

2010



Map of Washington Manufacturing Assets

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Background

At the invitation of the National Association of Manufacturers (NAM) and the Manufacturing Institute (MI), the Washington State Board for Community & Technical Colleges (SBCTC) developed a proposal for the advancement of NAM Endorsed Manufacturing Skills Certification System (NEMSCS) as the standard for community and technical college manufacturing programs and training provided throughout the state. To get a complete understanding of NAM's certification system and each of its components, visit the webpages below.

- An overview of the NAM certification system <http://www.manufacturingskills.org/>
 - This webpage will provide a clear understanding of how all the certificates will integrate to warrant a high-value manufacturing staff
- National Career Readiness Certificate (<http://www.act.org/certificate/>)
 - This credential indicates that the holder has sufficient basic education skills and work readiness skills to be effective in entry level positions and is ready to benefit from additional training.
- National Institute of Metalwork certificates <https://www.nims-skills.org/web/nims/6>
 - These 52 credentials are awarded based on both written and performance tests that certify the individual's competence in various types of metal work.
- American Welding Society certificates <http://www.aws.org/w/a/certification/index.html>
 - These 18 certificates assure that welders, inspectors and others in the welding industry are competent.
- Manufacturing Skills Standards Council <http://www.msscusa.org/>
 - These two certificates for production and logistics ensure that workers in these two critical elements of manufacturing will be assets to their company.
- Society of Manufacturing Engineers <http://www.sme.org/cgi-bin/getsmepeg.pl?cert/certification.html&&SME&>
 - These four certificates demonstrate competency as a technologist or engineer as well as three levels of competency in *Lean* manufacturing and *Six Sigma*.

The proposal included a phased implementation that began with Shoreline Community College, as the designated college pilot site, and expanded to include all 34 community and technical colleges throughout the state. Further, it involved obtaining the endorsement and support of the state's manufacturing employers, workforce and economic development partners, community based organizations and other appropriate stakeholders. Additionally, recruitment was targeted to low-income adults and youth in an effort to encourage NEMSCS credentialed training in manufacturing careers.

Though this proposal was not funded, in early December 2009, the State Board for Community and Technical Colleges contracted with the Manufacturing Institute to produce an asset map to assist the Institute in its efforts to deploy the NAM-Endorsed Manufacturing Skills Certification System across selected individual states.

The asset map is designed to identify the programs, resources and organizations that would be necessary to support state-wide deployment of the certification system. As part of the mapping process, SBCTC agreed to provide information on how each asset identified could contribute to state-wide deployment and how the policies and resources of those assets currently align with the certification system.

This report is designed to be interactive. Many of the assets are detailed in hyperlinks throughout the document. As a result, the reader will be required to visit webpages and other reports provided through the links.

Simultaneous to the development of the statewide asset map, Shoreline Community College was funded to deploy part of the NAM certification system on a local level. Shoreline has become a NIMS certified center by fully imbedding the NIMS standards in its computer numeric control (CNC) curriculum. It has also implemented the National Career Readiness Certificate at the college.

Methodology

Upon execution of the contract, SBCTC identified key staff to provide oversight and day-to-day operation of the project.

To accomplish the objectives of the contract, principle staff conducted numerous hours of research, interviews and discussions throughout the state to capture information and responses to the questions asked by the Institute. In an effort to gather community and technical college specific information, the project was presented to the Workforce Education Council (WEC) during its February 2010 meeting. The WEC is comprised of the Workforce Education Directors/Deans and the Vice Presidents of Instruction of each of the 34 community and technical colleges located throughout the state. This Council is critical to the deployment of any statewide initiative involving workforce education in Washington.

In addition to discussions with Shoreline Community College regarding their simultaneous local deployment activities, SBCTC participated in conversations with key stakeholders and participated in the March 1, 2010 meeting of the Manufacturing Council. (*see Appendix A*)

As part of its research activities, SBCTC developed an online survey tool in order to capture current information and responses to the template questions provided by the Institute.

Finally, principle staff conducted extensive research on assets identified in the survey, from other information sources, and through the statewide presentations and discussions mentioned above.

Survey Results

As mentioned previously, SBCTC developed an online survey to capture responses to the template questions provided by the Institute. The survey tool asked the Institute's template questions and sub-questions.

The survey was sent to each of the 34 community and technical college system Workforce Education directors, 27 Tech Prep directors, 25 apprenticeship directors and several private colleges and community based organizations who are funded by the SBCTC to offer manufacturing programs. The survey may be accessed at the following location:

Survey Location: <https://www.surveymonkey.com/s/GBGKJV7>

Survey Name: NAM Endorsed Manufacturing Skills Certification System.

Key Findings

Throughout the text of this document, survey results are reported in response to Institute template questions, however, it revealed the key findings as summarized below.

The survey revealed limited familiarity with the certifications that make up the NAM-Endorsed Manufacturing Skills Certification System:

- 19% of the respondents reported using one of the American Welding Society (AWS) certificates
- 11% of the respondents reported using one of the National Institute for Metalworking Skills (NIMS)
- 2% of the respondents reporting using the National Career Readiness Certificate (NCRC)
- 68% of the respondents reported that they were not using any of the NEMCSC certificates

Regarding the *National Career Readiness Certificate*, the two respondents above emphasized the critical nature of buy-in by the business or industry. If students seek the college's training and its graduates are being hired, colleges do

not see any benefit adopting the certificate. One respondent commented that the materials were “expensive and ineffective” for his program.

Regarding the two *Manufacturing Skill Standards Council certificates*, the response emphasized the key role that business support of the certificate plays in whether an educator will decide to embed a certificate into their training.

In response to a question on the use of the *52 National Institute of Metalworking Skills certificates*, respondents identified the importance of

- the reasonable costs of the credentials,
- buy-in by the business or industry,
- collegial recommendation and
- how well the certificate complements the existing training curriculum as factors influencing decisions to offer the certificate.

Data was garbled regarding the *18 American Welding Society certificates*, because the question was not correctly framed in the survey. A number of the respondents reported using the AWS certificates.

Finally, when asked what factors had the greatest impact on their decision not to offer the certificates, respondents identified the top four as:

- lack of business buy-in,
- poor fit between the certificate and the current curriculum,
- no information about the certificates or the certificate system, and
- Students are not aware, interested or supportive.

When asked about *other (non-NAM endorsed) manufacturing industry certificates* utilized by the respondents, 51.9% identified the following (listed in order of frequency):

- The Washington State Building Officials’ welding (tests) certificate
<http://www.wabo.org/uploads/Welder/Weld%20Agency%20List%203-18-10.pdf>
- The Department of Energy Wastewater Treatment certificate
http://www.ecy.wa.gov/programs/wq/wastewater/op_cert/index.html
- The National Industrial Lubrication certificate <http://www.upnec.com/trainingprog.html>
- Materials Science certificate (multiple college certificate programs)
- CNC Machining, CNC Machinist Helper and CNC Welding certificates. (multiple college certificate programs)

Responses to NAM’s Manufacturing Institute Template Questions

1. What programs of study specific to manufacturing already exists at community and technical colleges throughout the state?

The SBCTC Workforce Development Team created a *Professional-Technical Program Matrix* that identifies more than 50 manufacturing programs of study located throughout the state. The *Matrix* can be found posted online (<http://www.sbctc.ctc.edu/college/e-workforceproftechprograms.aspx>) a copy of the *Matrix* with NEMSCS-related programs marked can be found as ***Appendix B***.

The *Matrix* feeds information into the *Career Bridge* (<http://www.careerbridge.wa.gov>) website which is designed to help Washingtonians find training and funding that will lead to family wage jobs. *Career Bridge* identifies all of the

colleges in the state who have been identified as eligible training providers for a particular program. In addition, it includes a report card on program graduate outcomes. The *Career Bridge* resides on the Washington State Workforce Education and Training Board (WTECB) and serves as the state's *Eligible Training Provider list* for purposes of the federally-funded employment and training programs.

14 manufacturing-related IBEST projects have been funded. IBEST is a kind of compressed education where basic skills and the professional technical skills are team-taught simultaneously allowing the students to become job-ready much faster than the traditional sequenced approach. (*see Appendix C*)

Many of the Washington State community and technical colleges have professional/technical programs that could include NAM's Endorsed Manufacturing Skills Certificate System.

For example, Spokane Falls Community College has a Transportation and Logistics program which terminates in either a certificate or an Associates of Applied Science (AAS-T) degree, depending on the needs of the student. <http://www.spokanefalls.edu/TechProf/Management/Transportation.aspx> This program could make use of the Manufacturing Skills Standards Council (MSSC) certificates in Logistics and Production. The MSSC certificates were a part of a Department of Labor grant that Spokane Community College submitted which was not funded that could be reconsidered for implementation given sufficient, predictable funding.

SBCTC has a broad range of associates degrees designed especially for those in the applied sciences <http://www.sbctc.edu/college/e-transferassocinappliedsci.aspx>, or science and engineering <http://www.sbctc.edu/college/e-transferassocinascience.aspx> which is another asset since it provides incentive for additional performance certification.

2. What types of programs currently serve as education pathways for manufacturing?

The majority of survey respondents (82%) recognized educational pathways in manufacturing beginning at the high school level. SBCTC's research identified the majority as being located along the I-5 corridor in western Washington. Pathways were identified in the following western Washington locations (Links to all community and technical colleges can be found at the SBCTC webpage at <http://www.sbctc.edu/>):

- Bellingham Technical College
- Clover Park Technical College
- Edmonds Community College
- Green River Community College
- Lake Washington Technical College
- Lower Columbia College
- Olympic College
- Renton Technical College
- South Puget Sound Community College

In eastern Washington, manufacturing pathways were identified in the following colleges:

- Big Bend Community College
- Walla Walla Community College
- Yakima Valley Community College

Washington has several types of programs that could serve as education pathways for careers in manufacturing. These include:

- Career Academies http://www.mdrc.org/project_29_1.html
- 2+2 programs This refers to programs like Tech Prep where 2 years in high school are linked to two years at a community or technical college. It is also used to refer to other kinds of transitional programs like a 2-year college to 4-year college linked program.
- Skills USA <http://www.skillsusa.org/about/factsheet.shtml>
- First Robotics <http://www.skillsusa.org/about/factsheet.shtml>
- YouthBuild http://www.youthbuild.org/site/c.htIRI3PIKoG/b.1223923/k.C7D6/About_Us.htm
- Project Lead the Way <http://beta.pltw.org/educators-administrators/our-programs>
- Washington Aerospace Scholars <http://www.museumofflight.org/washingtonaerospacescholars>

Career Academies related specifically to manufacturing were identified at Bellingham Technical College, Renton Technical College and Lower Columbia College.

2+2 Programs specifically related to manufacturing were identified at Yakima Valley Community College, Olympic College, Renton Technical College, Clover Park Technical College, Walla Walla Community College and Big Bend Community College.

Skills USA has a strong presence in Washington. Of the survey respondents, 80% reported that their students were involved in Skills USA while they attended high school. Unfortunately, student participation data for Skills USA is unavailable.

First Robotics appears to be a growing presence in Washington as 30% of survey respondents indicated their student's involvement during high school. According to First Robotics, 2,500 Washington state students have participated in the program and logged a total of 300,000 hours in supervised science, technology, engineering and mathematics (STEM) activities.

YouthBuild schools were identified as operating in Seattle at the Interagency YouthBuild School and in Olympia at the New Market Skills Center.

Both South Seattle Community College and Seattle University were identified as participating in *Project Lead the Way* (PLTW). While no student data was available for PLTW in Washington State, 225,000 students participated nationally around engineering in 2000 high school and 700 middle schools and 58 Washington State middle schools were listed on the PLTW school database webpage http://beta.pltw.org/getting-started/school_locator

The *Washington Aerospace Scholars* program is operated in the south Seattle area at the Museum of Flight. This program is modeled after a successful NASA-sponsored program in Texas and is designed to spark interest in aerospace engineering and manufacturing careers.

The *SBCTC Academic Year Report* (http://www.sbctc.edu/college/d_acad.aspx) serves to compile data on college level manufacturing pathways. Chapter III of the report, Student Progress and Success, contains a broad range of data including the number of student graduating with technical degrees and the number of students participating in apprenticeship.

3. What state initiatives currently support either the manufacturing sector or skills certification?

Washington has multiple initiatives that support the manufacturing sector and/or skills certification. These initiatives range from statewide strategic planning efforts around targeted industry sectors to targeted investments of funding

designed to support specific industries critical to the state's economy to strategies designed to create stronger linkages between industry sectors and workforce training programs and to the creation of technical high schools and the infusion of manufacturing related technical skill building in secondary education. (*see Appendix D*)

Washington's Workforce Training and Education Coordinating Board (WTECB) is responsible for the development of a *statewide comprehensive strategic plan* for workforce development. This plan is in addition to the state's planning efforts associated with the federally funded workforce education and training programs. The current plan, *High Skills, High Wages 2008-2018: Washington's Strategic Plan for Workforce Development* (<http://www.wtb.wa.gov/Activities/HighSkills.asp>) is organized around targeted industry sectors that are essential to Washington's economy. Several of these sectors are related to manufacturing.

The State Board for Community and Technical Colleges has developed and supports 11 *Centers of Excellence* organized around targeted industry sectors critical to Washington's economy. The Centers serve as the statewide liaisons to business, industry and the state's educational systems for the purpose of creating a highly skilled and readily available workforce. Though two are newly developed and in the formative stages, Washington does have four centers that tie directly to manufacturing:

- Center of Excellence for Aerospace & Advanced Materials Manufacturing (<http://www.a2m2.net/>) which is hosted at Everett Community College and Edmonds Community College. The Center's mission is to increase the competitiveness of manufacturers using composites and other advanced materials through workforce training and education.
- Center of Excellence for Advanced Manufacturing & Process Control Technology, (<http://www.btc.ctc.edu/COE/index.asp>) housed at Bellingham Technical College, serves as a hub for training and workforce development needs for major processing industry clusters.
- Northwest Center of Excellence for Marine Manufacturing and Technology (<http://www.marinecenterofexcellence.com/>) is housed at Skagit Community College. The Center is a hub for innovative discussions, resources, training and education services that create a repository of information and illuminate best practices related to industry trends and emerging technologies to foster economic vitality.
- The Center of Excellence for International Trade, Transportation and Logistics (<http://www.highline.edu/home/messages/excellence.htm>) is housed at Highline Community College and led by a statewide advisory committee. The Center facilitates linkages and partnerships among education, business, industry, community partners, and workforce intermediaries, advocating for Washington State both nationally and internationally in international trade, transportation, and logistics.

Washington currently operates three *technical high schools* located at

- Bates Technical College (<http://www.bates.ctc.edu/page.asp?view=243>),
- Clover Park Technical College (<http://www.cptc.edu/wrl.asp?t=wrl&iDRN=1008&iCRN=1077>) and
- Lake Washington Technical College (http://www.lwtc.ctc.edu/Offices_and_Services/Department_Pages/High_School_Programs/Lake_Washington_Technical_Academy.xml)

Technical high schools prepare students to engage a broad spectrum of professional technical programs which they typically enter upon completion of the technical high school. The technical high schools provide students with foundational skills necessary to pursue careers related to manufacturing.

Additionally, a multi-agency team completed the *Technical High School Feasibility Study* (<http://www.k12.wa.us/default.aspx>) that proposes the creation of "technical innovation high schools" to be operated by the Office of the Superintendent of Public Instruction. The study distinguishes the "technical innovation" high

schools from the “technical” high schools described above as institutions that are designed to prepare students for careers in particular industries. Examples include the currently operating Aviation High School (<http://www.aviationhs.org>) and Delta High School (<http://www.thedeltahighschool.com>).

The Washington State Department of Labor and Industries supports *Running Start for the Trades*. (see **Appendix E**) This program is designed to create dual credit opportunities for high school students in trade related career paths.

Through the Carl E. Perkins Act, Washington State supports *career and technical education* for high school students. *Tech Prep*, another dual credit program for high school students, provides career preparation courses specifically related to manufacturing throughout the state. (see **Appendix F**)

The state’s *Career and Technical Education* office also coordinates an active apprenticeship program. This office maintains an apprenticeship website that explains how young people can get involved with apprenticeship (<http://www.explorerapprenticeship.wa.gov>).

Washington State has created the *Job Skills* and the *Customized Training Programs*. These programs are state administered and designed to assist businesses with customized employee training programs and are operated by SBCTC.

The *Customized Training Program* provides a tax credit for participating manufacturers. Approximately 75% of the companies participating in the *Customized Training Program* have been manufacturers.

The *Job Skills Program* is an employer match grant program with heavy manufacturer participation. **Appendix G** contains a chart that details Job Skills program funding distribution. The 2009 Job Skills Program Report to the Legislature can be found at (http://www.sbctc.edu/college/workforce/09_10_jsp_report1.pdf).

The Washington Council on Aerospace report to the Governor and Legislature provides a high-level look at plans to support and grow the aerospace industry in Washington State. Focusing on *Section 3.2* and *I. Inventory: Workforce Education and Talent* of the report will allow for alignment of NAM’s certificate system with the aerospace industry development.

<http://www.leg.wa.gov/documents/legislature/ReportsToTheLegislature/Washington%20Council%20on%20Aerospace%20--%20Report%20to%20the%20Governor%20an>

In addition, new aerospace training centers are being built at the Spokane Airport and Paine Field in Everett. These Centers will provide training in, but not limited to, the following areas: FAA Part 147 air maintenance technician training, flight operations training, and aerospace joint apprenticeship training.

A number of the projects made possible by ARRA funding have a focus that could make use of one or more of the NAM certificates to credential the 460 students that typically are participating in these projects. (see **Appendix H**)

4. What are the manufacturing organizations or associations in the state?

Washington has multiple organizations and associations dedicated to supporting manufacturing. These organizations, identified below, operate at multi-state, state-wide, multi-region, region-specific and local levels.

Multi-State Regional Manufacturing Organizations

Society for the Advancement of Material and Process Engineering (<http://www.seattlesampe.org/>)

The Society for the Advancement of Material and Process Engineering, SAMPE®, an international professional member society, provides information on new materials and processing technologies through chapter technical

presentations, two journal publications, symposia and commercial expositions in which professionals can exchange ideas and air their views. As the only technical society encompassing all fields of endeavor in materials and processes, SAMPE provides a unique and valuable forum for scientists, engineers, designers and academicians. The SAMPE Seattle Chapter covers the Pacific Northwest.

NW Food Processors Association (www.nwfpa.org).

The mission of NW Food Processors Association businesses is to be an advocate for food processing manufacturer members' interests and a resource for enhancing their competitive capabilities.

State-Level Manufacturing Organizations

Association of Washington Business (AWB) (www.awbinstitute.org)

This is NAM's state affiliate and operates the AWB Institute (AWBI). The AWBI focuses on manufacturing. The AWB Institute is currently working with RSM McGladrey on a manufacturing survey that should provide substantial information that could identify additional assets that might support the NAM-Endorsed Manufacturing Skills Certification System. It is expected that this data will be available in summer 2010. AWB maintains an extensive directory of manufacturing organizations and companies in Washington State.

IMPACT Washington (formerly Washington Manufacturing Service) (www.impactwashington.org)

This non-profit organization aims to strengthen Washington manufacturing firms to make them more competitive internationally. IMPACT Washington has a lean certificate training program that could serve to identify manufacturing firms that might want to participate in the NAM certificate system. IMPACT Washington also maintains an extensive list of manufacturing firms and manufacturing organizations around Washington State and is working with RSM McGladrey on the manufacturing survey.

Aerospace Joint Apprenticeship Committee (www.ajactraining.org)

The mission of AJAC is to develop, implement and maintain thriving aerospace apprenticeship programs for the purpose of creating a pool of highly-skilled aerospace workers and connecting employers and work-seekers of Washington State.

Tech Help (<http://www.techhelp.org/>), the Manufacturing Extension Partnership representatives from Idaho occasionally help Impact WA on projects that bridge the two states.

In-State Regional Manufacturing Organizations

NW Manufacturing Alliance (<http://www.thurstonedc.com/Page.aspx?hid=196>)

The mission of the Northwest Manufacturers Alliance (NWMA) is to improve the competitive environment for manufacturing operations within the Pacific Mountain workforce development region (inclusive of the counties of Pacific, Lewis, Grays Harbor, Mason and Thurston).

Society of Manufacturing Engineers (SME) (www.sme.org)

The Society of Manufacturing Engineers (SME) connects manufacturing practitioners to each other, to the latest technology and the most up-to-date processes spanning all manufacturing industries and disciplines, plus the key areas of aerospace and defense, medical device, motor vehicles, including motorsports, oil and gas, and alternative energy.

Center for Advanced Manufacturing Puget Sound

CAMPS is a resource center bringing together manufacturers, supply chain partners, pre-qualified business development specialists, and strategic partners in the Puget Sound area. CAMPS is a not-for-profit membership organization representing small and mid-sized manufacturing businesses working through strategic partnerships in the region.

Local Manufacturing Organizations

Manufacturing Industrial Council of Seattle (MIC) (<http://www.micouncil.org/>) This organization has a strong commitment to marketing manufacturing careers to young people in the greater Seattle area.

Timber Products Manufacturing Association (<http://www.tpmrs.com/training.aspx>) TPM offers a wide-range of trainings from motivation and delegation to power tool safety and back injury prevention in the Spokane area.

The Society for Mechanical Engineers, Local 248 in Spokane (<http://sites.google.com/site/sme248/current-projects/inland-northwest-leadershipcommittee>) is active in manufacturing initiatives in Spokane.

Inland Northwest Leadership Council (INLC) (<http://sites.google.com/site/inlandnwindustry/home>), is a consortium of local professional societies working together to improve industrial competitiveness in the Inland Empire.

Local Manufacturing Associations with a Relationship to Colleges

Aerospace Futures Alliance (AFA) (<http://afa-wa.com/goals.html>)

The AFA is an industry advocacy organization that seeks to represent the needs and concerns of every aerospace company in the industry, regardless of size. The AFA is heavily involved in increasing the state's investment to the workforce training and education needs of the state's aerospace manufacturers. Currently, the AFA is engaged in a partnership with Edmonds Community College to develop the Washington Aerospace Training and Research Center at Paine Field in Everett. This Center is designed to be one of two regional training centers targeting the needs of Washington's aerospace industry. Spokane Community College is in the early development stages for a Center at Spokane International Airport.

Greater Spokane Incorporated (GSI) (<http://www.greaterspokane.org/industries/116-manufacturing-industries.html>) states that 9% of the Spokane area's employment base is in manufacturing, and that it added 10,000 manufacturing jobs in the last few years. Within Greater Spokane Incorporated for manufacturers are the Manufacturers Roundtable and the *Inland NW Aerospace Consortium* (<http://www.inwac.com/>). Two other GSI groups that would be helpful to NAM's goal would be the *Higher Education Leadership* group and the *K-12 Roundtable*.

One of the community and technical college assets that *Greater Spokane Inc.* mentions are:

- *Business and Community Training Center (BCT)*The BCT acts as the community colleges' one-stop training coordinator for business and industry, linking client training needs with the considerable resources of *Spokane Community College, Spokane Falls Community College* and the *Institute of Extended Learning (a part of the community colleges of Spokane.)*

While it is outside the Washington State boundary, the *Northern Idaho Manufacturers Association* is very energetic and their enthusiasm is felt along Washington State's eastern border.

Spokane Community College Manufacturing Program Advisory Board members in **Appendix I** is an example of the diversity of industry representatives that colleges recruit for their manufacturing program boards.

5. What career awareness and student recruitment strategies are there in the state?

Washington has developed a number of diverse strategies designed to recruit students into targeted industry sectors, including manufacturing. While there are a number of statewide strategies in place, many of the efforts are occurring locally and are based upon local employer needs.

On October 19, 2009, Governor Gregoire allocated \$1.5 million in Workforce Investment Act Governor's Discretionary funding to support the aerospace industry. In her directive, the Governor allocated \$200,000 to the Washington Aerospace Scholars program, offered by the Museum of Flight, for the specific purpose of "build(ing) enthusiasm and interest in aerospace among students." Additionally, the Governor allocated \$500,000 to replacing old equipment in aerospace training programs to ensure that students were afforded the opportunity to train on equipment used in current aerospace manufacturing environments.

The *Washington Aerospace Scholars* program targets and recruits students from across the state for participation in its NASA-approved educational program. This innovative program is open to all students who meet certain educational attainment criteria (e.g.: specified grade point average). The program is provided to qualifying students entirely without charge. As a result, many low-income students have the opportunity to participate. The program's curriculum has a heavy emphasis on developing the skills necessary to pursue additional education in engineering, manufacturing and other aerospace related disciplines.

The *Centers of Excellence* are actively involved in student recruitment activities centered on manufacturing. The *Centers of Excellence for Marine Manufacturing & Technology and Aerospace & Advanced Materials Manufacturing* collaborated on the development of a DVD designed specifically to market manufacturing careers to middle and high school students. The DVD, entitled *I Am Washington*, targets non-traditional populations and provides information on the career opportunities in the modern manufacturing environment. This DVD has been distributed to middle and high schools, guidance counselors, teachers, parents and students throughout the state.

Washington Business Week (<http://www.wbw.org/>), in collaboration with several Centers of Excellence and Workforce Development Councils, is currently developing a Business Week camp for high school students dedicated to manufacturing. The camp is scheduled for July 2010.

Efforts to recruit students to pursue manufacturing careers are occurring on the following college campuses:

- Lower Columbia College in conjunction with the Washington/Oregon WIRED project (<http://www.wirednw.org/>)
- Olympic College in conjunction with a US Department of Labor grant
- Edmonds Community College in conjunction with its Summer Institute.

Snohomish County has developed an online career education system entitled *Career Trees* (<http://www.careertrees.org/history/index.html>). The *Career Trees* site has a manufacturing track that provides information from low-skill through high-skill employment opportunities.

While most community and technical colleges have partnerships with employers, of particular note is the partnership between Tacoma Community College and General Plastics Manufacturing. This partnership was awarded a *2009 Governor's Best Practice Award* for its efforts to demonstrate how engaged employers and educational institutions can recruit, maintain and develop a top-flight workforce. This successful partnership has resulted in increased employee involvement and sense of ownership for each of the 25 participating employees while creating a workforce for General Plastics Manufacturing that is capable of competing in the global economy. (<http://www.tacomacc.edu/continuingeducation/>).

When specifically asked about NAM's *Dream It, Do It* campaign, 25% of survey respondents indicated an awareness of this career awareness and recruitment strategy.

The Society of Manufacturing Engineers (SME 248) in Spokane participated in the Greater Spokane Incorporated (GSI) Career Fair. Over 1,400 middle school and high school students participated in the National Guard Readiness Center to learn about career opportunities in manufacturing, health care, aerospace, business and professional services, construction, and hospitality and tourism. SME 248 has an Eastern Washington University (EWU) Professional Society Day yearly. At this event, which was co-sponsored by the INLC, 10 new EWU engineering students joined the SME248 Student Chapter.

The Spokane Skills Center (<http://www.skillscenter.com/>), like the ten (soon to be 14) other state skills centers (<http://www.k12.wa.us/CareerTechEd/WhyCTE.aspx>), introduce students to a variety of careers. Unfortunately, in Spokane, the flow of student into post-secondary institutions like Spokane Community College is very small. On the bright side, a public-private partnership has made the Manufacturing Technology Workshop a yearly, on-going opportunity for 25 students from the skills center to try out CAD, welding and machining for three weeks each summer at Spokane Community College.

6. What other government programs might already be assigned to support the skills certification project?

Washington possesses multiple programs that could be leveraged to support the skills certification project. Survey respondents identified local workforce investment boards, economic development organizations, one-stop career centers (WorkSource in Washington) and philanthropic entities.

Additionally, there are several student associations that are active in manufacturing. These include:

The *Washington Technology Student Association (WTSA)* (<http://www.washingtontsa.org>) is active in manufacturing via their own robotics program. The Association has a yearly conference in March that is designed to allow students to learn about career and educational opportunities throughout the state.

The *Washington Industrial Technology Education Association* (<http://www.witea.org/>) addresses technical education program curricula and hosts the Sloan Career Cornerstone Center. It also hosts a mid-March conference designed to be “the conference for the latest trends and innovations in Technology Education / STEM / Pre-Engineering...”

The *Washington Association for Career and Technical Education* (<http://www.wa-acte.org>), the state affiliate of ACTE, is active legislatively and links a number of associations that are active in career and technical education. (*See Appendix J*)

The Workforce Training and Education Coordinating Board (WTECB) has developed and maintains a document that identifies workforce development programs and their associated funding streams in Washington. The Workforce Development Funds and Services Matrix is located at (<http://www.wtb.wa.gov/Documents/matrixfullsize.pdf>).

7. What types of organizations serve lower income young adults?

Washington is fortunate to possess many organizations dedicated to serving low-income young adults. These organizations and their associated programs operate on statewide, regional and local levels.

On the statewide level, Washington participates in the national *Achieving the Dream: Community Colleges Count* initiative. The initiative is designed to assist more community college students – particularly low-income students and students of color – to succeed. The initiative works on multiple efforts, including community colleges, public engagement, public policy and research. Nationally, there are a total of 82 institutions in 15 states are participating

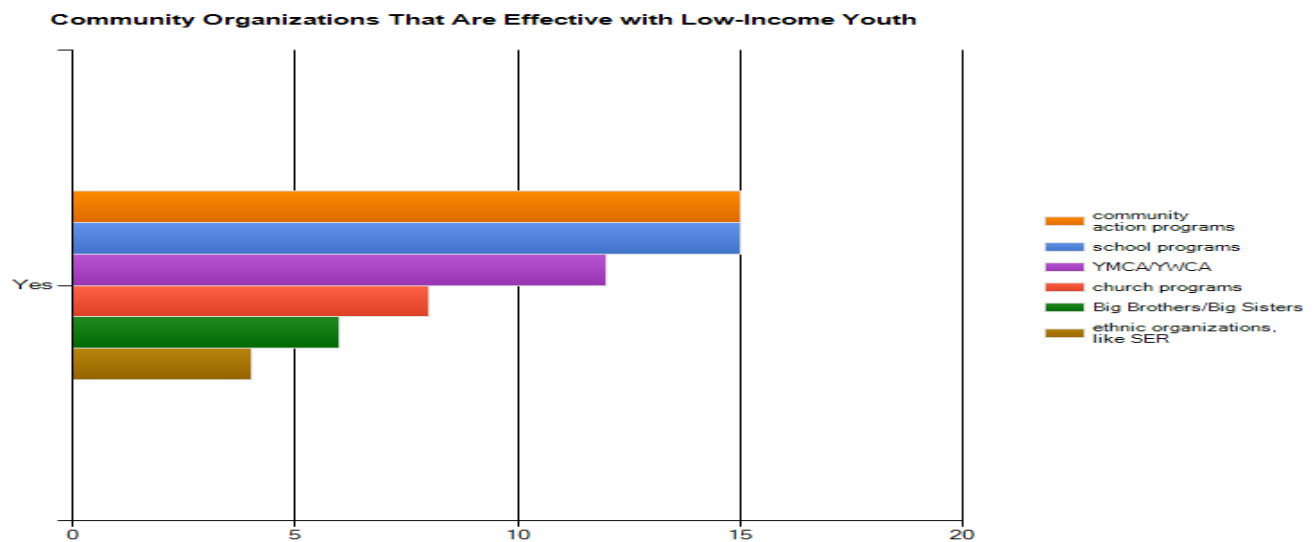
in Achieving the Dream. More information, including a full list of participants, can be found online at (www.achievingthedream.org).

In Washington, this grant provides funding to support six colleges in their efforts to assist low-income and students of color to succeed in higher education. These colleges are:

- Big Bend Community College
- Highline Community College
- Renton Technical College
- Seattle Central Community College
- Tacoma Community College
- Yakima Valley Community College

SBCTC provides funding to colleges throughout the state for *High School Completion* and *Adult Basic Education* classes which low-income youth often attend. Additionally, SBCTC has received *Bill and Melinda Gates Foundation* funding which targets low-income youth and is focused on student success and transitions.

SBCTC’s survey revealed that many organizations serving low-income youth are found in most Washington State communities.



Additionally, survey respondents also identified the following specific organizations that provide support to low-income youth in the state:

- *Link LLC* in Longview, Washington
- *Goodwill REACH Center* in Tacoma, Washington
- *WSU GEAR UP* for Soap Lake and Moses Lake in Central Washington
- *Century 21st Grant - Northwest Learning and Achievement* in Moses Lake K-12 schools.

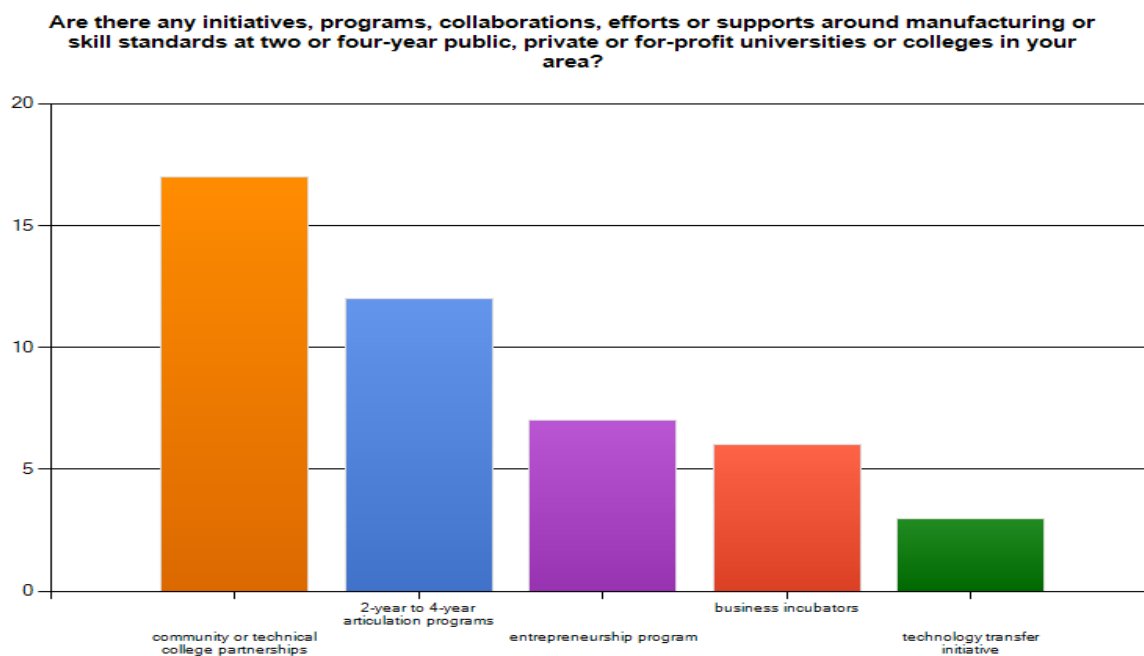
8. What other groups might be focused on the same topic and be willing to leverage resources?

As stated above, the survey respondents indicated that local workforce investment boards, local and/or regional economic development organizations, one-stop career centers (WorkSource), and local/regional foundations and

philanthropic organizations are all groups that may be willing to partner for purposes of leveraging resources and furthering a common goal around manufacturing.

9. What are universities doing to support the manufacturing industry or community and technical colleges?

Survey respondents identified community and technical college partnerships, articulation agreements, entrepreneurship programs, business incubators and technology transfer initiatives as key activities involving universities in supporting manufacturing.



Research Transfer

As part of her directive providing support to the aerospace industry, Governor Gregoire allocated \$100,000 to the *Washington Technology Center* to facilitate the development of research transfer protocols in to community college curriculum. This funding is designed to create methods of effective, efficient and rapid translation of university research in to community college curriculum in order to ensure that community and technical college students are exposed to and receive training on the latest materials and advances necessary to support the future of the industry. The *Washington Technology Center* also serves as a small business incubator and maintains a micro-fabrication lab in the Seattle area. (<http://www.watchcenter.org>)

The University of Washington has developed a *Center for Commercialization* that is designed to assist researchers in patenting and licensing their research activities in preparation for future development. This center assists researchers with the licensing of manufacturing processes. (<http://depts.washington.edu/uwc4c/>)

Washington State University maintains a similar effort through its *Office of Intellectual Property Administration (OIPA)*. As part of the University’s Research Foundation, the *OIPA* promotes the commercialization, patenting and licensing of products, processes and services invented at WSU.

Additionally, WSU maintains a *Composite Materials and Engineering Center* that ties directly to manufacturing. (<http://www.wmel.wsu.edu>)

Conclusion

The preceding asset map begins to identify Washington programs and initiatives either directly connected to or readily capable of providing support to the implementation of the NAM-Endorsed Manufacturing Skills Certification System through the state's community college system. This document should not be considered an exhaustive list of such assets as Washington's spirit of innovation results in a rapidly changing environment and the regular addition of new assets as time progresses.

Finally, it is important to note that, while there is a vast array of statewide potential support for NAM's certification system, the catalyst for implementation will be employers that uniformly embrace the certification system. Until demand is created by the manufacturing industry, the initiative will falter.

Appendix A
Manufacturing Council
March 1, 2010 Meeting Participant List

Grant Gilmore – AWB Institute

Tom McLaughlin – CAMPS

Ed Halloran – HALCO Management Systems

Frank Cox – Mat Ed – Edmonds Community College

Emily DeRocco (via phone) – NAM Institute

Daniel Malarkey –Dept of Commerce

Chris Coleman - WA Technology Center

Mary J. Spear – AWB Institute

Rick Hole – NW Manufacturers Alliance

Carl Adrian – Tridec

Egils Milbergs – WA Economic Development Commission

John Vicklund – IMPACT WA / WA Manufacturing Services

Stan Key – Greater Spokane Inc.

Terri Thayer – COE Process & Control Technology

Regan Copeland – COE for Int'l Trade, Transportation & Logistics

Mary Kay Bredeson – COE Aerospace & Advanced Materials

Michael Tate, SBCTC

Doesn't include short-term certificates or contracted programs ○ Collaborative program ✳ Baccalaureate program	Bates	Bellevue	Bellingham	Big Bend	Cascadia	Centralia	Clark	Clover Park	Columbia Basin	Edmonds	Everett	Grays Harbor	Green River	Highline	Lake Washington	Lower Columbia	North Seattle	Olympic	Peninsula	Pierce District	Renton	Seattle Central	Seattle Voc Institute	Shoreline	Skagit Valley	South Puget Sound	South Seattle	Spokane	Spokane Falls	Tacoma	Walla Walla	Wenatchee Valley	Whatcom	Yakima Valley			
	Electrical, Electronics & Communications Engr Tech																																				
Electromechanical Tech																																					
Energy Management																																					
Engineering Tech																																					
Environmental Engineering Tech																																					
Geographic Information Systems																																					
Hydraulics & Fluid Power Tech																																					
Industrial/Manufacturing Tech																																					
Instrumentation Tech																																					
Mechanical Tech/Mechanical Drafting																																					
Nanotechnology																																					
HEALTH PROFESSIONS																																					
HOSPITALITY, FOODS & RECREATION																																					
INDUSTRIAL, CONSTRUCTION & MANUFACTURING																																					
Building/Construction Mgmt & Inspection																																					
Cabinetmaking & Millwork																																					
Carpentry																																					
Computerized Numerical Control Mfg																																					
Electrical/Power Transmission																																					
Electronics Assembly																																					
Job Skills for Construction Trades																																					
Machine Tool Tech																																					
Multi-Occupational Trades/Apprenticeship																																					
Sheet Metal Tech																																					
Upholstery																																					
Welding Tech																																					
Zero Energy Building																																					
INFORMATION TECHNOLOGY																																					
MECHANICS																																					
Aircraft Mechanics, Airframe/Powerplant																																					
Appliance Installation & Repair Tech																																					
Autobody/Collision & Repair Tech																																					
Automotive Mechanic/Tech																																					
Automotive Service Writing																																					
Communication Systems Installer & Repairer																																					
Computer Installation & Repair Tech																																					
Computer Integrated Manufacturing																																					

Doesn't include short-term certificates or contracted programs ○ Collaborative program ✳ Baccalaureate program	Bates	Bellevue	Bellingham	Big Bend	Cascadia	Centralia	Clark	Clover Park	Columbia Basin	Edmonds	Everett	Grays Harbor	Green River	Highline	Lake Washington	Lower Columbia	North Seattle	Olympic	Peninsula	Pierce District	Renton	Seattle Central	Seattle Voc Institute	Shoreline	Skagit Valley	South Puget Sound	South Seattle	Spokane	Spokane Falls	Tacoma	Walla Walla	Wenatchee Valley	Whatcom	Yakima Valley		
	Diesel Mechanics Tech																																			
Electrical & Electronics Equip Installer & Rpr																																				
Heating/Air Conditioning/Ventilation/Refrig Maint Tech																																				
Heavy Equipment Maint Tech																																				
Industrial Electronics Tech																																				
Industrial Mechanics & Maint																																				
Industrial Plant Services																																				
Marine Maint & Repair																																				
Motorcycle Maint & Repair Tech																																				
Musical Instrument Fabrication & Repair																																				
Small Engine Mechanics & Repair Tech																																				
Stationary Energy Sources Installer & Operator																																				
Watch & Clock Repair																																				
MEDIA, COMMUNICATIONS & DESIGN																																				
PROTECTIVE SERVICES																																				
TRANSPORTATION & MATERIALS MOVING																																				
Aviation/Airway Mgmt & Operations																																				
Commercial Helicopter Pilot																																				
Marine Carpentry/Boat Building																																				

Appendix C

IBEST Programs with a Manufacturing Focus

Bates

Program Name: Industrial Trades

Primary Contact: Gloria Garner ggarner@bates.ctc.edu

Program Summary: The Industrial Trades I-BEST program prepares students for entry into the high demand, high wage industry of machining, manufacturing, and other related industries. Students receive skills training in industry-specific mathematics, welding, and employment success strategies.

Bellingham

Program Name: Welding Technology

Primary Contact: Patricia McKeown pmckeown@btc.ctc.edu

Program Summary: The target population for the I-BEST Welding program will be both ABE (level 3) and ESL (level 5) students. The I-BEST Welding program student will attend classes over two full quarters. I-BEST will include 15 credits applicable towards the Basic Welding or Industrial Welding Certificates or AAS Welding Technology degree, which includes WABO certification. At the end of the second quarter of the I-BEST program, students will obtain a Welding Helper certificate and go to work and/or go on to the next certification levels and degree.

Program Name: Basic Industrial Technology Certificate (Option I or II)

Primary Contact: Susan Parker sparker@btc.ctc.edu

Program Summary: The Basic Industrial Technology I-BEST program student will attend classes for three quarters. This I-BEST schedule will include approximately 10-15 credits applicable towards the Electronics Technology (in Biomedical, Manufacturing, Telecommunications, or Computer Systems), Instrumentation & Control Technology, Electro Mechanical Technology or Process Technology AAS and AAS-T degree.

Big Bend

Program Name: Commercial Driver's License

Primary Contact: Sandy Cheek sandyc@bigbend.edu

Program Summary: CDL training is a terminal certificate in commercial truck driving that leads to employability at higher wages, the CDL course credits are above 100 level, making them transferable as elective credit towards other certificates or degrees.

Program Name: Welding

Primary Contact: Sandy Cheek sandyc@bigbend.edu

Program Summary: The welding classes are competency-based and allow students to acquire skills and competencies that apply to a welding certificate or degree. Depending on their entry level of skills and their hourly participation, students progress at their own rate toward course completion. Six credits of Welding 111 and 3 credits of Welding 112 are required as part of the Certificate of Achievement.

Clark

Program Name: Certificate of Achievement in Wire Feed and Advanced Arc Welding Processes

Primary Contact: Danette Rudolph drandolph@clark.edu

Program Summary: The two-quarter, 30 credit Certificate of Achievement in Wire Feed and Advanced Arc Welding Processes prepares completers to become entry level welders in a variety of job settings. The curriculum includes the theory of GMAW, FCAW and SAW arc welding and lab practice to master these processes, as well as basic blueprint reading. Students will have the opportunity to earn American Welding Society certification in three welding processes.

Clover Park

Program Name: Architectural CAD Drafting

Primary Contact: Mabel Edmonds mabel.edmonds@cptc.edu

Program Summary: The Architectural CAD Drafting I-BEST program is a 3 quarter part-time program designed to prepare ESL students for success in the Architectural Engineering Design associate degree program at Clover Park Technical College. Each of the technical courses included in this program apply directly toward the associate degree. The courses selected for this I-BEST model provide foundational terminology, concepts, and knowledge essential for success in the architectural drafting industry. They also provide the technical skills required for entry-level CAD drafting positions. The program is 684 clock hours and 30 credits, spread over 3 quarters.

Edmonds

Program Name: Electronics Technology

Primary Contact: Jerilee Mosier jerrilee.mosier@edcc.edu

Program Summary: The 12 credit Electronics Technology program fits into the 29 credit Basic Electronics Certificate program, which is the starting point of the 90 credit ATA in Robotics and Electronics Technology.

Program Name: Construction Industry Training

Primary Contact: Judith Robison jrobison@edcc.edu

Program Summary: Construction Industry Training (CIT) is a professional/technical program with a 7 credit "Quick Start" Certificate of Completion (COC). Upon completion of COC requirements the student has earned a 10-Hour OSHA (Occupational Safety and Health) certificate, a Flagger certificate, and a CPR/First Aid card. COC students are competitive for entry-level construction helper jobs with a

median wage of \$13.50 per hour. Students who have completed the COC successfully have earned 7 credits toward the 23 credit CIT Certificate program and would be expected to excel due to the enhanced support of the I-BEST course during the initial quarter. Graduates CIT of the Certificate program are competitive for construction laborer jobs with a median wage of \$18.00 per hour. Additionally, graduates of the CIT Certificate program are eligible for direct entrance into the North Puget Sound Carpenter Union Apprenticeship Program. Both ABE and ESL students are target populations for the CIT programs. Student who complete the 23 credit CIT Certificate have the opportunity to count up to 12 of the credits as electives toward the 95-credit Construction Management ATA degree. With the ATA degree, a student can transfer to a 4-year college to complete a Bachelor's Degree in Construction Management.

Everett

Program Name: Welding/Fabrication

Primary Contact: Darrell Mihara dmihara@everettcc.edu

Program Summary: I-BEST includes 13 credits applicable toward the certificate or ATA in Welding. I-BEST graduates will have priority registration when they are ready to continue in the Welding Program.

Program Name: Advanced Manufacturing

Primary Contact: Darrell Mihara dmihara@everettcc.edu

Program Summary: I-BEST students enrolling in this program are recruited from populations at ABE Level 4 and ESL Level 4/5. After completion of the 18.5 I-BEST Manufacturing Technology credits, students will receive a *Certificate of Recognition* and qualify for assembly and fabrication jobs if they seek immediate employment, and/or they may apply up to 10.5 credits earned in the I-BEST classes to the pursuit of either a certificate or a degree in one of the pathways available in the Advanced Manufacturing Program. These pathways are as follows: Computer Aided Design; Precision Machining/CNC; Welding and Fabrication.

Grays Harbor

Program Name: Commercial Driver's License

Primary Contact: Mike Kelly mkelly@ghc.edu

Program Summary: The I-BEST Certificate of Achievement in Commercial Driver's License (CDL) leads to employment in a high wage, high demand career. This two quarter, 25 credit program is designed for Adult Basic Education students. The CDL courses are above 100 and may be used as electives towards other certificates and degrees. We anticipate that 7 of the 9 CDL students will be I-BEST students.

Program Name: I-BEST Carpentry

Primary Contact: Mike Kelly mkelly@ghc.edu

Program Summary: The I-BEST Certificate of Achievement in the Carpentry Program gives students priority placement in more advanced carpentry courses which lead to high wage,

high demand jobs. This three quarter, 36 credit program, is designed for Adult Basic Education students.

Program Name: Welding Technology

Primary Contact: Mike Kelly mkelly@ghc.edu

Program Summary: The six Welding Technology core classes are clustered and taught concurrently. Students may start any quarter and approximately 10 I-BEST students will be enrolled in welding courses with other traditional students. Students may earn an Associate in Technology (AT) degree, a Certificate of Completion, and/or four Certificates of Achievement. The I-BEST Certificate of Achievement in the Welding Technology Program gives students priority placement in additional Welding technology courses which lead to high wage, high demand jobs. This three quarter, 53 credit program, is designed for Adult Basic Education students.

Green River

Program Name: Welding I-BEST

Primary Contact: Rebecca Rhodes rrhodes@greenriver.edu

Program Summary: The I-BEST Welding program will prepare students for entry-level welding jobs and position them to continue into three 26-credit certificate programs and the AAS Welding degree. The competency-based course allows students to acquire - at their own rate – the technical and basic skills required for WABO certification.

Program Name: Aviation Technology

Primary Contact: Rebecca Rhodes rrhodes@greenriver.edu

Program Summary: The I-BEST Aviation program will prepare students for entry-level jobs in the aviation industry and position them to continue into two 20-credit and one 41 credit certificate programs as well as either an AAS in Air Transportation or Air Traffic Control & Airline Dispatch. The competency-based course allows students to acquire the technical and basic skills required for a successful career in the aviation industry.

Lake Washington

Program Name: Energy Technology Certificate of Completion

Program Contact: Mihaela Cosma mihaela.cosma@lwtc.edu

Program Summary: The I-BEST Energy Technology Certificate of Completion prepares high level ESL and ABE students for employment in the field of alternative energy. Students take a total of 26 credits over three quarters while continuing their progress in Basic Skills. This I-BEST certificate is intended to be an articulation option to the Bio-Energy Certificate of Completion and the Energy and Science Technician Associate of Applied Science Degree.

Program Name: Industrial /Laboratory Certificate of Completion

Program Contact: Mihaela Cosma mihaela.cosma@lwtc.edu

Program Summary: The I-BEST Industrial/Laboratory Certificate of Completion prepares high level ESL and ABE students for employment opportunities in laboratory settings such as healthcare, agriculture, or the environment. Students take a total of 25 credits over two quarters while continuing their progress in Basic Skills. This I-BEST certificate is intended to be an articulation option to the Bio-Energy Certificate of Completion and the Energy and Science Technician Associate of Applied Science Degree.

Lower Columbia

Program Name: Manufacturing Skills Certificate

Primary Contact: Chastity Clark crclark@lcc.ctc.edu

Program Summary: The Manufacturing Skills Certificate is a new certificate completed in 4 quarters that includes 4 general education and 6 program courses for a total of 51 credits. Students can exit into the job market as production workers or continue education/training in one of two career tracks, Machinist Certificate or CNC Machinist.

Program Name: I-TRANS (Integrated Transitional Studies)

Primary Contact: Jon Kerr jkerr@lcc.ctc.edu

Program Summary: I-TRANS is a 10-30 college-level credit, 1-3 quarter, outcomes-based Integrated Transitional Studies program providing a pathway for students with the goal of earning a transfer or AA vocational degree to successfully bridge the gap between ABE, Developmental Education and college-level classes while earning college communication and humanities credits and increasing both academic skills and career opportunities. ABE and ESL Levels 5 and 6 enroll in a single, comprehensive program rather than a series of separate English courses. At the end of each quarter, students are assessed and awarded English 065, 075, 100, or &101 credit based on the outcomes met. The goal of teaching to the English &101 outcomes is to allow students to complete English &101 in a single quarter whenever possible. I-TRANS allows an ABE student to complete English &101 at any time the outcomes are met. If students do not meet the &101 outcomes the first quarter they can enroll in up to two additional quarters in order to complete English &101. Each quarter students also earn 5 humanities credits. English is team-taught with a 100% overlap concurrently and contextually within HUM &116, &117, and &118, insuring that transferable college level credits toward a DTA or AA are earned quarterly.

Olympic

Program Name: Manufacturing Technology Program

Primary Contact: Elaine Williams Bryant ewilliams@olympic.edu

Program Summary: The Manufacturing Technology Program is a two-quarter, twenty-seven credit Certificate of Completion program of study that will provide students with entry-level manufacturing skills. The curriculum for the Manufacturing Program is based on the Manufacturing Advisory Group (MTAG) curriculum. The curriculum conforms to industry skill standards and SCANS competencies. It incorporates recommendations from Olympic College service area employers in Kitsap and Mason Counties and has been adapted to meet the basic skills needs of the students. This program is designed to be a first step to a career in advanced manufacturing technologies.

Program Name: Welding Program

Primary Contact: Elaine Williams Bryant ewilliams@olympic.edu

Program Summary: The completers of this 2 quarter I-BEST Welding program can gain employment as entry level welders with local employers in Kitsap County and Pierce County. The I-BEST program fits into a two year advanced professional-technical program, Certificate of Specialization – Welding Technology (91 credits) that leads to an ATA Degree, Associates of Technical Arts. This pathway contains three certificates that build on one another and allows for multiple entrance and exit points. There is a 11 credit Certificate of Recognition – Precision Metal Cutting which provides students with a strong introduction to welding. There is also a one year certificate, Certificate of Completion-Welding Technology (44 credits).

Peninsula

Program Name: Composite Structures Program

Primary Contact: Evelyn Short evelyns@pcadmin.edu

Program Summary: The Composite Structures Program Certificate prepares students for the field of composite structure construction and repair as well as the use of catalyzed coatings and paints. This occupational field includes yacht and boat constructions and repair, specialized vintage automobile parts, building construction materials, marine pier construction materials, sport-related equipment construction, and many others. The 44 credit certificate includes 30 credits of composites instruction and 14 credits of general education requirements including First Aid, Math, and Human Relations.

Program Name: Welding Technology-Certificate

Primary Contact: Evelyn Short evelyns@pcadmin.edu

Program Summary: The I-BEST Welding program will prepare students for entry-level welding job and allow them to build towards a two-year AAS Welding degree. The I-BEST program is fully integrated into the one-year welding program where 45 out of the 56 credits required for the certificate are integrated.

Shoreline

Program Name: CNC Machinist

Program Contact: William Sperling wsperling@shoreline.edu

Program Summary: The CNC Machinist – Certificate in Proficiency is a three-quarter program that provides students with the manufacturing skills necessary to enter the workforce as a Computer Numerical Control Machinist. Instruction covers programming

and basic set-up plus operation of CNC machines, blueprint reading, shop mathematics, and machine tool theory. Students gain hands- on experience in the production and machining of industry parts as well as use and care of the measuring devices used in this profession. Although the majority of students will continue through the three quarters, the first quarter prepares students to gain employment in entry-level manufacturing – specifically as assemblers.

Program Name: Bilingual Office Assistant

Program Contact: William Sperling wsperling@shoreline.edu

Program Summary: This program has been developed by Business Technology and ESL faculty. It will be a two quarter program with a total of 19 I-BEST credits and an additional 5 – 10 ESL credits. Faculty have designed a program that covers essential business technology skills while also focusing on communication skills in the workplace – an area constantly emphasized by employers through our advisory committees. We are intentionally marketing the program as “bilingual” because we want ESL speakers to more fully understand that having two or more languages is of great benefit in today’s workplace. As we help completers find employment, we will focus on those businesses and organizations that interact regularly with speakers of other languages: schools, government office, hospitals, and CBOs.

Skagit Valley

Program Name Welding I-BEST

Primary Contact: Jennifer Sadouk Jennifer.Sadouk@skagit.edu

Program Summary: The SVC Welding I-BEST includes ABE/ESL instruction for levels 4 and up to prepare in a 275 hour, multiple micro certificate program allowing students to exit for employment in high wage, high demand employment or to continue on to an ATA degree in Welding.

Tacoma

Program Name: Transportation and Secure Logistics

Program Contact: Kim Ward kward@tacomacc.edu

Program Summary: This four quarter, 21 college-credit program provides an overview of the Logistics industry, with a focus on the technology needed to make the transportation of goods more efficient and secure. Students will be introduced to GIS and RFID technology as part of their training.

Appendix D

Other Related Educational Resources Science and Math Standards and Accountability

Washington State Board of Education (SBE)

The Board is active in K-12 science and math standards and accountability. It is also charged with uniform educational excellence across the state.

(RCW 28A.305.130.4 (c) (d) (e) (f)).

Quality Education Council

The legislative charge above was reinforced with the passage of ESHB 2261 in the spring of 2009 which among other things created a Quality Education Council (QEC) to oversee the K-12 working groups, monitor overall implementation, develop strategic recommendations, identify goals and priorities, and report to the Legislature.

The QEC would be critical to NAM-Endorsed Manufacturing Skills Certification System advancement in this state.

This year, the legislature is considering two bills that could implement the SBE accountability goals: HB3038 and SB6696 which lay out the accountability system as required by the federal *No Child Left Behind Act*. These bills focus on low-income youth and teacher professional development especially in math and science.

Appendix E

Running Start to the Trades 2008-09

Source: Jody Robbins, Technical Specialist, WA Department of Labor and Industries

Four Pilot and ten Incentive grant winning schools embarked on year two activities intended to better connect their students with registered apprenticeship opportunities in the building and construction trades industry. Many in the apprenticeship community have already made connections and/or are working actively to promote these efforts. For more information or to get involved in your local area, contacts are provided below for each of the incentive and pilot efforts.

2007-09 Running Start to Trades

INCENTIVE GRANTS

Kelso School District: Cindy Wardlow cindy.wardlow@kelso.wednet.edu

Lynden School District: Randy Anderson andersonr@lynden.wednet.edu

Marysville School District: Carol Davis Carol.Davis@mssl.k12.wa.us

Omak School District: Dennis Conger dconger@omaksd.wednet.edu

Seattle Public Schools: Shepherd Siegel ssiegel@seattleschools.org

Selkirk School District: Nancy Lotze nlotze@selkirk@k12.wa.us

Trout Lake School District: Doug Dearden ddearden@esd112.wednet.edu

Evergreen School District (Clark): Dennis Kampe dkampe@egreen.wednet.edu

Mount Adams School District: Dana Jarnecke danalj@mtadams.wednet.edu

Sea-Tac Occupational Skills Center: Teresa Dapiaoen dapiaotg@hsd401.org

2007-09 Running Start to Trades

PILOT GRANTS

Bellingham Technical College: Linda Cowan lcowan@btc.ctc.edu

Edmonds School District: Mark Madison madisonm@edmonds.wednet.edu

Kennewick School District: Gerry Ringwood gerry.ringwood@ksd.org

New Market Skills Center: Joe Kinerk joe.kinerk@newmarketskills.com

Appendix F

Tech Prep

Local Consortia Contact Websites:

College Credit and Careers Network (Bellevue, Lake Washington, Shoreline, Cascadia)
<http://www.collegecreditcareersnetwork.org>

Basin Tech Prep Consortium (Big Bend)
<http://www.bigbend.edu/techprep/>

Lewis & So. Thurston County Consortium (Centralia)
<http://www.centralia.edu/academics/techprep/index.html>

Clark-SW Washington Consortium (Clark)
<http://www.clark.edu/techprep>

Columbia Basin Consortium (Columbia Basin)
<http://www.columbiabasin.edu/techprep>

Edmonds Tech Prep Consortium (Edmonds)
<http://techprep.edcc.edu/>

Sno-Isle/Everett Community College Consortium (Everett)
www.everettcc.edu/techprep

Twin County Consortium (Grays Harbor)
<http://www.ghc.edu/TechPrep/>

So. King County Tech Prep Consortium (Green River, Renton, Highline)
<http://www.skctechprep.org>

Cowlitz-Wahkiakum Career Development Consortium (Lower Columbia)
<http://www.lowercolumbia.edu/hs/tech-prep/>

West Sound Consortium (Olympic)
<http://www.westsoundcareers.com>

North Olympic Peninsula Consortium (Peninsula)
<http://pc.ctc.edu/academics/techprep/default.asp>

Pierce County Career Connection (Pierce Ft. Steilacoom, Pierce, Puyallup, Tacoma, Bates, Clover Park)
<http://www.pc3connect.org>

Seattle Tech Prep Consortium (Seattle Central, North Seattle)
<http://www.seattlecolleges.com/techprep/>

Skagit-Island Prep Work Consortium (Skagit Valley)
<http://www.prepwork.org>

South Sound Tech Prep Partnership (South Puget Sound)
<http://www.spscc.ctc.edu/academics/pre-college/tech-prep.html>

Appendix F-Continued
Tech Prep
Local Consortia Contact Websites:

Northeast Washington/Spokane Consortium (Spokane, Spokane Falls)
<http://www.ccs.spokane.edu/getdoc/d2648f4b-d67e-45f1-b123-cdf1e70ff33d/TechPrepTools.aspx>

Southeastern Washington Tech Prep Consortium (Walla Walla)
<http://www.wbcc.edu/CMS/index.php?id=66>

North Central Washington Tech Prep Consortium (Wenatchee Valley)
<http://www.wvc.edu/directory/departments/techprep/>

Whatcom County Consortium (Bellingham, Whatcom)
<http://whatcomtechprep.org>

Yakima Valley Community College Tech Prep (Yakima)
<http://www.yvcc.edu/techpre>

Appendix G

Job Skills Program (JSP) Funding Distribution by Industry (2008-2009)

Manufacturing: 76 percent of grant funding			All Other Industries: 24 percent of grant funding
Aerospace (5 projects)	Food Processing, Sales & Distribution (3 projects)	Paper & Wood Products (2 projects)	Health Services & Hospitals (3 projects)
Chemical Applications (1 project)	Furniture, Door & Bath Fixtures (2 projects)	Plastics (2 projects)	Health Insurance (1 project)
Electrical Components & Electronics (5 projects)	Glass Bottles (1 project)		Transportation & Distribution (2 projects)
Equipment – Agriculture, Marine, Medical (5 projects)	Metals, Gypsum, Concrete (5 projects)		

Appendix H: ARRA Funding in Washington State (Manufacturing-related programs are in **Brown font.)**

College	Contracted with...	Program Name	Contract Start Date	Contract End Date	Length of Time (mos)	No. of Students
Clover Park	Puget Sound ESD Head Start Program	Head Start	11/1/2008	10/31/2009	12	25 (children enrolled)
Olympic	Olympic ESD 114	Head Start	11/1/2008	10/31/2009	12	
Big Bend	SkillSource		7/27/2009	9/4/2009	1.5	10
S Seattle	WDC of Seattle - King County 1	Career Exploration Interns	6/29/2009	10/30/2009	3	25
Spokane IEL	Eastern Washington Partnership WDC	Trucking	9/1/2009	6/30/2010	9	6
Spokane IEL	Eastern Washington Partnership WDC	Trucking	7/1/2009	6/30/2010	12	6
Edmonds	WDC Snohomish County 1		4/20/2009	6/30/2010	15	
Big Bend	SkillSource	Commercial Drivers License	6/11/2009	7/31/2009	1.5	6
Big Bend	SkillSource	Boiler Refrigeration, Basic Electricity, & Programmable Logic	9/15/2009	6/30/2010	9	12
Edmonds	DSHS		7/1/2008	6/30/2010	24	
Bellevue	WDC Seattle King County	Project Management	9/11/2009	6/30/2010	9	20-25
S Seattle	King County Community & Human Svcs	Summer 09 Work Program	5/1/2009	9/30/2009	4	20
Edmonds	Division of Vocational Rehabilitation	Serve clients for Project H.I.R.E.	7/1/2009	4/15/2010	5	15
Columbia Basin	DSHS Division of Vocational Rehab.	Serve clients for Project H.I.R.E.	7/15/2009	4/30/2010	5	15
Bellevue	DSHS Division of Vocational Rehab.	Serve clients for Project H.I.R.E.	7/15/2009	4/30/2010	5	15
Everett	WDC Snohomish County	Nursing ESL	7/21/2009	6/15/2010	11	?
Bellevue	WDC Seattle King County	Database Administrator	9/15/2009	6/30/2010	9	12-16
Spokane IEL	Eastern Washington Partnership WDC		7/1/2009	6/30/2010	12	
Renton	WDC Seattle King County	International NCLEX Registered Nurse	9/7/2009	6/30/2010	9	12-15
Walla Walla	Eastern Washington Partnership WDC		9/15/2009	6/30/2010	9	
Green River	WDC Seattle King County	Accounting	9/7/2009	6/30/2010	9	20-24

Grays Harbor	Pacific Mountain Workforce Consortium	Med Records Office Asst. Energy Technology CNA	7/15/2009	6/30/2010	12 12* ?	20 20 40
So Puget Sound	Pacific Mountain Workforce Consortium	Automotive Alt. EnergyBIM TechnologyNursing Assistant	7/15/2009	6/30/2010	693	242020
Wenatchee Valley	SkillSource	Nursing	9/10/2009	8/31/2010	12	18
Bellevue	WDC Seattle King County	Windows Server 2003 MCSE	9/11/2009	6/30/2010	9	12-16
Clover Park	City of Tacoma	Brownfield's Job Trng.	10/1/2009	9/12/2012	36	200
Skagit Valley	Health & Human Services - Federal Award	Head Start	7/1/2009	9/30/2010	15	
Edmonds	WDC Snohomish County	Training Capacity	7/21/2009	6/15/2010	11	
Skagit Valley	Northwest Workforce Council	Nursing	9/1/2009	9/30/2010	13	20
N Seattle	WDC Seattle King County	Nursing	9/14/2009	8/27/2010	12	22-25
S Seattle	WDC of Seattle - King County 2	Licensed Practical Nursing	6/11/2009	6/30/2010	13	25
Edmonds	WDC Snohomish County 2		4/1/2009	6/30/2010	15	
Edmonds	Health & Human Services - Federal Award	Head Start	7/1/2009	9/30/2010	15	
Lower Columbia	Southwest WA WDC	HOCNA Heavy Equip. Maint. Manufacturing Process Manufacturing	7/1/2009	6/30/2010	12	20 10 20 15
Peninsula	Natnl Science Foundation - Federal Award	Undergraduate Research	8/15/2009	7/31/2013	36	3 senior personnel
Clark	Southwest WA WDC		7/1/2009	6/30/2010	12	
Spokane	Health & Human Services - Federal Award	Head Start	7/1/2009	9/30/2010	15	
SBCTC	WA Dept. of Commerce	Weatherization Trng.	10/15/2009	8/31/2010	10	n/a
Renton	King County DCHS/CSD/Work Trng Prgm	Amended: Summer 09 Work Program	7/1/2008 Am: 5/1/09	9/30/2009	4	20
Big Bend	SkillSource	Medical Business Office	11/9/2009	6/30/2010	9	10
Skagit Valley	Health & Human Services - Federal Award	Early Head Start ARRA Expansion	11/1/2009	9/29/2011	11	
Olympic	Kitsap Community Resources	Students In Need Group (SING)	9/1/2009	9/30/2010	13	50
Olympic	Olympic ESD 114 2	Early Head Start ARRA Expansion	11/2/2009	9/29/2010	11	4

Skagit Valley	NW Workforce Council	Welding Technology	1/1/2010	9/30/2010	6	
SPSCC	Pacific Mountain Workforce Consortium	Phlebotomy Class	1/4/2010	3/30/2010	3	20
Pierce	Tacoma-Pierce County Employment and Training Consortium	Certified Nursing Assistant IBEST	1/4/2010	3/19/2010	3	10
Big Bend	Skill Source 2	Office/Business/Computer Science	1/4/2010	6/11/2010	6	
Big Bend	Skill Source 3	Customer Service/Leadership	2/22/2010	4/21/2010	2	25
Pierce	Tacoma-Pierce County Employment and Training Consortium 2	Medical Billing	8/19/2009	6/30/2010	10	12
Pierce	Tacoma-Pierce County Employment and Training Consortium 3	Network Engineering	8/19/2009	6/30/2010	10	12
Wenatchee Valley	Skill Source 2	Certified Nursing Assistant Prgm	12/1/2009	12/31/2009	1	10
Wenatchee Valley	Skill Source 3	Culinary	2/22/2010	6/30/2010	4	10
Wenatchee Valley	Skill Source 4	Caregiver	2/22/2010	6/30/2010	4	12
Big Bend	Skill Source 4	Commercial Drivers License	1/4/2010	2/12/2010	1	6
Bellingham	NW Workforce Council	Practical Nurse Program	9/1/2009	6/30/2010	9	
Bates	Tacoma-Pierce County Employment and Training Consortium	Intro Allied Health Careers	8/28/2009	6/30/2010	10	44
Columbia Basin	Benton-Franklin Workforce Dev Council	Basic Industrial Mechanical Maint.	12/7/2009	6/30/2010	7	
Columbia Basin	Benton-Franklin Workforce Dev Council 2	Medical Assistant	10/1/2009	6/30/2010	9	
Columbia Basin	Benton-Franklin Workforce Dev Council 3	Medical Secretary	11/1/2009	6/30/2010	10	
Columbia Basin	Benton-Franklin Workforce Dev Council 4	Nursing Assistant	1/27/2010	6/30/2010	5	
Columbia Basin	Benton-Franklin Workforce Dev Council 5	Phlebotomy Class	1/14/2010	6/30/2010	5	
Columbia Basin	Benton-Franklin Workforce Dev Council 6	Receptionist/Practical Accounting	2/17/2010	6/30/2010	4	
Pierce	Tacoma-Pierce County Employment and Training Consortium 4	Medical Billing 2	8/19/2009	6/30/2010	11	12
Pierce	Tacoma-Pierce County Employment and Training Consortium 5	Safety Inspector IBEST	2/1/2010	9/1/2010	7	25
Tacoma	Tacoma-Pierce County Employment and Training Consortium	Adult Medical Office IBEST	8/19/2009	6/30/2010	11	20
Skagit Valley	DSHS Division of Developmental Disabilities	Early Intervention Services	2/17/2010	9/30/2011	19	
Clover Park	Puget Sound ESD Head Start Program 2	Head Start	2/1/2010	9/29/2011	19	

Edmonds	Snohomish County Human Services Dept.		8/1/2009	9/30/2010	12	
Yakima	South Central WDC	Energy Auditor & Weatherization Professional Training	11/10/2009	6/30/2010	7	12
Full contract not provided					*additional 3 quarters funded elsewhere	
Only have letter of intent						
Highlighting Denotes Direct Federal Prime Recipient Awards						

Appendix I

Spokane Community College Manufacturing Program Advisory Boards and Greater Spokane Incorporated Board

MANUFACTURING PROGRAMS AT SPOKANE COMMUNITY COLLEGE (SCC)	
Biomedical Equipment Technician	
Electrical Maintenance and Automation	
Electronics Engineering Technician	
Hydraulic and Pneumatic Automation Technician	
Machinist/CNC Technology	
Mechanical Engineering Technology	
Welding and Fabrication	
SCC MANUFACTURING ADVISORY BOARD COMMITTEE MEMBERS	
Electronics	
LHC2, Inc.	F5 Networks
23326 E. 2nd Ave.	1322 N. Whitman
Liberty Lake, WA 99019	Liberty Lake, WA 99019
(509) 953-2182	(509) 343-3500
Fax: (509) 255-5144	Fax: (509) 343-3501
www.lhc2.com	www.f5.com
-	
Comcast Cable Communications Inc.	XN Air, LLC
1717 E. Buckeye	8125 W. Pilot Dr.
Spokane, WA 99207	Spokane, WA 99224
(509) 755-4674	(509) 455-5204
www.comcast.com/default.csp	Fax: (509) 455-5272
	www.xnair.com
Monaco Enterprises	Spokane VA Medical Center
14820 E. Sprague	4815 N. Assembly
Spokane, WA 99224	Spokane, WA 99208
(509) 926-6277	(509) 434-7000
Fax: (509) 924-4980	www.spokane.va.gov
www.monaco.com	
Holy Family Hospital	The Antenna Works
5633 N. Lidgerwood	PO Box 298
Spokane, WA 99208	Post Falls, ID 83852
(509) 482-0111	rdochs@asisna.com
www.holy-family.org	

Allied Fire and Security	AMX Autopatch Group
425 W. 2nd Ave.	2426 Cheney-Spokane Rd
Spokane, Wa 99201	Cheney, WA 99004
(509) 624-3152	(509) 235-1464
Fax: (509) 624-6909	www.amx.com
www.alliedfireandsecurity.com	
Electrical Maintenance and Automation	
Platt Electric	Pend Oreille PUD
3920 E. Alki Ave.	PO Box 128
Spokane, WA 99202	Ione, Wa 99139
(509) 534-6630	(509) 447-6713
Fax: (509) 535-0521	Fax: (509) 447-5824
www.platt.com	www.popud.com
Columbia Electric Supply	Roseburg Forest Products
203 E. Augusta	PO Box 4007
Spokane, WA 99207	Missoula, MT 59806
(509) 534-6600	(406) 728-3910 x8267
www.cesburley.com/Division.htm	www.rfpco.com
US Army Corps of Engineers	Boise Paper Solutions
PO Box 1120	PO Box 500
Bridgeport, WA 98813	Wallula, Wa 99363
(509) 68-2265	(509) 545-3331
Fax: (509) 686-7101	Fax: (509) 547-2172
www.nws.usace.army.mil	www.boiseinc.com/index.html
Bonneville Power Administration	Pantrol
PO Box 491	3108 E. Ferry
Vancouver, WA 98666	Spokane, WA 99202
(360) 418-2178	(509) 535-9061
Fax: (360) 418-2885	Fax: (509) 535-8793
www.bpa.gov/corporate	www.pantrol.com
FCI USA, Inc.	Rockwell Automation
PO Box 2	15013 Shelly Ct
Newman Lake, WA 99025	Veradale, WA 99037
(509) 981-4995	(509) 994-2994
Fax: (603) 314-5538	Fax: (509) 891-6185
www.fci.com	www.rockwellautomation.com

Plum Creek MDF	Consolidated Electrical Dist. Inc
Po Box 1990	3717 E. Main Ave.
Columbia Falls, MT 59912	Spokane, WA 99202
(406) 892-6258	(509) 535-8891
www.plumcreek.com	Fax: (509) 535-3745
	www.cedcareers.com
J.R. Simplot	Inland Empire Electrical Training
5501 Westshore Dr. NE	3210 E. Ferry
Moses Lake, WA 98837	Spokane, WA 99202
(509) 793-1139	(509) 534-0922
www.simplot.com/home/index.htm	
Community Colleges of Spokane Dist. Facilities	Spokane Public Schools
1810 N. Greene St MS 2014	2815 E. Garland
Spokane, Wa 99217	Spokane, WA 99208
(509) 533-8630	(509) 354-7136
Fax: (509) 533-8442	Fax: (509) 354-7160
www.ccs.spokane.edu	www.spokaneschools.org
Machinist/CNC Technology	
B & C Custom Mfg.	Avista Utilities
1514 E. Riverside	23675 N. Hatch Rd.
Spokane, WA 88202	Colbert, WA 99005
(509) 535-0049	
Fax: (509) 535-0910	
www.bccustommfg.com	
-	
Goodrich Aerospace	ASC Machine Tools
PO Box 19210	900 N. Fancher Rd.
Spokane, WA 99219	Spokane Valley, WA 99212
(509) 744-6013	(509) 534-6600
www.goodrich.com/portal/site/grcom/home	Fax: (509) 536-7658
-	http://www.ascmt.com/
Alturas Automation	Wagstaff Inc.
12575 W. Snowbird Ct	Paul May - Chief Executive Officer
Nine Mile Falls, WA 99026	3910 N. Flora
(509) 465-0666	Spokane Valley, WA 99216
www.alturasautomation.com	(509) 927-3317
	Fax (509)924-0214
	pmay@wagstaff.com

Mechanical Engineering	
Gonzaga University	Brooklyn Industries
10015 E. Holman Rd.	13224 E. 4th Ave.
Spokane Valley, WA 99206	Spokane, WA 99206
(509) 323-3556	(509) 468-2310 x111
Fax: (509) 323-5871	Fax: (509) 468-0284
www.gonzaga.edu	
Altek	Garco Building Systems
Michael Marzetta - President	
22819 E. Appleway Ave.	2714 S. Garfield Rd.
Liberty Lake, WA 99019	Airway Heights, WA 99001
(509) 924-3731	(509) 444-7131
Fax: (509) 924-2219	www.garcobuildings.com
mmarzetta@altek-inc.com	
Agilent Technologies	
24001 E. Mission Ave. MS 3WU	
Liberty Lake, WA 99019	
(509) 921-4674	
Fax: (509) 921-3700	
www.home.agilent.com	
Welding and Fabrication	
Heatercraft	Oxarc
6672 Boekel Rd.	4003 E. Broadway
Rathdrum, ID 83858	Spokane, WA 99220
(208) 687-4400	(509) 535-7794
www.heatercraft.com	Fax: (509) 532-3410
	www.oxarc.com
Brooklyn Iron Works	Mac's Metals
2401 E. Brooklyn	PO Box 6083
Spokane, WA 99217	Spokane Wa, 99217
(509) 468-2310	(509) 467-8456
Fax: (509) 468-0284	Fax: (509) 467-5898
www.biwinc.us	
PNW Ironworkers	Norco Inc.
16610 E. Euclid Ave.	6102 E. Trent Ave.
Spokane, WA 99216	Spokane Valley, WA 99212
(509) 922-3577	(509) 535-9808
Fax: (509) 922-3372	www.norco-inc.com
www.ironworkersnw.org	

NW WA/North Idaho Sheet Metal	KD Steel
7209 E. Trent STE. 1	7004 N. Altamont
Spokane, WA 99212	Spokane, WA 99217
(509) 928-5009	(509) 467-5309
Fax: (509) 928-3022	Fax: (509) 466-0403
	www.kdsteel.com
GREATER SPOKANE INCORPORATED MANUFACTURING MEMBERS	
Potlatch Corporation	Ecolite Manufacturing Company
601 W. First Ave STE. 1600	9919 E. Montgomery
Spokane, WA 99201	Spokane Valley, WA 99206
(509) 835-1500	(509) 922-8888
Fax: (509) 835-1560	Fax: (509) 922-8866
www.potlatchcorp.com	
Inland Empire Paper Co.	Inland Northwest Lighthouse
3320 N. Argonne	Mr. Kirk Adams President & CEO
Spokane, WA 99212	6405 N. Addison St./ 2501 S Plum
(509) 924-1911	Spokane, WA 99208/ Seattle, WA 98114
Fax: (509) 927-8461	(509) 487-0405/(206)322-4200
www.iepco.com	Fax: (509) 487-0435/(206)329-3397
	kadams@seattlelh.org
SprayCool	Metals Fabrication
2218 N. Molter Rd.	PO Box 19266
Liberty Lake, WA 99019	Spokane, WA 99219
(509) 232-2600	(509) 244-2909
Fax: (509) 441-1083	Fax: (509) 244-9642
www.spraycool.com	www.metalsfab.com/
Triumph Composite Systems	Millwood Manufacturing, LLC
Michael Mooney - Purchasing Manager	PO Box 11917
PO Box 19357	Spokane, WA 99211
Spokane, WA 99219	(509) 924-8974
(509) 623-8653	Fax: (509) 927-2841
Fax: (509) 623-8099	www.millwoodmfg.com
mmooney@triumphgroup.com	
Nott-Atwater - Division of LTI Flexible Products	SCAFCO
PO Box 13365	PO Box 11215
Spokane, WA 99213	Spokane, WA 99211
(509) 922-4522	(509) 343-9000
Fax: (509) 922-9820	Fax: (509) 535-9130
www.nottatwater.com	www.scafco.com

Schweitzer Engineering Labe	Wagstaff, Inc.
2350 NE Hopkins Ct	3910 N. Flora
Pullman, WA 99163	Spokane Valley, WA 99216
(509) 338-4397	(509) 922-1404
Fax: (509) 334-4938	Fax: (509) 924-0241
www.selinc.com	www.wagstaff.com
CXT	Goodrich Corporation - Aircraft Wheels & Brakes
3808 N. Sullivan	Joel Casebier - Director of Operations
Spokane, WA 99216	PO Box 19210
(509) 921-8766	Spokane, WA 99219-9210
Fax: (509) 928-8270	(509) 744-6008
www.cxtinc.com	Fax: (509) 624-1075
	joel.casebier@goodrich.com
Lloyd Industries, Inc.	Novation Inc.
Mr. John Crow - President	2616 N. Locust Rd.
3808 N. Sullivan Rd. #25E	Spokane, WA 99206
Spokane Valley, WA 99216	(509) 922-1912
(509) 468-8691 Ext. 101	Fax: (509) 921-9317
Fax: (509) 467-1381	
jcrow@lloydpanels.com	
Pohl Spring Works, Inc.	The Factory Company International, Inc.
6415 E. Nixon	Ms. Phyllis Best
Spokane Valley, WA 99212	PO Box 7287
(509) 535-3648	Spokane, WA 99207
Fax: (509) 536-0149	(509) 252-9290
www.pohlsprings.com	Fax: (509) 468-7100
	pbest@thefactorycompany.com
Cascade Windows	Haskins Steel Co., Inc.
Pat Collins - VP Operations	Craig Dias VP/general Manager
10507 E Montgomery Drive	PO Box 4219
Spokane Valley, WA 99206	Spokane, WA 99220
(509)789-3023	(509)535-0657
Fax: (509)922-7029	Fax: (509)535-8167
pcollins@cascaedwindows.com	cdias@haskinssteelinc.com
Hydrafab Northwest, Inc.	MacKay Manufacturing
Chris L. Henjum - President	Mr. Mike MacKay - President
PO Box 15292	10011 E. Montgomery Ave
Spokane Valley, WA 99215	Spokane, WA 99206
(509)535-0075	(509)922-7742

Fax: (509)535-3364	Fax: (509)922-8308
chrish@hydrfabnw.com	mmckay@mackaymfg.com
Apex Industries, Inc.	Proto Technologies, Inc.
Mr. C. Gordon Cudney - Vice President	Mrs. Rory Nay
3808 N. Sullivan, Bldg 14	22808 E. Appleway
Spokane Valley, WA 99216	Liberty Lake, WA 99019
(509)928-8450 Ext. 207	(509)891-4747
Fax: (509)928-8532	Fax: (509)921-8625
gcudney@apexlaser.com	rnay@prototech.com
Ground Force	Energy Doctors, A Thermotek Company
Mr. Ron Nilson - President/CEO	Mr. Chris Permann - President
E. 5650 Seltice Way	3605 S. Cook St.
Post Falls, ID	Spokane, WA 99223
(208)664-9291	(509)533-1428
Fax:	Fax: (509)534-4157
www.gfmfg.com	chris@energydoctors.org
Reliance Trailer	Intermountain Machine
Steve Retherford - Vice President/General Manager	Tim Rice - Marketing and Sales
3025 S Geiger Blvd	2819 N Martin
Spokane, WA 99224	Spokane, WA 99207
(509)455-8680	(509)475-5449
Fax: (509)747-4811	Fax: (509)482-0432 (Cell)
cthompson@reliancetrailer.com	tim_int-machine@comcast.net
Empire Bolt & Screw, Inc.	
Mr. Ron Stanley - President/CEO	
1501 E. Trent	
PO Box 3526	
Spokane, WA 99220-3526	
(509)534-0636 Fax: (509)534-1475	
rons@empirebolt.com	

Appendix J

Washington Educational Associations

Washington Association for Career and Technical Education
the state affiliate of ACTE www.wa-acte.org

WAVA – Administration

An Association of Career and Technical Education Administrators www.wavanet.org

WAAE – Agricultural Education

Washington Association of Agricultural Educators www.waae.wsu.edu

WSBEA – Business Education

Washington State Business Education Association www.wsbea.com

WADOT – Diversified Occupations

Washington Association of Diversified Occupations Teachers

FACSE – Family and Consumer Sciences

Family and Consumer Sciences Educators www.wafacse.org

CGCA – Career Guidance and Counseling

Career Guidance and Counseling Association www.wasts.org/node/16

WAME – Marketing Education

Washington Association of Marketing Education www.wame.biz

WITEA – Industrial Technology Education

Washington Industrial Technology Education Association www.witea.org

WASTS – Skilled & Technical Sciences

Washington Association of Skilled & Technical Sciences www.wasts.org

HSCEW – Health Science Career

Health Science Career Educators of Washington www.wasts.org/node/8