Apple STEM Network
Year End Report
Oct. 1, 2016 - July 31, 2017

Prepared by Apple STEM Network Directors
Dr. Sue Kane and Jenny Rojanasthien
Annual Activities for Reporting Period

Significant Outcomes

The Apple STEM Network has outlined a strategic plan to support efforts in 5 key areas: (1) increase stem awareness and support, (2) promote & increase participation career connected learning, (3) fortify transitions from the K-12 system to higher education, (4) support stem educators, and (5) seek industry & community input to promote regional economic development. In addition to these, the Apple STEM Network has committed to support Washington STEM and our sister networks in furthering the statewide efforts in Educational Policy and Computer Science. The collaborative efforts detailed below directly correspond to these objectives.

Learning Laboratory Site Visit (2) - October 6, 2016
Wenatchee School District was selected by the National Governors Association as a learning laboratory for best practices in career connected learning through Wenatchee Learns Connect. As a learning lab, Wenatchee was awarded a grant of $15,000. Representatives from Washington STEM, who are administering the NGA’s research in Washington, visited Wenatchee to see first hand how business and community organizations are partnering with Wenatchee Schools to create engaging career connected learning experiences such as job shadows, internships and real-world problem solving.
Sponsored by: National Governors Association Learning Lab Grant
Partners: Washington STEM, SkillSource, Alethea Riding Center, Warm Spring Inn, City of Wenatchee, Apple STEM Network, GWATA.

Wenatchee Mini Maker Faire (1-5) - October 29, 2016, Wenatchee Convention Center
The student-organized Wenatchee Mini Maker Faire captured the entire valley’s innovative spirit in an exciting, one day event. Artists, engineers, inventors, performers, musicians, tinkers, students and educators presented their creations in an environment that celebrates creative, fun, and experimental thinking. Jenny Rojanasthien of the Greater Wenatchee Area Technology Alliance mentored a group of Wenatchee High School students in leading the event. More than 1,400 people visited the Mini Maker's Faire. Sponsored by the Greater Wenatchee Area Technology Alliance, Apple STEM Network, Yahoo, Pacific Aerospace and Electronics, NCW Life, Wenatchee Valley Museum and Cultural Center, Molina Healthcare, SCH Alliance, Connections Academy and Wenatchee Learns Connect

Apple STEM Network (1-5) - October 29, 2016
Washington STEM awarded the Apple STEM Network with a $111,000 implementation grant during an award ceremony the Mini Maker's Faire. The Apple STEM Network committed to work to underscore a conduit for students toward STEM fluency, opening the door to new opportunities and careers in our valley and stimulate economic development of the greater Wenatchee area. Sponsored by: Washington STEM; Core leadership team includes Wenatchee, Eastmont and Cashmere School Districts, the North Central Educational Service District, the Chelan PUD, Wenatchee Valley College, and the Greater Wenatchee Area Tech Alliance.

NCW College and Career Expo (2,3,5) - November 1, 2016, Wenatchee Valley College
Over 2,000 students from nineteen school districts from around Central Washington and over 100 employers and colleges flooded the Wenatchee Valley College campus for a full day of career exploration. Businesses
and post secondary recruiters showcased career and educational pathways through hands-on interactive exhibits. STEM educators and industry partners were identified as such by the Apple STEM logo on their name tags. **Sponsored by Central Washington University SOAR GEAR UP grant, SkillSource, Crunch Pak, Pacific Aerospace & Electronics, Washington State Opportunity Scholarship, Van Doren Sales, Cordell Neher & Company PLLC, The Thai Restaurant, AG Supply Co. Walmart, Stevens Pass Mountain Resort, Real Options, Wenatchee Valley College and Apple STEM Network.**

**STEM Legislative Forum (Policy, 1) - November 1, 2016, Wenatchee Valley College**
Twelfth District legislative candidates shared their positions on Science, Technology, Engineering and Math during a legislative forum. Moderated by Patrick D’Amelio, then Washington STEM CEO. This forum allowed our legislators to take a close look at the issues ahead of a critical legislative session and introduced all legislators and the audience to the Apple STEM Network mission. The forum was broadcast on the local news station in its entirety. **Partners: Apple STEM Network, Wenatchee School District, GWATA, Wenatchee Valley College, Washington STEM and NCWLife.**

**Apple STEM Network Local Learning Tour (1, 5) - November 3, 2016**
Twenty-three regional STEM ambassadors spent the day visiting 5 STEM sites in the greater Wenatchee area and engaged in group dialogue around our regional STEM education and workforce. **Partners: Apple STEM Network, North Central Regional Library, Pacific Aerospace and Electronics, Badger Mountain Brewery, the City of Wenatchee, Wenatchee, Cashmere, and Eastmont School Districts, the Chelan PUD, wvc, GWATA, Wenatchee World, and Washington STEM.**

**Washington STEM Summit - November 29, 2016, Microsoft Campus, Redmond**
Eleven of the core leadership team were able to attend the Summit and make invaluable connections to several other network partners across the state and across the country. Diana Haglund, Wenatchee Learns Coordinator and Dennis Conger, Wenatchee School District Career & Technical Education Director presented the Wenatchee Learns Connect model of career connected learning with business leaders and educators from around the state and highlighted the public private partnerships with SkillSource Learning Center to provide work based learning experiences to re-engage out of school youth and project-based learning experience with the Port of Chelan and the City of Wenatchee.

**WSOS Champions Workshop (1, 3) - December 8, 2016, Wenatchee Valley College**
Twenty-seven attendees from 6 school districts attended a workshop presentation by Theresa Britschgi to champion and assist students in their applications for the Washington State Opportunity Scholarship. Several of the educators present had not previously heard about the scholarship until the training. The collective advocacy resulted in 54 awarded WSOS scholarships to the region (more than doubling last year’s 26)! **Sponsored by WSOS, Washington STEM and Wenatchee Valley College**

**Junior Solar Sprint Workshop (4) - January 8, 2017, North Central Educational Service District**
Pete Phillips of the North Central Educational Service District assembled and delivered a regional training for JSS. Eight middle school teachers from 5 school districts attended a training which introduced the Junior Solar Sprint competitive challenge by AEOP. Every teacher who attended the training was provided a classroom set of materials, valued at $200, through a donation from the Chelan Douglas School Retirees Association ($1,600 total). Pete delivered the same training to four other communities statewide in coordination with Washington STEM. This project was discussed in a radio program following the training,
which was later posted to the AEOP website. On August 17th, this collaboration will be featured in a STEMx webinar. **Sponsored by AEOP, Washington STEM, Chelan Douglas School Retirees Association, and the North Central Educational Service District.**

**5G Future Fest - Fifth Grade Career Exploration Experience (1,2)** - February 15, 2017, Town Toyota Center. This near-peer learning opportunity had a huge impact! Wenatchee High School students from 7 Career & Technical Education leadership groups facilitated exciting hands-on career connected activities that related to their respective focus areas to introduce all-district fifth graders to a variety of careers in areas such as engineering, medicine, business and agriculture. **Sponsored by TTC Youth Enrichment Grant, Wenatchee Learns Connect, Wenatchee School District, Career and Technical Education.**

**STEM Meeting in Olympia (Policy)** - March 1-2, 2017
The Apple STEM Network policy team met with each of our regional representatives: Representative Cary Condotta, Representative Mike Steele, and Senator Brad Hawkins as planned, and made additional connections to Senator Judy Warnick, Senator Lisa Wellman, and Representative Tom Dent of the 13th legislative district.

**Careers After School - Stemilt (1, 2, 5)**- March 23, 2017, Stemilt Headquarters
Middle and high school students were invited to take a bite out of a variety of careers at Stemilt. Students got a glimpse inside Stemilt’s new high tech facility packing facility and the variety of exciting careers inside one of the world’s largest fruit producers. Featured jobs included; IT refrigeration, quality control, horticulture, accounting, sales and marketing. **Partners: Wenatchee Learns Connect, Wenatchee Valley Chamber of Commerce, Stemilt**

**Cashmere High School Career Day (1,5)** - March 24, 2017, Cashmere High School
The Apple STEM Network and Wenatchee Valley College presented at this fair for 9-12th graders and introduce a number of STEM careers and educational pathways. **Partners: Wenatchee Valley College, Cashmere School District, and the Apple STEM Network.**

**Innovator Awards Luncheon (1, 5)** - March 30, 2017, Wenatchee Convention Center
During this event over 350+ community members came together to recognize leaders in innovation, technology, and education in NCW. GWATA handed out five prestigious awards, including three for education and two to a pair of Apple STEM Network Industry Partners (winners videos are linked below):

- STEM Educator of the Year - awarded to Tina Nicpan-Brown, who was also the recipient of the PEI field STEM awards for $5K through Washington STEM.
- Future Technology Leader (K-12 Student) - awarded to Moses Lurber, a Wenatchee High School student who designed a sustainable aquaculture to supply the lunch room with sustainable fish.
- Problem Solving Innovator (Post-Secondary Student) - awarded to Nataliia Piestrup and Jared Harris of Wenatchee Valley College for the work they are doing to investigate DNA damage repair mechanisms.
- The Tech Savvy Business of the Year was awarded to Pacific Aerospace and Electronics.
- The 2017 Entrepreneur of the Year Award was presented to Dave Carlson of Giga Watt

**Careers After School - Chelan PUD (1, 2, 5)**- April 19 & 20, 2017, Chelan PUD Headquarters
Middle and high school students from around the area were invited to explore electrifying careers at Chelan County PUD. Students were able to get a ground-floor view of the jobs with the PUD fleet and on a second visit they were introduced to the biological science careers surveying fish and wildlife. **Partners:** Wenatchee Learns Connect, Wenatchee Valley Chamber of Commerce, Chelan PUD.

**Techbridge STEMinar (4) -** April 26, 2017, Wenatchee Valley Museum & Cultural Center  
Twenty-six STEM educators were presented with Techbridge white paper findings about best practices in engaging youth, especially girls, in STEM. **Sponsored by Washington STEM, hosted by the Wenatchee Valley Museum and Cultural Center and the Apple STEM Network.**

**NCW Tech & STEM Showcase (1, 2, 4, 5) -** May 13, 2017, Pybus Market  
The NCW Tech & STEM Showcase is a community event where teachers, educators, and students have the opportunity to show their classroom projects. Focused on technology and STEM -this event featured 24 interactive displays which included: drones, video game programming, robotics, app design, & even a junior Lego League Competition! More than 120 students and teachers from five school districts participated (coming from four different counties: Chelan County, Douglas County, Grant County and Okanogan County) . The event was open to the public and drew more than 1800 visitors. We have three videos that summarize the event, reference them here: Video, Video, Video **Sponsors:** GWATA, Microsoft, Wenatchee School District and North Central ESD.

**Tech Ninja’s -** Year-round, Orchard Middle School  
More than 100 students in 5th and 6th grade iPad classrooms have voluntarily taken tests to further demonstrate their iPad skills and knowledge. Students become ninjas by studying for and passing tests about how to use their iPad for learning and teaching others. There are four different levels of increasingly harder tests starting with Novice and Apprentice and finally Ninja and Master. The goal of the program is not just to allow students to show off how much they know, but to ease the burden teachers face to have to teach important tech skills. Video Clip

**Pizza Pop and Power Tools (1, 2, 3, 5) -** May 16, 2017, Wenatchee Valley College  
More than 200 eighth grade girls connected with non-traditional careers for women, connect with female professionals and challenge themselves to try new skills and learn about the education and training needed for a range of career paths. **Partners:** Wenatchee Learns Connect and Chelan PUD.

**Aviation Day (1) -** June 17, 2017, Pangborn Airfield  
The Apple STEM Network and partners from GWATA and the North Central Regional library hosted booths with STEM activities for families in attendance at this annual aviation celebration.

**FWEE STEM Hydropower Academy -** June 19 -23, 2017, Rocky Reach Dam  
The FWEE Hydropower and STEM Career Academy is a week long immersion experience for high school students into hydropower careers. During the week students explore the physics of producing hydropower, race solar cars and learn to fly your own drone. These are part of STEM challenges that include meeting and doing hands-on activities with mechanical and electrical engineers, plant mechanics and operators, divers, and linemen. As the week unfolds, career options and educational pathways that may inspire you to pursue a four year college, community college and/or an apprenticeship program will be revealed.
Challenges

**Backbone agency:** As part of the strategic plan for the implementation of the Apple STEM Network business plan, we requested the fiscal agency to be reassigned to the North Central Educational Service District.

Our founding backbone organization, Wenatchee Valley College, has been instrumental in getting this collaborative off the ground and provided the matching funds to incubate the Washington STEM investment, through both the planning phase, and the first year of implementation. WVC has been flexible and as accommodating as possible in managing our business needs, while carefully adhering to all state mandated fiscal guidelines. However, our leadership identified a potential road bump as we began to discuss broader industry and educational partnerships outside of WVC’s district boundaries. As an institution, WVC funds are limited in the ways that they can be used outside of the district and we are not able to grow our footprint, as easily, with our present arrangement.

Our lead partners at the North Central Educational Service District are matched in capacity to host the Apple STEM Network, and serve as a fiscal agent for our grant, and their larger footprint would allow us to explore regional growth without putting our fiscal agent in a delicate position. The NCESD has also agreed to maintain the STEM Network Director position and we hope that this will minimize transitional issues. WVC has agreed to remain committed to our collaborative work and will continue to be a lead partner for the Apple STEM Network.

We are not anticipating any other significant changes to Apple STEM business plan, the partnership with GWATA, the scope of work, or representation within the leadership team.

**Funding/Sustainability:** We are still working on building a financial model that encourages our businesses partners to financially support the Apple STEM Network and offers them a ROI. We have great relationships with our business partners and they’ve been active in supporting the network with a number of specific asks thus far. We have identified that one of the reasons developing a financial strategy has taken a backseat to active participation is that our collaborators are often mid-level. We have identified a need to schedule face-time with CEO level partners in the upcoming months to find out what deliverables they would like to see in order to invest in financial support. We have also identified the need to develop resources to clearly communicate the mission and value of an investment in our STEM collective impact work.

**Distribution of Workload/Meeting Dates:** Planning out the year is a key component of our success. As a collaboration of a multitude of organizations, coordination of annual schedules requires as much advanced notice as possible. We had underestimated the time commitment needed for a few of our projects this year, and found challenge in meeting local needs alongside statewide participation in policy work and statewide convenings like the Governor’s STEM Summit last fall and the Governor’s CCL Summit this spring. We would like to gain insight from Washington STEM about when meetings will be held for the next six-nine months, and if possible including the expectation/estimation of hours on key objectives. For example, the important policy work heading into the legislative session and then through the extended session, turned out to be a very large time commitment for both the directors and those on the policy committee. While we appreciated the urgency of the policy work, we also felt the fatigue of the long session, and we worried that continuing to tap our regional partners for their help in advocacy might result in burnout. We now have a
better appreciation of workload, and we will be very clear to our network leadership team and partners as to what is ahead for those engaged in policy work for the coming year.

Looking Ahead.

In looking ahead, briefly list any challenges you anticipate and ways you might address them. Do you foresee delays in completing your Network in the timeframe outlined in your proposal?

As our collaborations deepen and our partners begin to move from a getting acquainted to a more mature collective impact work model we are excited to see several new doors opening in the near future. We are working in collaborations with several new partners on a few projects: we will be working alongside the Wenatchee Museum and Cultural Center to apply for funding to use their mini maker’s lab to serve as a ‘test-kitchen’ for the development of a Wenatchee local tech and robotic industry challenge series and at the other end of the spectrum, we will be working to further unite higher education faculty to our industry partners through the development of a weekly seminar series that will serve up inspiration to higher ed partners as well as K-12 educators. The Apple STEM Network will also assist Wenatchee Valley College in the development of their application to bring a MESA program to Wenatchee, and will serve in the development of a regional advisory team if WVC is supported in the 2017 expansion cohort.

Of equal importance, we are looking forward to bringing the Quincy School District into the Apple STEM Network fold and getting a better appreciation for their STEM education goals.

We are very excited about the a number of regional plans in the works for the coming months:

STEM Network Meeting
August 2-4, 2017

NCESD STEM Summit
August 14-18, 2017

Wenatchee Mini Maker Faire
October 21, 2017

2017 College and Career Expo
November 6, 2017

Wenatchee Regional Qualifier, First Lego Robotics
December 9, 2017

Products, Tools, or Resources. Please describe any products, tools, or resources that were developed or discovered during this reporting period that could be shared with Washington STEM to help inform others doing similar work.

E-newsletter: The Apple STEM Network developed an e-newsletter format that quickly highlights opportunities in the following categories:
This e-newsletter is successful because it’s tool that we can use to communicate with the general public, educators, students, and our business partners that quickly spotlights areas that may be of interest. This is also a successful tool for our general communication, versus detailed messages that we may need to send just to our leadership team.

**STEM Career Profiles:** We built a marketing platform for highlighting local careers and local professionals called STEM Career Profiles. We use them to highlight local professionals, build relationships with industry/business partners, and most importantly - to show students that there are great local careers in STEM. Career profiles are used in marketing materials that are shared with K-12 Partners, Industry, and Media. They are geared towards parents, middle-high school students, and the community.

**Success Stories.** Include 1-3 success stories or specific accomplishments that deserve special mention on the Washington STEM website.

*‘Our Valley, Our Future’ - Computer Science Connected to STEM Summit:* At our December Apple STEM Network meeting we had a focused deep dive on teacher professional learning through the North Central ESD. Mechelle LaLanne presented to the group about the regional STEM learning opportunities that are presently underway and when asked about some of the challenges she faces, she cited a most recent training that was offered last summer that would have helped teachers learn to integrate computer science into their science and mathematics curriculum. The training was not attended the way that she had hoped and she cited the dyssynchrony of the school districts launch week activities as part of the problem. She said it was increasingly challenging to find a day that teachers from more than one district could attend a training. The three school districts were all represented at the table, and when presented with the value of the training and the dilemma they opened up calendars on the spot and identified a window of days in August when Mechelle could host the Computer Science training for a second time and their respective teachers could attend. They also agreed to promote the training in each district.

The ‘Our Valley, Our Future’ project is a grassroots community planning effort that outlines a robust regional development plan. The Apple STEM Network was named a lead under a strategy to support STEM education measures. As a lead organization, we have been encouraged to apply for a mini-grant to support collaborative and cross jurisdictional efforts and our leadership team has submitted an application for these funds to cover the cost of the computer science training for teachers. We were awarded a $1500 mini grant to cover the cost of a trainer and materials to host a computer science in science and computer science in mathematics training for middle school teachers.

In planning for the computer science training, the North Central Educational Service District realized that there was a golden opportunity to take advantage of the reserved time in the district calendars and they devoted additional resources and trainers from throughout the region and went from a single training to serve 8-10 teachers, to a regional conference which will have more than 50 sessions and serve 200+
teachers the August. The Apple STEM Network will host a keynote panel to kick-off the third day of the ‘NCESD STEM Summit’ here in Wenatchee. The Apple STEM Network also funded 10 scholarships to teachers in districts not currently part of the educational co-op for professional learning that the NCESD provides.

Feedback. Please include any comments or feedback as to how Washington STEM staff can improve its relationship with Networks and provide the needed assistance to help Networks succeed.

As we mentioned under challenges, we are feeling a health tension between the statewide efforts and collaboration and our regional goals outlined in our business plan. We are genuinely excited to participate in the statewide projects and plans, but are still carefully finding a balance with our local goals for growth and investment.

We are also really grateful to Washington STEM for the recent communications to loop us in when a regional resource is needed for a statewide workgroup like the Policy or CTE work groups, and greatly appreciate the opportunity to weigh in and make suggestions about who would be a regional resource for these efforts. This kind of communication adds value and intentionality to the STEM Network locally and reinforces the great working relationships we have with our partners. It also allows us to be sensitive to not max out a partner with too many asks and consider local investments as well as statewide needs that support our collective efforts. We hope this will continue as we move forward.

Financials. Present an actual budget of grant expenditures for the reporting period alongside the approved budget (see Attachment D). Include a brief narrative explaining line item variances (over/under 10%) from the approved budget and any consultants paid for services. If you have any underspend, please also provide an updated budget and narrative for how those funds will be used to support the work of the Network. Any substantive changes should include an explanatory note. Please also list additional funding sources (secured and prospected) that would support the ongoing efforts of this Network.

Attachments. Include relevant materials, evaluations, and/or media stories directly related to your STEM Network.

- Career Profiles
- Leadership Evaluation Results
- Press Releases:
  - Apple STEM Implementation Grant
  - JSS
  - PEI Field STEM Grants
  - GWATA Innovator Awards Announcement
  - GWATA Innovator Awards Nominees
  - GWATA Innovator Awards Finalists
○ GWATA Innovator Awards Winners
○ NCW Tech & STEM Showcase
○ WSOS Results
○ GWATA Summer Social

● Paid Ad: STEM Legislative Forum

● Wenatchee World Articles on the Apple STEM Network and/or partners:
  ○ Oct. 15, 2016, STEM tour set for November
  ○ Oct. 30, 2016, Apple STEM Network wins $111,000 grant
  ○ Oct. 30, 2016, World Editorial Board | Grant with impact
  ○ Nov. 5, 2016, ...STEM tour reveals powerful learning approaches
  ○ Nov. 14, 2016, ...STEM network
  ○ Nov. 24, 2016, Wenatchee museum thankful for its grants, awards
  ○ Dec. 1, 2016, Our Valley, Our Future shows us the power of engaging citizens
  ○ Feb. 26, 2017 Teaching for jobs
  ○ Apr. 4, 2017 Educators launch learning lab video gear up for summit
  ○ May 3, 2017 51 local students receive STEM-focused scholarships worth $22,500
  ○ May 16, 2017 Possibilities
  ○ May 31, 2017 Apprenticeships are the wave of the future
  ○ Jun. 13, 2017 STEM is gaining steam
  ○ Jun. 22, 2017 STEM Academy focuses on hydropower

● Wenatchee World Interviews: The Art of Community:
  ○ Part 1 Interview with Sue Kane
  ○ Part 2 Interview with Jenny Rojanasthian