Leadership Team

Dr. Sue Kane, Co-Executive Director
Wenatchee Valley College [Higher Education]
Backbone Organization

Jenny Rojanasthien, Co-Executive Director
Greater Wenatchee Area Technology Alliance
[Community Based Organization]

Ron Brown, Director of Instructional Technology,
Wenatchee School District [Education]

Jeff Bullock, STEM Director
North Central Educational Service District [Education]

Dennis Conger, Director of Career and Technical Education,
Wenatchee School District [Education]

Maria Guerra, GEAR-UP Director, Eastmont School District [Education]

Diana Haglund, Wenatchee Learns Coordinator
Wenatchee School District [Education]

Jeremy Jordan, Chelan County Public Utility District
[STEM Business and Industry]

Steve King, Director of Community & Economic Development,
City of Wenatchee [Government]

Mechelle LaLanne, Regional Science Coordinator
North Central Educational Service District [Education]

Mark Marney, Executive Director of Secondary Education
Eastmont School District [Education]

Bob Martin, CTE-STEM
Cashmere School District [Education]

Pete Phillips, Executive Director Technology Services
North Central Educational Service District [Education]

Dr. Carli Schifner, Vice President of Instruction
Wenatchee Valley College [Education]

Advisory Team

Arlene Abbott
Academy Coordinator for Polar Star Consulting
and Foundation Executive Director for Lake Chelan Community Hospital Foundation

Patty Betzing
STEM Coordinator, Eastmont School District

Tony Boyle
Principal, Cashmere High School

Susie Chavez
TRIO, Wenatchee Valley College

Garn Christensen
Superintendent, Eastmont School District

Ron Criddlebaugh
Economic Development Manager,
Port of Douglas County

Luke Ellington
Teen Services Manager, North Central Regional Library

Jill Fineis
Science Coordinator, Wenatchee School District

Brian Flones
Superintendent, Wenatchee School District

Debbie Gallaher
Visitor Services Manager, Chelan County PUD

Michelle Gedrose
Continuing Education Director, Wenatchee Valley College

Zack Jacobson
Instructional Technology Program Coordinator,
Wenatchee Valley College

Glenn Johnson
Superintendent, Cashmere School District

Travis Kane, 5th Grade Science Teacher,
Eastmont School District

Lorna Klemanski
Chelan County Public Utility District

Craig Larsen
Business Development Director,
Port of Chelan County

Stacy Luckensmeyer, Business & Industry Liaison, Wenatchee Valley College

Steve Maher, Project Coordinator,
Our Valley What’s Next

Rich McBride, Superintendent, North Central Education Service District

Linda McKay, Assist. Sup of Teaching and Learning, North Central Education Service District

Dr. Jim Richardson
President, Wenatchee Valley College

Sara Rolfs, President, Washington Elementary School Parent Teacher Student Association

Shiloh Schauer, Executive Director, Wenatchee Chamber of Commerce

Jay Smith, Owner, Express Employment Professionals

Spencer Taylor, Executive Director of Elementary Education, Eastmont School District

Dr. Tony Thomas, Dean of Liberal Arts & Sciences, Wenatchee Valley College

James Wade, College Assistance Migrant Program (CAMP) STEM Specialist, Wenatchee Valley College

Alan Walker, Executive Director, United Way of Chelan and Douglas Counties

Allison Williams
Executive Services Director, City of Wenatchee

Zach Williams
Director of Human Resources, Stemilt

Rufus Woods
Publisher, Wenatchee World
Business Plan Outline

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Science, Technology, Engineering and Mathematics (STEM) education is at the center of nationwide efforts to provide our students with 21st century skills. Critical thinking, discovery, innovation and problem solving are the keys to success in tomorrow’s economy and STEM related job opportunities are growing at a rapid rate. The President’s Council of Advisors on Science and Technology have reported that over the next ten years, the American workforce will need approximately 1 million more STEM professionals than the U.S. will produce at current rates.¹ A Department of Labor study from 2008 found that there are nearly 340,000 STEM occupations in Washington State and it is predicted that within this decade there will be nearly 12,000 more annual job openings in STEM occupations. And while the STEM job market is ever-expanding, there is also a wealth of support for the case that fluency in STEM subjects is vitally important for every student; regardless of their eventual pursuit of a STEM vocation.

The Apple STEM Network will take every opportunity to collaboratively provide resources and infrastructure through the coordinated efforts of K-12 educators, business partners, nonprofits, higher education institutes and community leaders to promote STEM literacy with a commitment to support and empower educators and our community to foster a deep appreciation of the utility of STEM fluency in each and every student.

We also recognize that the Wenatchee Valley is home to many underrepresented populations in STEM professions; therefore, great emphasis will be placed on equity connecting ALL students to STEM learning experiences, early and often, with hands-on experiences to spark interest and development opportunities and open doors to new career paths for these students who will might someday prove to be an invaluable perspective as part of a thriving STEM profession.

(1) The President’s Council of Advisors on Science and Technology, Working Group Report
Our Vision

Through shared vision and enthusiasm, the Apple STEM Network will clear a pathway and secure resources for students to build STEM fluency, thereby opening the door to new opportunities and careers in our valley and stimulating the economic development of the greater Wenatchee area.

Our Region

There are three school districts currently invested in the development of the Apple STEM Network: the Wenatchee and Cashmere School Districts of Chelan County and the Eastmont School District of Douglas County.

Key Definitions

STEM - Science, Technology, Engineering and Math

STEM education is an approach to learning that removes the traditional barriers separating science, technology, engineering, and mathematics and integrates them into real-world problem solving and relevant learning experiences for students.

STEM in itself is not a curriculum, but rather a way of organizing and delivering instruction by weaving the four disciplines together in intentional ways. Rather than adding two new subjects to the curriculum, the engineering and technology practices are intentionally woven into existing math and science lessons in ways that engage students and help them master 21st century skills.


STEM literacy means the ability to identify, apply, and integrate concepts from science, technology, engineering, and mathematics to understand complex problems and to innovate to solve them. STEM literacy is achieved when a student is able to apply his or her understanding of how the world works within and across the four interrelated STEM disciplines to improve the social, economic, and environmental conditions of the local and global community.” RCW 28A.188.010
Our Strategy

Through collective efforts, the Apple STEM Network aims to:

- **OBJECTIVE 1:** INCREASE STEM AWARENESS AND SUPPORT - in the community promoting STEM literacy for all, defining roles and clearly outlining pathways to local STEM careers;

- **OBJECTIVE 2:** PROMOTE & INCREASE PARTICIPATION IN PERSONALIZED & PROJECT-BASED LEARNING - spark interest in STEM through authentic field experiences, competitive challenges and personalized career exploration opportunities for students including apprenticeships, internships and mentorships with local industry and community partners;

- **OBJECTIVE 3:** FORTIFY TRANSITIONS - promote a culture of support with family education; focusing on mentorship for underrepresented and first generation college-bound students to increase their entrance and success in STEM studies and lead to the pursuit of STEM careers;

- **OBJECTIVE 4:** SUPPORT TEACHERS - encourage teachers to continue developing expertise in integrating technology into daily educational experiences using teaching practices and methodologies that include project based learning opportunities, explore professional development options, and engage community and business partners to drive changes through focused support;

- **OBJECTIVE 5:** SEEK INDUSTRY & COMMUNITY INPUT - establish and maintain relationships with local community partners and STEM professionals to actively procure feedback, develop career pathways for students and promote economic development opportunities through our regional employers.
For Our Students

- Our students are not only unaware of our regional wealth of STEM career opportunities, but also how to navigate the pathway to these fields.
- There are equity of access issues to the fantastic STEM programs that are taking root in our community.
- Some schools are prepared to offer students hands-on project based and field STEM learning experiences, others do not have the resources.
- Many of the regional STEM activities are outside of the school day and highly impacted students have limited access to these.
- Regional access to computer science courses is limited and students are not engaged.
- Students are being lost in the transitions between high school and college and the majority of those who enter programs geared towards STEM disciplines to not persist.

Our Student Profile

<table>
<thead>
<tr>
<th>School District</th>
<th>Total School Enrollment</th>
<th>Free and Reduced Lunch</th>
<th>High School Graduation Rate</th>
<th>Class Size</th>
<th>Enrolled in College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastmont</td>
<td>5,848</td>
<td>57.7%</td>
<td>78.6%</td>
<td>353</td>
<td>58%</td>
</tr>
<tr>
<td>Wenatchee</td>
<td>7,934</td>
<td>61.3%</td>
<td>67.9%</td>
<td>430</td>
<td>63-69%</td>
</tr>
<tr>
<td>Cashmere</td>
<td>1,546</td>
<td>49.0%</td>
<td>84.0%</td>
<td>88</td>
<td>60-64%</td>
</tr>
<tr>
<td>Statewide</td>
<td>1,070,756</td>
<td>62%</td>
<td>77.2%</td>
<td>65,881</td>
<td>61%</td>
</tr>
</tbody>
</table>

The data presented by the Education and Research Data Center for the 2015 graduating classes for the Wenatchee, Eastmont and Cashmere School District students demonstrate high school graduation rates that exceed the statewide average in the Eastmont and Cashmere districts, but fall short in the largest of the three districts, Wenatchee. All three districts are similar to the state average in that around two-thirds of high school graduates declare plans to matriculate to a two-year or four-year college program immediately following high school graduation.

Wenatchee Valley College serves as the regional gateway for higher education and technical programs. The WVC office of institutional effectiveness reports that 37% of students completed a two-year program or transfer degree within three years but this number is decreased to 26% for students who identify as first generation or Hispanic.

All three school districts serve nearly two-fold or greater the state average (21.7%) of Hispanic students, with Eastmont School District at 44.1% Hispanic students, Wenatchee at 48.9% Hispanic students and Cashmere at 39.1% Hispanic Students. Likewise, 49% of the students enrolled at Wenatchee Valley College are students of color and the majority of these, 42% of the student body, are Hispanic.
For Our Community

In a community-wide survey in 2013, conducted by Wenatchee Learns, more than 4000 citizens, students, and staff in Wenatchee were polled to engage the community in the educational culture. Each percentage reports the proportion of each group surveyed that indicated they were either “supportive” or “excited” about the prompt. Collectively, their responses voiced a concern and a need for significant changes to the way that education has been approached in our community and they voiced specific needs to integrate hands-on project-based learning, mentorship, technology integration, and community partnerships.

In 2016, the civic strategic planning initiative, Our Valley What’s Next, polled the greater Wenatchee area residents from all sectors about their priorities for educational reforms in our region. The development of additional STEM programs, support for the maker’s spaces, and the establishment of a technology institute for the region were each identified as top priorities.

The AppleSTEM Network stakeholders recognize the opportunity that we have to respond to our community voices and take advantage of their enthusiasm to take part in the educational process. In hearing our community voice, we are prioritizing STEM fluency and project-based learning opportunities for students. We are devoting resources to recruit leaders, provide professional learning for educators and streamline processes for community partners to take an active role in STEM education.

Our Community Voice

<table>
<thead>
<tr>
<th></th>
<th>Support Hands-on Project Based Learning</th>
<th>Skilled Volunteering Opportunities</th>
<th>Citizens Mentoring Students</th>
<th>Partnering with Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Members</td>
<td>91.7%</td>
<td>89.1%</td>
<td>82.2%</td>
<td>84.4%</td>
</tr>
<tr>
<td>Teachers</td>
<td>89.5%</td>
<td>88.2%</td>
<td>87.8%</td>
<td>91.8%</td>
</tr>
<tr>
<td>Students</td>
<td>82%</td>
<td>71.3%</td>
<td>58.5%</td>
<td>63.9%</td>
</tr>
</tbody>
</table>

Our community wants to take an active role in the development of students and therein, the upcoming workforce.
For Our Workforce/Economy

The cities of Wenatchee, East Wenatchee and Cashmere are home to just over 50,000 people. The cities have a long history in agriculture. Wenatchee was even dubbed, “The Apple Capital of the World” as agriculture has led the local economy for more than a century; but, manufacturing & trade, transportation, warehousing, and utilities industries also have a large role in our local economy. In Douglas and Chelan Counties, these sectors provide over 24,000 jobs. The technological increase in mechanization of agriculture from the field to the processing lines is significant and will only continue to grow. Sustainability and environmental impact are critical features that will require STEM literacy and education to incorporate and implement in the greater Wenatchee valley in the years to come.[5]

During 2015 in Chelan & Douglas Counties combined, the top-five employing sectors were:
- 24.5% in Agriculture, increasing from 24.2% since 2005.
- 16.0% in Government, decreasing from 17.5% since 2005.
- 11.9% in Health Care and Social Assistance, decreasing from 10.5% since 2005.
- 11.0% in Retail Trade, decreasing from 11.7% since 2005.
- 9.5% in Accommodation & Food Services, increasing from 7.3% since 2005.

By comparison during 2015 in Washington State, the top-five employing sectors were:
- 3.3% in Agriculture, increasing from 3.0% since 2005.
- 17.1% in Government, decreasing from 18.1% since 2005.
- 12.5% in Health Care and Social Assistance, increasing from 10.1% since 2005.
- 11.2% in Retail Trade, remaining unchanged from 2005.
- 8.2% in Accommodation & Food Services, increasing from 7.8% since 2005.

More than a third of our current job market tied up in STEM related fields, priority in STEM education and fluency is critical for the economic vitality of the greater Wenatchee area.
Needs Assessment - Workforce

Steve King, Director of Community and Economic Development for the City of Wenatchee, cites many specific needs for engineers in our area; “Wenatchee National Forest who needs engineers and data processing folks (GIS), local governments who all operate and design infrastructure, PUDs (Chelan, Douglas, Okanogan, Grant) who have hydropower, fish hatcheries, and distribution systems all needing engineers and engineering techs to run and operate their facilities.”

In addition to these, the greater Wenatchee Valley is home to many regional, corporate, government and local STEM industry employers like: Pacific Aerospace & Electronics, Phillipi Fruit, Auvil Fruit, Stemilt, ConAgra Foods, Confluence Health, Washington State University Tree Fruit Extension, Yahoo, J.R Simplot, Alpine Air, Van Doren, Cashmere Manufacturing, Twisted Widget, PACE Engineers, the Bureau of Land Management, Chelan and Douglas County Public Utility District’s, and the Ports of Douglas and Chelan County, among several others, who will rely on the pool of STEM literate citizens in coming years to maintain their workforce.

There are also STEM industry opportunities still emerging in our area. Plug-In North Central Washington, a non-profit subsidiary of the North Central Economic Development District, is a great example of emerging opportunities in STEM. Plug-In NCW, first pioneered to create a fleet of plug-in hybrid electric vehicles (PHEV) for the department of energy and they continue to serve as an advocate for vehicle electrification. The visionary work of this organization also helped create the nation’s first EV friendly scenic drive in the Pacific Northwest Cascade Loop in the last year and their work seems to be on the forefront of bringing another important STEM industry to our local economy.

Our Opportunity

In consideration of our students, community and local economy, the foundational vision for our regional STEM Network is clear. We are taking hold of a unique opportunity to work collectively to align resources to better serve these key constituencies, enhance our current projects, and set our vision higher than we imagined independently. Our community has shared with us that they want to see changes in our educational process and we need to leverage the combined experience and knowledge of professionals, teachers, and regional STEM employers to inform more of our community about the value of STEM literacy and create a clear pathway of training and employment for the students and residents of the region.

We have used the comprehensive planning process to dive into challenging conversations purposefully, and to build solid partnerships between local industries, between educational partners and industries, between early-learning, K-12 and higher education, and between community partners and educators and we look forward to the promising road ahead.

STEM Champions
STEM Champions

STEM Assets

In January of 2016 the Apple STEM Network began a dialogue to map the STEM educational assets in our region. We were thrilled to find such a wealth of passion, resources, programs and plans already underway. Here are just a few of the highlights of STEM programs and resources our partners brought to the table:

- Engineering is Elementary
- WSD Wenatchee Landforms science field experience
- WSD Saddle Rock science field experience
- Salmon the Classroom
- Technical Student Association - STEM
- Hour of Code
- Summer Adventure camps at the Museum
- STEAM Push-Ins
- Engineering Night Challenges
- All District STEM Competition Challenges
- Pizza, Pop and Power Tools
- Project Lead the Way
- MOSAIC
- GEAR UP
- Make After School
- Mini Makers Faire
- Mobile Maker’s Spaces
- FWEE Summer Academy
- STEM Design Challenges
- First Robotics
- Lego League Robotics
- Trailhead Field Learning
- Fire Science PProgram
- Business After School
- Wenatchee Learns Connect
- Vex Robotics Team
- River of Power
- FFA - Agriculture
- STEM Student’s of Cashmere Showcase
- Ecology Integrity Monitoring - Citizen Science Project
- Watershed Facilitator Monitoring Educator Training Program
- Science Leadership Alliance Curriculum Cooperative
- Math Leadership Alliance Cooperative
- TEALS
- IT Academy
- WVC-TRIO
- WVC-CAMP
- 2 Associate of Science Transfer Degrees
- 21+ Technical STEM Certificated Programs
- 2 STEM Bachelor of Arts Programs (Nursing & Engineering Technologist)
STEM Champions - Partner Profile

Wenatchee Learns

In 2011, the Wenatchee School District embarked on a strategic planning process and community conversation called Wenatchee Learns. Over 4,000 members of the community helped to create a shared vision of personalized learning for the District. From that process several themes emerged that were then identified as guiding principles for the Wenatchee School District as it seeks to create a structure and local culture that embraces personalized learning.

The community wanted educators to provide a more personal approach to the learning experience, expand the role of “teacher” to include not only school-based educators, but also parents, volunteers, and other partners in the community who can mentor and support learning, and use more technology as a bridge to connect all of the components of a personalized learning model.

At the core, there are actually several outcomes of the Wenatchee Learns community conversation which directly correlate with the elements needed to create the Apple STEM Network. The swell of community feedback from these conversations advocated for the need to develop into resources for students. Career exploration, STEM literacy, project based learning, mentorship and business partnerships all ranked highest among students, staff, community and parents.

To take action on these findings, and facilitate and nurture community partnerships, the Wenatchee School District launched the Wenatchee Learns Connect Partnership Center. This bold move created a physical school district presence in the heart of downtown Wenatchee. The mission of the partnership center is to act as a conduit to for connecting volunteers, parents and business partners with Wenatchee Public Schools. Using their online partner portal over 2,200 volunteers and 120 businesses have been connected since launching in August 2014. Wenatchee Learns Connect has created capacity for Wenatchee Schools to mobilize volunteers, community groups, and business to support education. In November of 2015, Wenatchee Learns Connect moved to the Wenatchee Valley Chamber of Commerce and shares collaborative space and connections in an effort to increase business partnerships, career connected learning events and work-based learning opportunities.

Through a grant from OSPI and Employment Security, called Career Readiness for a Working Washington, Wenatchee Learns Connect in collaboration with Wenatchee School District Career and Technical Education created an innovative online college and career readiness course that blends online learning with face-to-face applied learning experiences for 8-12 grade students. Close to 2,500 students are enrolled in this course and are exploring careers using Career Cruising. In addition they are able to view businesses that offer work-based, project-based and service learning opportunities in a variety of industries. Wenatchee Learns Connect also coordinates the North Central Washington College and Career Expo. This is the premier business-education for the Wenatchee area and brings together over 88 exhibitors and over 3,000 9-12 grade students from area school districts.

The success of the Wenatchee Learns initiative and subsequent partnerships that have been developed demonstrates the ability of the community to collaborate and create a shared vision for the future of learning.
The Greater Wenatchee Area Technology Alliance (GWATA)

GWATA is a 501(c)3 nonprofit serving Chelan, Douglas, Grant and Okanogan counties with a mission to bring people and technology resources together to create a thriving community. Founded in 2000, the collective efforts of the GWATA board have maintained a well-known and respected voice in our community. GWATA has been steadily funded through economic development agreements, sponsorship, membership dues and donations.

The core focuses of GWATA are to support technology, entrepreneurship, and STEM education in North Central Washington (NCW). GWATA works to advance these three focuses by hosting and supporting educational events on a variety of topics. On average, GWATA hosts 1-2 events per month with three major events per year. Open to both the public and GWATA members, these events serve over 100 business members and have the attendance of over 3,000 individuals annually. In addition, GWATA reaches audiences in NCW through an active role with partner organizations throughout the region.

GWATA maintains a diverse Board of Directors comprised of community leaders who have backgrounds in technology, business, education, agriculture, marketing, telecom and the public sector. GWATA’s Executive Director, Jenny Rojanasthien, started with the organization in the Summer of 2015 and has since helped champion the formation of the Apple STEM Network. GWATA Board of Directors and GWATA Members share a vested interest in the Apple STEM Network. In addition, several GWATA Board Members serve dual roles on the Apple STEM Network Leadership team. Jenny Rojanathien will co-direct the implementation of the Apple STEM Network Business plan along with Dr. Sue Kane.

Innovator Awards
A point of pride for our community is the Annual Innovator Awards Luncheon. Hosted by GWATA for 16 years, the Innovator Awards Luncheon recognizes businesses, educators, and students for contributions to innovation and STEM. The ‘Future Technology Leader’ award is given to one K-12 student and one Post-Secondary student for accomplishments with innovative STEM projects. The Innovative Use of Technology in the Classroom is awarded to one educator for going beyond curriculum to engage with students in the classroom. GWATA uses luncheon event to highlight both the winners and the nominees to the community. In 2016, the Apple STEM Network sponsored tickets for over 30 students to attend the Innovator Award Luncheon as an opportunity for them to engage with the business community and continue to inspire them towards STEM opportunities.

NCW Tech & STEM Showcase
Originally, the project of one school district in the Apple STEM Network (Wenatchee School District) - the NCW Tech and STEM Showcase was founded in 2013 to bring awareness to educational technology and STEM. As it continued to grow in popularity, exhibitors showcased to over 400 community members supporting Wenatchee students/educators. In 2016, GWATA took over this event with the charge to grow it into a regional event with more community awareness. On Saturday, May 14th, 2016 GWATA hosted NCW Tech & STEM Showcase at Pybus Public Market. At the event, 90 students/educators from five different school districts presented their projects to the public. This event is the only STEM Showcase in the region and GWATA looks forward to continuing to collaborate with the Apple STEM Network to grow this important event.
The Wenatchee Maker’s Movement

The Wenatchee Maker’s Movement is a point of pride in our community and highlights the community commitment to support emerging student leaders. The concept of co-working and makerspaces has been a growing movement in the nation as we realize that creativity and innovation is honored when people find their passion and work in an environment that supports the diverse talents of individuals. Sam Monson, an eighth grader from Wenatchee, courageously approached civic leaders and prompted discussion about developing a makerspace in Wenatchee. He developed a wonderful video illustrating what a Makerspace is and why Wenatchee needed one.[1] This got the attention of the City of Wenatchee and other organizations such as The North Central Regional Library District who developed a mobile makerspace for Sam and other makers. Following this, Ethan Toth, a 17 year-old Wenatchee High School student approached the city with a proposal to put on the first Mini Maker’s Faire in Wenatchee as part of his senior project. These students are visionary and specifically have the goal of doing something amazing for the Community and to support the Makers movement.

Inspired by these two youths, the city agreed to help support this effort in Wenatchee. Steve King, with the City of Wenatchee notes that “We recognized that the maker movement is also about workforce development and the struggle employers have in finding qualified employees who are technically savvy and are creative problem solvers.” With the support of many local organizations including the City of Wenatchee, GWATA, WVC and many of the core leaders planning the Apple STEM Network, the first Mini Maker’s Faire was held October 3rd, 2015. The Wenatchee Mini Maker Faire, which was composed of maker projects, performers, student projects, and organizations revealing ideas of the future was attended by over 1,200. The next Wenatchee Mini Maker Faire, which remains a student-lead initiation through the support of GWATA, will be on October 29th, 2016.

The Wenatchee Maker’s Movement and the commitment to see the boys’ vision to fruition also caught the attention of regional and then national leaders. In 2015, GWATA recognized Ethan Toth as their Future Technology Leader of the Year. Ethan was invited to speak at the Whitehouse Makers Forum and for Make Magazine. As a result of this student lead passion for making, several Wenatchee leaders were also invited to attend a roundtable at the Whitehouse in March of 2016. It was an amazing discussion with representatives from all over the Country. It was noted how remarkable it was that Wenatchee was by far the smallest community and yet was taking up the challenge and doings some amazing things to support our youngest innovators.

[1] https://www.youtube.com/watch?v=bi4xb1bbZYc
Director Roles & Responsibilities

The Director of the Apple STEM Network will be responsible for providing supervision, oversight, budget management and direct service to the Apple STEM Network. Duties include ensuring that the goals and objectives required by the funding sources are met and that all data and records are maintained and submitted as required, update sharepoint, oversee social media and marketing and secure funding through grant writing, collaborative partnerships, and/or other development methods.

Leadership Team Responsibilities

1. Facilitate the development of a community vision, based on an identification of core community beliefs.
2. Learn about the STEM Framework for Action and how it applies to community planning.
3. Attend Network planning meetings, at minimum once a month, or select an alternate that can represent your organization effectively, attend in your place, and communicate back to your organization.
4. Serve as community ambassadors for the STEM Initiative.
5. Conduct the community assessment of areas for action across K-20 age groups.
6. Work with key leaders and community stakeholder groups to prioritize power indicators and high impact strategies.
7. Conduct the community resources assessment, and identify gaps in the current response to priorities.
8. Identify and investigate high impact programs, policies and practices to fill gaps.
9. Design a 3- to 5-year Network Business Plan with goals for measureable outcomes.
10. Develop an evaluation plan to measure the defined outcomes.
11. Work with key leaders to identify and secure resources to support the Network Business Plan.
12. Facilitate the implementation and evaluation of the Network Business Plan.
13. Provide a timely response to requests for information.
14. Communicate regularly with key leaders and the community.
15. Provide a conduit of information to your organization/school/business on Network Updates, progress and support needs. Report feedback from your organization to the network.
16. Work with key leaders and community members to sustain commitment to the community vision.
17. Reassess areas for action.
Definition of Roles & Governance Structure

Washington Stem Role

The Apple STEM Network is part of a statewide effort supported by Washington STEM. Washington STEM will provide guidance, some degree of funding support, mutually reinforcing activities across regional networks and leadership in efforts to define and promote the importance of STEM education and STEM career paths across the state.

Governance Structure

- The Apple STEM Network Executive Director seat will be shared equally between the backbone organization (Wenatchee Valley College) and the Greater Wenatchee Area Technology Alliance (GWATA). This position will be responsible for day-to-day operations for the network. The Executive Director/s will report to the leadership board.

- The Director/s will convene monthly meetings of the leadership team to implement the business plan.

- Sub committees will be assembled as needed for various strategies and objectives. A large body of network advisors will serve upon need for council in their area of expertise and interest. Sub-committees will be assembled as needed and will report back to the leadership body.

The leadership team will have representation from all three school districts, at least one higher ed faculty member, at least one representative from the North Central Washington Educational Service District, at least one government representative, one community based organization, and one business partner.

Apple Stem Network Leadership

- **Wenatchee School District**
  - Dennis Conger  
  - Diana Haglund  
  - Ron Brown

- **Eastmont School District**
  - Mark Marney  
  - Maria Guerra

- **Cashmere School District**
  - Bob Martin

- **North Central Educational Service District**
  - Mechelle LaLanne  
  - Pete Phillips

- **Business/Industry**
  - Jeremy Jordan  
  - Chelan County PUD

- **Government**
  - Steve King  
  - City of Wenatchee

- **Community Based Organization**
  - Jenny Rojanasthien  
  - GWATA

- **Higher Education**
  - Carli Schifner  
  - WVC  
  - Sue Kane  
  - WVC
Our Plan for Working Together

In December 2015, The Apple STEM Network received a planning grant through Washington STEM to build the foundation for a collective-impact network in the greater Wenatchee area that would align resources and unite us in common goals. The planning process took dozens of educators, civic leaders, community based organizations and private partners through a critical evaluation of our assets, needs and opportunities to make the greatest impact in our region. These are the actions that we will take over the next three years to advance our goals.

Objective 1
Increase Stem Awareness and Support
- in the community promoting STEM literacy for all, defining roles and clearly outlining pathways to local STEM careers;

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Actions</th>
<th>Lead</th>
<th>When</th>
</tr>
</thead>
</table>
| **1.1** Establish the Apple STEM Network as a community starting place for STEM information. | • Build a website to serve as a landing page for promoting partner events, STEM resources and conduit back to statewide goals and activities.  
• Develop a multifaceted regional marketing plan.  
• Divide audiences and determine appropriate venues of distributing information to each; i.e. businesses, community, educators, general public etc.  
• Presence or Sponsorship at the MiniMaker’s Faire (Oct.), NCW College and Career Expo (Nov. 1st), the Career Expo (Jan), GWATA Innovator Awards (Mar) and the NCW Tech & STEM Showcase (May). | Network | Year 1 |
| **1.2** Support the development of ‘STEM Identity’ for businesses, educators and students in our region. (Get students to recognize a role for themselves, businesses to identify STEM skillsets in their workforce, HS counselors to see and communicate the career possibilities for students). | • Campaign with Local STEM Professional Profiles.  
• HS counselor workshop  
• Wenatchee Valley Chamber & Wenatchee Learns - Business Afterschool. | GWATA NCESD WVC WL-WSD Network | Year 1  
Year 2-3  
Year 1 |
| **1.3** Convene resources to support the development of culturally competent marketing and reach to our Latino community. | • Connect with resources to explore the best means for building STEM awareness and identity in Latino students.  
• Ensure that profiles, marketing materials and website are accessible in Spanish and English and that the message is culturally competent. | Network | Year 1-3 |
### Objective 2

**Promote & Increase Participation In Personalized & Project-Based Learning** - Spark interest in STEM through authentic field experiences, competitive challenges and personalized career exploration opportunities for students including apprenticeships, internships and mentorships with local industry and community partners;

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</table>
| **2.1 Promote and increase participation in authentic field experiences.** | • Supporting local school district’s current STEM field experiences.  
• Celebrate and showcase field experiences.  
• Share field experiences through media.  
• Engage community partners in field experiences.  
• Identify and support teacher training opportunities. | NCESD WSD. ESD CSD Network* | Year 1-3 |
| **2.2 Promote and increase participation in competitive challenges.** | • Identify and celebrate staff already implementing competitive challenges.  
• Create a database of available competitive challenges.  
• Increase public engagement in competitive challenges through exhibition and events.  
• Procure business partnerships to support through in-kind and financial support.  
• Create a platform for sharing online to document and share. | NCESD WSD. ESD Network* | Year 1-3 |
| **2.3 Promote and increase participation in personalized career exploration opportunities for students including apprenticeships, internships and mentorships with local industry and community partners.** | • Identify STEM industry and community partners that could host students through work-based learning (Internships, apprenticeships and mentorships).  
• Connect with workforce development council to identify businesses.  
• Identify barriers such as HIPPA, FERPA, and employment laws.  
• Create a platform for sharing willing partner contact information.  
• Collaborate with membership based organization such as GWATA, WV Chamber of Commerce and AVHRA etc.  
• Collaborate with Youth United to document voluntary WBL hours. | NCESD WL-WSD* ESD CSD Chelan PUD Network | Year 1-3 |
### Objective 3

**Fortify Transitions** - promote a culture of support with family education; focusing on mentorship for underrepresented and first generation college-bound students to increase their entrance and success in STEM studies and lead to the pursuit of STEM careers;

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</table>
| **3.1 Reinforce existing student support programs by encouraging regular interactions and mutually reinforcing activities.** | • Connect leadership and representation from student success programs from K-12 and higher education partners.  
• Provide opportunities for peer support where possible.  
• Share data between programs where possible.  
• Continue to proactively seek funding for student support programs for K-12 and higher education. | ESD  
WSD  
CSD  
WVC* | Year 1 |
| **3.2 Academically prepare students to succeed in postsecondary education.** | • Align high school math course content with community college requirements.  
• Promote Compass (or new assessment) preparation course to correctly place students in math sequence.  
• Explore the option of fast-track or alternative pathway math to jumpstart students in math.  
• Explore offering a College 101 course in Spanish and in English for parents and students to help navigate the application process, understanding timelines and registration questions.  
• Create a guide for HS counselors to help students and parents understand course offerings each term at WVC.  
• Explore other community models for transition to postsecondary education support.  
• Encourage the development of STEM content into High Schools. | ESD  
CSD  
WSD  
WVC*  
NCESD | Year 1-3 |
### Objective 3 - Continued

**Fortify Transitions** - promote a culture of support with family education; focusing on mentorship for underrepresented and first generation college-bound students to increase their entrance and success in STEM studies and lead to the pursuit of STEM careers;

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| **3.3 Support students with college access plans including scholarship and financial aid resources.** | • Coordinate and improve support and attendance for the NCW College and Career Expo.  
• Create a college access committee that includes representation from three districts and WVC to coordinate FAFSA, Scholarship applications, general application preparation, etc.  
• Promote applications to the Washington State Opportunity Scholarship.  
• Explore multiple options for increasing participation in college access workshops (potential options - changing locations, time, bundling with other heavily attended events) considering cultural values and language. | ESD CSD WSD WVC* | Year 1 |
| **3.4 Support student retention efforts and clear barriers for re-entry into educational pathways.** | • Work to establish milestones for pathways that have stand-alone value, certificate programs and credentials that hold value in the workforce as students’ progress through STEM curriculum  
• Coordinate retention efforts with Rigo Garcia (WVC completion coach) to establish a mentorship or intervention process for struggling students in STEM pathways. | WVC* | Year 2-3 |
| **3.5 Connect students to a STEM mentor in the discipline of choice.** | • Work with community business partners, GWATA, Wenatchee Learns, the Chamber of Commerce and the economic development council to connect students with a mentor in the field that they are interested in pursuing. | WVC* | Year 2-3 |
**Objective 4**

**Support Teachers** - encourage teachers to continue integrating technology and project based learning into daily educational experiences, explore professional learning options and engage community and business partners to support teachers;

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| **4.1 Engage community in supporting and celebrating STEM educators.** | • Support the NCW Tech & STEM Showcase to highlight innovative educators.  
• Support the GWATA Innovator Awards.  
• Support the Wenatchee Mini-Maker faire with attendance/booth and possibly supporting staff/students who present their projects. | GWATA* Network | Year 1 |
| **4.2 Support educators with ‘accessible’ and high-impact/high pay-off professional learning opportunities that integrate STEM disciplines and emphasize project based learning.** | • Increase the number of teachers, childcare providers, and community-based organization staff at all levels participating in program, school, district, or regional STEM training to support STEM program implementation  
• Find and engage programs outside of the region for educators and community partners to observe and evaluate to bring back ideas and experience  
• Expand effective professional development opportunities in STEM  
• Through coordination with research faculty at WVC, CWU, WSU and community partners, identify opportunities for K-12 teachers to have authentic research experiences/externships working on active projects  
• Support the development and offering of non-traditional professional learning opportunities. | NCESD* WVC ESD WSD CSD Network | Year 2-3 |
| **4.3 Connect educators with mentors to promote long-term success (maintain Professional learning).** | • Convene professional learning community (PLC); cross disciplinary, including Higher Ed faculty and K-12, and community based educators/mentors (i.e. conservation districts, parks, etc.) to meet and share STEM success data and champion ideas that are working  
• Find a platform to connect local educators with STEM mentors successfully implementing STEM practices around the state. | WVC GWATA NCESD* Network | Year 2-3 |
| **4.4 Improve attendance and participation in STEM professional learning opportunities.** | • Hold an annual evaluation of STEM professional learning opportunities to identify gaps and problem areas.  
• Publish regular communication detailing the upcoming STEM professional development opportunities for K12/Higher Ed educators, parents, interested community members.  
• Provide representative feedback to the NCESD for strategic planning for the development of professional development. | NCESD* Network | Year 2-3 |
Objective 5
Seek Industry & Community Input - establish and maintain relationships with local community partners and STEM professionals to actively procure feedback, develop career pathways for students and promote economic development opportunities through our regional employers.

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</table>
| **5.1 Seek understanding of current business structure and inventory of STEM employment in the community.** (What are the hiring needs/employment statistics from local employers?) | • Identify key regional employers in STEM fields; i.e. Ag-STEM, health care, biotech, computer science, engineering, etc.  
• Convene open meetings for STEM employers to share feedback.  
• Utilize Chelan Douglas Trends resources to mine data.  
• Identify clusters in workforce.  
• Highlight future workforce needs. | Wenatchee Valley Chamber  
City of Wenatchee  
Chelan PUD  
Port of Chelan  
GWATA* | Year 1-3 |
| **5.2 Profile Career Pathways.** | • Engage employers to profile roles at all levels of education.  
• Help employers develop tools/opportunities when connecting with students | GWATA*  
Network | Year 1-3 |
| **5.3 Promote Economic Development Opportunities.** | • Support economic development opportunities through education and training programs to meet the needs of our regional employers for a skilled workforce.  
• Guide and inform the regional economic development plan, Our Valley What’s Next  
• Utilize the WVC STEM steering committee of employers to solicit regular feedback. | Wenatchee Valley Chamber  
City of Wenatchee  
WVC  
GWATA*  
Network | Year 2-3 |
## Financial Strategy

<table>
<thead>
<tr>
<th>Role</th>
<th>Who</th>
<th>Partner Organization</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network Director</strong></td>
<td>Dr. Sue Kane, Jenny Rojanasthien</td>
<td>Wenatchee Valley College, GWATA</td>
<td>0.5, 0.5</td>
</tr>
<tr>
<td><strong>Leadership Team</strong></td>
<td>Ron Brown, Jeff Bullock, Dennis Conger, Maria Guerra, Diana Haglund, Jeremy Jordan, Steve King, Mechelle LaLanne, Mark Marney, Bob Martin, Pete Phillips, Dr. Carli Schifner</td>
<td>Wenatchee School District, NCESD, Wenatchee School District - CTE, Eastmont School District, Wenatchee Learns Connect, Chelan County PUD, City of Wenatchee, NCESD, Eastmont School District, Cashmere School District, NCESD, WVC</td>
<td>Collective 0.4</td>
</tr>
<tr>
<td><strong>Policy Committee</strong></td>
<td>Dennis Conger, Sara Rolfs</td>
<td>Wenatchee School District-CTE, Washington Elementary PTSA</td>
<td>Collective 0.2</td>
</tr>
<tr>
<td><strong>Computer Science Statewide Workgroup</strong></td>
<td>Mechelle LaLanne, Ron Brown</td>
<td>NCESD, Wenatchee School District</td>
<td>Collective 0.2</td>
</tr>
<tr>
<td><strong>Career Connected Learning Statewide Workgroup</strong></td>
<td>Diana Haglund, Maria Guerra</td>
<td>Wenatchee Learns Connect, Eastmont School District</td>
<td>Collective 0.2</td>
</tr>
</tbody>
</table>
Objective 1
Increase Stem Awareness And Support - in the community promoting STEM literacy for all, defining roles and clearly outlining pathways to local STEM careers;

<table>
<thead>
<tr>
<th>Desired Outcome</th>
<th>Indicators</th>
<th>Goals</th>
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</table>
| **The Apple STEM Network is a community starting place for STEM information.** | • Facebook Followers, likes, shares etc.  
• Website clicks  
• Media releases | Weekly reach of 2,000+  
Monthly reach of 500+  
Regular listing of Apple STEM News in local media posts |
| **Businesses, educators and students identify with local STEM professions and opportunities.** | • Events like Business After School  
• Participation at NCW College and Career Fair  
• Number of events where STEM Profiles are displayed | Monthly Apple STEM supported events  
25% of Businesses display Apple STEM Badge at Expo  
Display STEM Profiles four times annually |
| **The Apple STEM Network messages are culturally competent marketing and regularly connecting with our Latino community.** | | Dual language website |
Objective 2
Promote & Increase Participation In Personalized & Project-Based Learning - spark interest in STEM through authentic field experiences, competitive challenges and personalized career exploration opportunities for students including apprenticeships, internships and mentorships with local industry and community partners;

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| Authentic field experiences are equitably accessible to all student in our region.| • The number of field experiences offered  
• The number of teachers who participate in STEM field experience training  
• Percentage of student participation in STEM field experiences  
• Community partner participation in STEM field experiences | Increase school regional district’s participation in CCL events/activities by 20% in 2016-18  
Increase STEM business participants by 20% In 2016-18 |
| All students have access to a variety of competitive STEM challenges throughout the year. | • Number of schools participating in competitions  
• Number of staff currently participating  
• Attendance at STEM Exhibitions | 100% of Apple STEM Network School Districts offer access to competitive STEM Challenges and offer student support to compete |
| Students in our region have personalized career exploration opportunities for students including apprenticeships, internships and mentorships with local industry and community partners. | • Number of businesses and organizations that are willing to offer work based learning  
• Number of student slots available  
• Total number of hours contributed by business and students | 100% of Apple STEM Network School Districts have access to work based learning |
## Objective 3

**Fortify Transitions** - promote a culture of support with family education; focusing on mentorship for underrepresented and first generation college-bound students to increase their entrance and success in STEM studies and lead to the pursuit of STEM careers;

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| **Student support programs like GearUp, Soar, Mosaic, PLTW, Trio, and Camp have regular interactions and mutually reinforcing activities.** | - The number of students CAMP/TRIO applying for Washington State Scholarship (http://www.wsac.wa.gov/college-bound)  
- The number of STEM students served in TRIO/CAMP and other student services.  
- The number of students transitioning from Gear-Up/SoAR, PLTW and MOSAIC programs to college programs. | Student support services convene 3 times each academic year.                                                                                                                                     |
| **Students are academically prepared to succeed in postsecondary education.**      | - The percentage of students requiring basic skills/developmental coursework in math  
- The number of STEM related HS course offerings  
- The percentage of students who complete at least one STEM course.  
- The number of students enrolled in Chemistry 161 (starting sequence course for AS-T degree). | 100% of high school graduates will know their WVC math placement.  
5-10 percentage increase of students enrolled in CHEM161 each year.  
100% of high school graduates will have completed at least STEM course.                                                                 |
| **Support Students have access to support with college plans including scholarship and financial aid resources.** | - The number of applications to the Washington State Opportunity Scholarship  
- Attendance for the FAFSA support nights at the high schools  
- Attendance and participation at the NCW College and Career Expo | Double the number of applicants to WSOS scholarship from Apple STEM Network School Districts.  
In the high schools’ chosen class(s) to participate in the NCW College and Career Expo, 80% of the students attend.                                               |
Objective 3 - Continued

Fortify Transitions - promote a culture of support with family education; focusing on mentorship for underrepresented and first generation college-bound students to increase their entrance and success in STEM studies and lead to the pursuit of STEM careers;

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| Student retention in STEM programs is improved and students are completing degrees. | • The number of students enrolled in certificated/tech programs  
• The number of students completing certificate programs  
• The number of students declaring AS-T pathway.  
• The number of students completing AS-T  
• The percentage of students who persist year to year at WVC  
• The number of faculty using the ‘just-in-time’ intervention in key STEM courses | Double number of AS-T Graduates  
100% of STEM Faculty use ‘Just in Time’                                                                 |
| Students have access to a STEM mentor in the discipline of choice.               | • Number of students receiving credit for on the job/internship/camp opportunities in STEM fields  
• The number of students paired with a mentor (i.e. Number of students completing independent research credits with a faculty mentor.) | 250 students with work based learning credit in STEM Field                                      |
## Objective 4

**Support Teachers** - encourage teachers to continue integrating technology and project based learning into daily educational experiences, explore professional development options, and engage community and business partners to support teachers;

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| **The regional community recognizes and celebrates STEM educators.** | - The number of attendees at the NCW Tech & STEM Showcase  
- The number of educators who are nominated for Innovator Awards | 2,000 attendees  
30 educators nominated |
| **Educators have access to ‘accessible’ and high-impact/high pay-off professional learning opportunities that integrate STEM disciplines and emphasize project based learning.** | - The number of teacher clock hours in STEM disciplines  
- The percentage of (or number of) educators with access to STEM externship  
- The number of participants in STEM PLCs  
- The number of local high quality PD opportunities for educators  
- The number of teachers completing one of their professional growth plan goals in STEM | Inservice opportunities for faculty of STEM increase by 10%  
Each school building in the Apple STEM Network School District has a fellow in math and science onsite |
| **Educators are connected with mentors to promote long-term success.** | - The number of participants or participating schools, districts etc. in STEM PLC  
- The number of mentorships matched | Convene a regional professional learning community by 2017 |
| **Educators take advantage of STEM professional learning opportunities.** | - The number of teacher clock hours in STEM disciplines (this measure is also listed in 4.1)  
- The number of NGSS PD clock hours via the teacher evaluation/survey (Regional science coordinators) | Increase the number of Administrative staff providing feedback to the NCESD by 10%  
Use the Apple STEM Network to Market Trainings |
### Objective 5

**Seek Industry & Community Input** - establish and maintain relationships with local community partners and STEM professionals to actively procure feedback, develop career pathways for students and promote economic development opportunities through our regional employers.

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</thead>
<tbody>
<tr>
<td>There is collective understanding regarding current business structure &amp; inventory of STEM employment in our community.</td>
<td>• The number of Apple STEM Network Business Partners</td>
<td>20 Business Partners commit</td>
</tr>
</tbody>
</table>
| New STEM jobs and economic development opportunities emerge for our region. | • Tables below on top 25 occupations in Chelan and Douglas Counties are for the information of the committee - health care seems like the largest area of opportunity.  
• Chelan/Douglas Trends - 2.3.3 [Shares of Employment in top 5 sectors](https://fortress.wa.gov/esd/employmentdata/reports-publications/occupational-reports/employer-demand-report) | STEM Employment opportunities continue to continue to increase. |
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Find us online:

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Facebook Page: https://www.facebook.com/Applestemnetwork/