

Cyle Eldred	O’Laughlin Shows, NW Flower and Garden Show
Terri Benson	Little Creek Nursery
India Carlson	Ballard CTE
Jessica Torvik	Hale CTE
Maggie Rose	Ingraham CTE

Leif Herald           XIP Landscaping/Horticulture  
Robert Austin       SPS CTE

IGNITE – Inspiring Girls Now in Technology Evolution Advisory Board

Roger Myers- Aerojet  
Lynn Kepl- Microsoft  
Jeanne Knutzen- Pace Staffing Network  
Mary Jane Pioli- MJ Pioli and Company  
Lisa Sandoval- Seattle Central Community College  
Manisha Patel- Microsoft  
Erika Harnett- University of Washington  
Shigeko Calos-Nakano - Clarity Health Services  
Harini Gurusami- Nokia

## TERMS and LINKS

ACE Mentors	Architecture, Construction, and Engineering Mentors – Open district wide
AOF	Academy of Finance – Franklin, Ballard, and Chief Sealth part of the NAF Academies
AOHT	Academy of Hospitality and Tourism – Chief Sealth
CPR	Consolidated Program Review – Audits that OSPI conducts
CREATE	Construction Related, Engineering, Architectural, Technical Experience - Franklin
CTE	Career and Technical Education
CTSO	Career and Technical Student Organizations. These include DECA, FBLA, TSA, Skills USA, HOSA, and FCCLA. Please refer to CTE SPS website for explanations of each.
FTE	Full-time Equivalent – can be used for explanation of teacher workload or student enrollment
<a href="#">GRADS</a>	Graduation, Reality And Dual-Role Skills (GRADS) are programs for pregnant teens and/or young parents that focus on work and family foundation skills of significance to these students. GRADS programs include student demonstration of skills leading to high school graduation and economic independence.
IGNITE	Inspiring Girls Now in Technology Evolution – one of our Nontraditional programs
<a href="#">NAF</a>	National Academy Foundation
<a href="#">Non-Trad</a>	Nontraditional occupations – occupations that employ 25% or less of one sex
OSPI	Office of Superintendent of Public Instruction
<a href="#">PLTW</a>	Project Lead the Way
<a href="#">POS</a>	Programs of Study are detailed guides for students, mapping out specific course options for a chosen career path from high school through postsecondary education.
STEM	Science, Technology, Engineering, and Math