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## 4-H Tech Changemakers

July 13, 2018

# Washtenaw, MI and Wayne, MI

**4-H TECH CHANGEMAKERS**

#TechChangemakers



# Michigan – Teen Mental Health (Washtenaw County)

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## Goal:

To address teen mental health using technology

# Why was this Project Important?

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- Current technology options are through school or by paying for community education. Not free or on teen schedule
- There are no welcoming teen spaces to hang out in the community
- Teens recognize stress among peers
- There have been six successful teen suicides or risk related deaths in the Chelsea area since fall 2015
- Washtenaw County Teen Health Data shows more can be done.
- Adults see Tech as the issue, but teens rely on technology. What's the answer?

# Washtenaw Outcomes So Far:

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- Built relationships with other community stakeholders
- Successfully set up a summer Tech Corner for teens and families
- Spent time learning more about the needs of the community
- Tech Changemakers developed leadership skills:
  - teamwork, perseverance, patience, communication, and planning
- Worked with library staff to gain tech management skills
- MSU Extension's 4-H staff leveraged Microsoft project to secure \$50,000 U of M Health Systems grant
  - Now have 2 full time staff for 1 year
  - Addressing social determinants of health (Create County Teen Mental Health Advisory Group)

# Michigan – Teen Substance Abuse (Wayne County)

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## Goal

To connect young adults with:  
Positive afterschool environments,  
Substance use counseling, and  
Other professional health services to deal with  
impact of substance use

# Why is this Important?

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- A 2014 study indicated an increase in the number of African-Americans admitted for help with drug addiction in Detroit.
- Study also referenced a continuing influx of young, white heroin users to treatment, and an increase in (non-cocaine) stimulant use in Wayne County.

# Project Outcomes So Far:

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1. Developed a community survey to learn about community experiences involving substance use.
2. Shared the survey, and informed the community about substance use.
3. Created an accessible digital space where teens can access resources, support, and help with substance use issues.
4. Connected with *Detroit Empowerment Zone, Data Driven Detroit,* and the *Livonia Save Our Youth Coalition.*



# Summary

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## Wayne County

- Showed substance use movie to 40 teens and adults
- Distributed literature and answered questions at MLK High School in Detroit
- Talked to teens at community event at Westland church
- Distributed substance use literature to 1000+ youth at Metro Detroit Youth Day (Belle Isle)

## Washtenaw County

- Met with city stakeholders (Police, Council, Teens, School, Library, Senior Ctr.)
- Surveyed teens and others (online)
- Met with Mayor
- Set up a summer tech corner as part of Summer Community Center.
- Working on a teen mental health or similar peer-to-peer training for fall 2018

# Mecklenburg County, VA / 21<sup>st</sup> Century Skills for a Changing Workforce

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# Our Community

- Mecklenburg County is a rural county located in Southside Virginia with a population of nearly 31,000. Known as “Lake Country,” Mecklenburg County is home to Kerr Lake and Lake Gaston.
- Geographically, Mecklenburg is one of Virginia’s largest counties at over 625 square miles. There are currently 4 public elementary schools, 2 middle schools, and 2 high schools that serve the community.
- We are a diverse community. Approximately 60% of the residents are white, 35% are African American, and 3% are Hispanic.
- Mecklenburg County is largely agricultural, with the two main commodities being tobacco and soybeans.



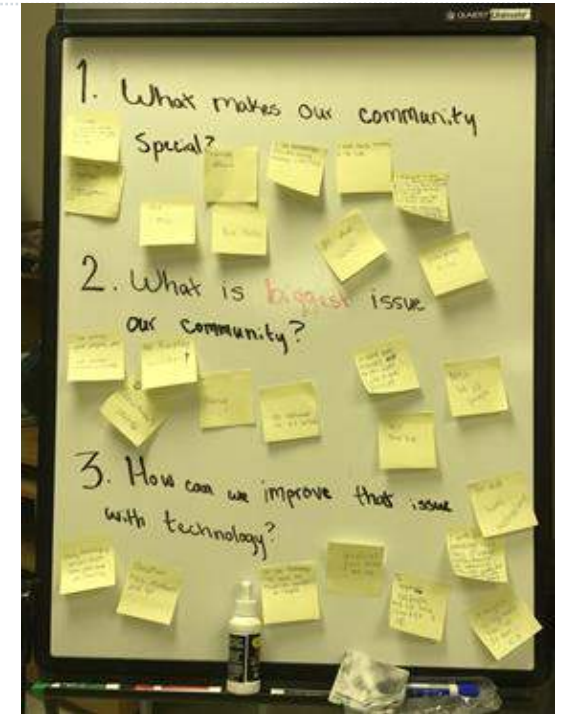
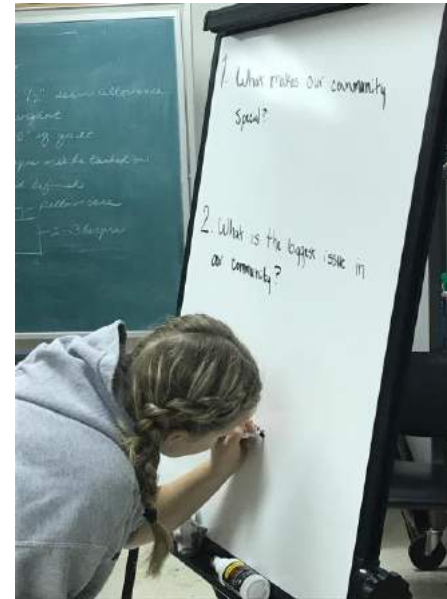
# Community Issue

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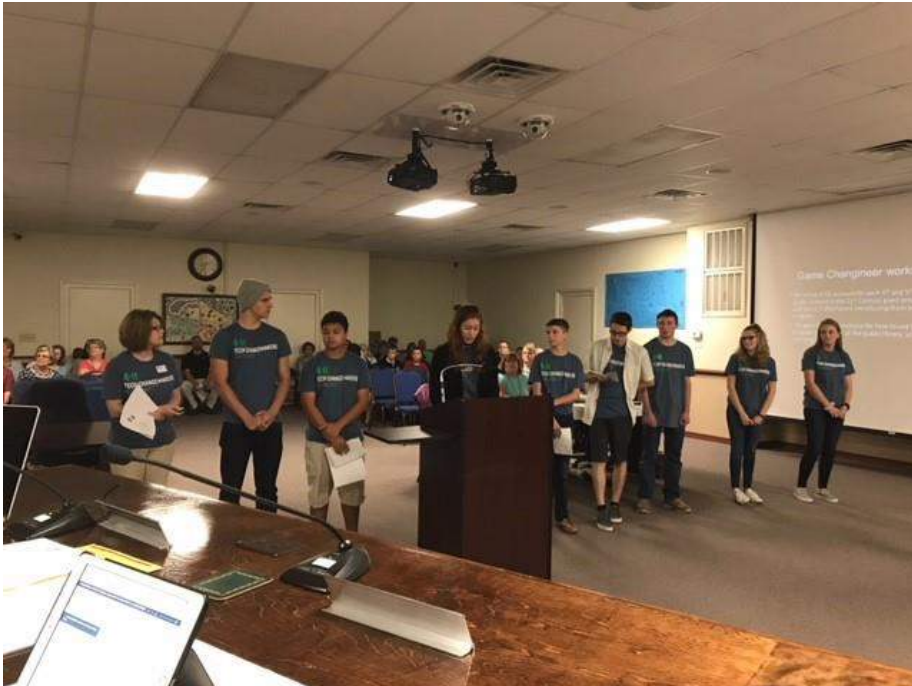
- While Mecklenburg County has made great strides in economic development in recent years, the average family income lags behind the state average and the unemployment rate remains higher.
- Our local government officials are working with the School Board on a plan to build improved facilities and attract the best teachers to our area. Towns within the county are competing with others in the Southside region to attract new businesses and families to Mecklenburg.
- **In order to attract new industry and high-paying jobs to Mecklenburg, the county needs a workforce with 21<sup>st</sup> Century skills.**

# Learning about our issue

- In order to find out more about the issues affecting our community, we conducted one-on-one interviews, led discussions at club meetings, and developed an online survey.
- Our interviews included the chair of the Board of Supervisors, Mr. Glen Barbour, and the School Division Superintendent, Mr. Paul Nichols.



# This is who is affected and how



- **This issue affects youth in our community.** In order for youth to have the skills they need to get a great job one day, they need access to training and technology and improved digital literacy skills.
- **This issue affects our schools.** As they embrace a changing curriculum, they need funding for better facilities and to attract and retain the best teachers.
- **This issue affects adults and families** who need access to higher-paying jobs in order to stay in our community.

# This is what we did



- Our Tech Changemakers received lots of training on **leadership skills, communication, civic engagement, teambuilding, and technology.**
- While building our own 21<sup>st</sup> century skills, we decided to help younger students improve their digital literacy by offering free after-school and summer programs. We used a video game design platform called Game Changineer. We even ended up training teachers!

# Our partners



- **Mecklenburg County Public Schools**
  - Mr. Paul Nichols, Division Superintendent
  - Mr. Gary Cifers, CTE Coordinator
  - Mrs. Ann Dalton, Principal at Clarksville Elementary
  - Members of the School Board
- **Dr. Michael Hsiao**, VT Professor of Electrical and Computer Engineering (developer of Game Changineer)
- **Southside Virginia Community College**
- **Jeremy Satterfield**, Microsoft's TechSpark Community Engagement Manager



# This is how we helped at one school



- We worked with 15 fourth and fifth grade students enrolled in the 21<sup>st</sup> Century Community Learning Center program at Clarksville Elementary.
- 100% learned new technology skills
- 87% want to learn more about technology
- 67% see how technology can make their community better
- The principal said, *“It was an amazing experience! The students are very excited about the program! (They) told their teachers and friends about it the next day and worked on it at home, too! Thanks for the special opportunity.”*

# Helping our community



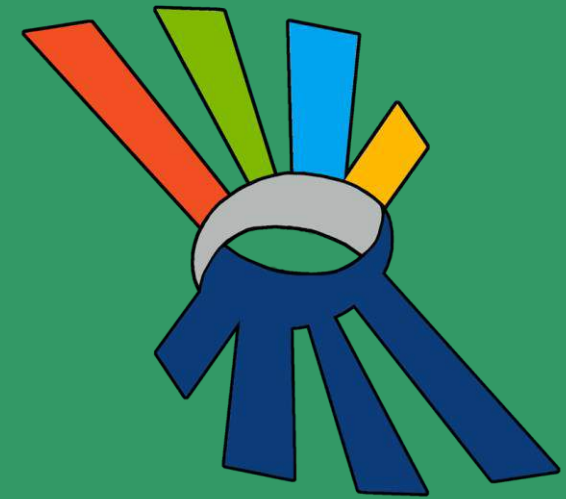
- We helped train 40 middle and high school teachers to use Game Changer in their classrooms. One wrote, *“I’m excited about using it. Seems like a wonderful starter for my class to get basic understanding of coding.”*
- We offered a FREE summer day camp program for rising 5<sup>th</sup> – 8<sup>th</sup> graders at SVCC. We had 18 participants. Every camper was able to successfully create his or her own video game! On the last day, parents were invited to see what the campers had accomplished. One said, *“Thank you for this WONDERFUL opportunity for her to learn new things!”*

# Future plans

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- In year two, our plans include:
  - Continued training for our Tech Changemakers
  - Additional digital literacy and technology-based workshops for younger students offered during after-school programs and community events
  - Community technology expo featuring a video game design contest
- We are also excited to work with our neighbors in Charlotte County as they begin their Tech Changemakers program!

# Brown County, WI Tech Changemakers



**4-H** TECH CHANGEMAKERS

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# Our Community

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- Brown County: 4<sup>th</sup> largest County in WI, population of 262,000
- City of Green Bay accounts for 40% of the county population
- Growing diversity throughout County, but more drastically in the City of Green Bay
- Large manufacturing area
- 2<sup>nd</sup> fastest growing county in Wisconsin, second only to Dane (Madison)
- Home to the Green Bay Packers (the only fan-owned team in all 4 professional leagues)
- Home to 8 public school districts (with a total of 77 public schools):
  - 47 elementary schools
  - 14 middle/intermediate schools
  - 11 high schools
  - 5 alternative/charter schools
  - An additional 30 private schools K-12

# Community Issue

- Hole in STEM programming for middle schoolers
- Brown County 4-H Tech Changemakers are working to make a STEM (SPecial INterest – SPIN) group
  - Developing lesson plans
  - Implementing programming at one middle school
  - Plan to expand to multiple sites in future

# Learning about our issue

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- Development of Video and Survey instrument:
  - <https://drive.google.com/open?id=1tEsgWMr5Blx4KNvldFdOYWrvpuoT9r52>
- Needs Assessment of middle school administrators:
  - <https://drive.google.com/open?id=1P-f08rT3Hxlz4alf6lSD1acdL6CiFESsXZshswiESMo>
- Assessment of community organizations – Einstein Expo:
  - [https://drive.google.com/open?id=10nIGBYVZNMfkEC4LNIRQUU3\\_twxKU3QGlabEgT7ijU](https://drive.google.com/open?id=10nIGBYVZNMfkEC4LNIRQUU3_twxKU3QGlabEgT7ijU)

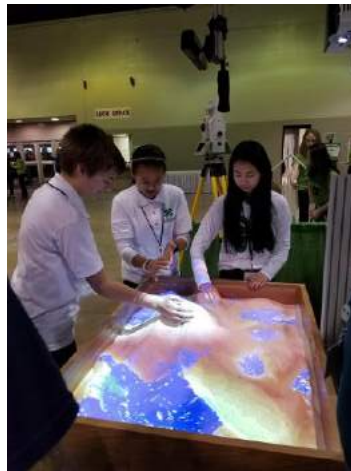
# This is who is affected and how

- Middle School youth lose interest in STEM
  - Especially young ladies and diverse populations
- Our goal is to make STEM accessible and appealing





# This is what we did

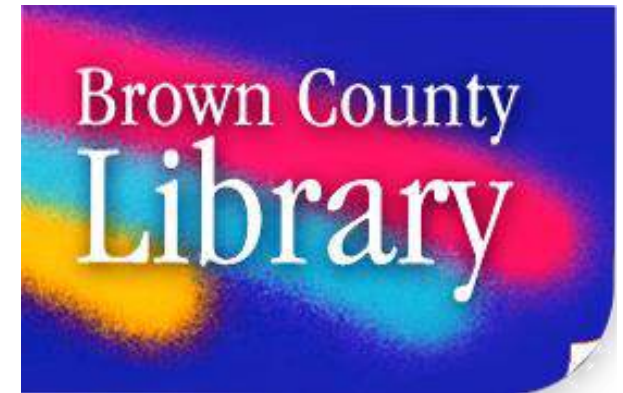


- Mentored the Code.Org event
- Created a survey
- Wrote, directed, filmed, edited and distributed video and survey
- Contacted schools
- Reviewed data
- Video chatted with GB STEM Network
- Researched technologies middle schoolers were interested in
- Planned and implemented STEMnition
- Learned more for ourselves!

# Our Partners



Our partners will keep growing, now that we are directly providing programming and opportunities!



# This is how we helped an individual(s)

- We provided data to document the needs and desires for out of school time STEM programming for middle school youth.
- We shared opportunities in technology with people who hadn't see it or thought it was accessible to them.
- We learned a lot. And we are excited to get started with out of school time programming for middle schoolers!



# Future plans

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- Develop out of school STEM programming
- Utilizing technology interest middle school youth
  - EV3 robotics
  - Adafruits,
  - Makey Makey
  - Microscopic animal
  - Design engineering
  - Bloxels
- Begin at Edison Middle School with plans to expand
- Digital map opportunities for parents/adults to connect to STEM
- Create YouTube Channel for virtual learning

# Quincy, WA 4-H Tech Changemakers



**4-H TECH CHANGEMAKERS**

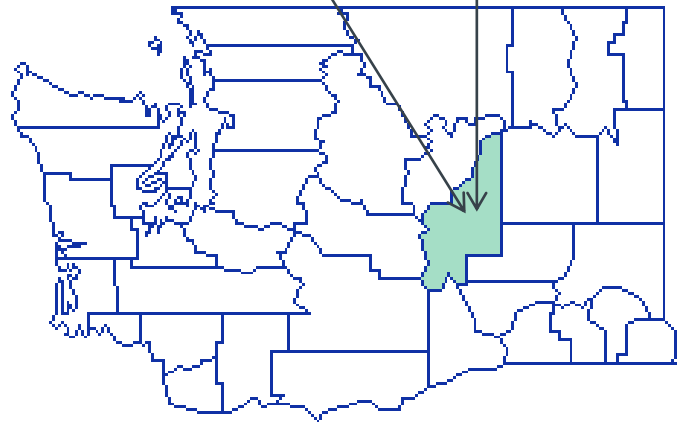
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# Our Community

High Agricultural Area

Population of Grant County 89, 210



# Community Issue

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- Lack of technology and digital skills.
- Lack of resources such as transportation, internet access, digital safety and funds to access technology.
- An estimated 50% of all students do not have access to a computer with internet access after leaving school.
- Internet safety and scams are a constant concern.
- Need digital skills to access health records, student records, etc.
- Information about internet access is easily understood by much of our population.

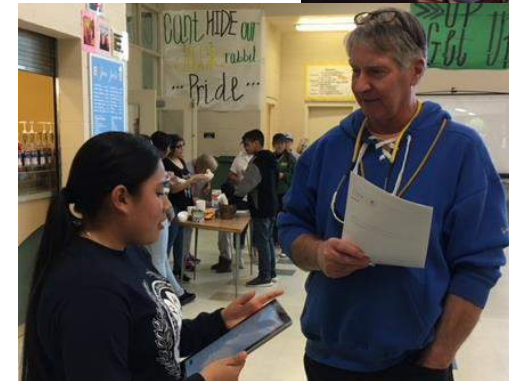
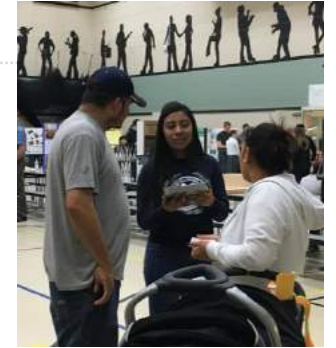
# Learning about our issue

We surveyed approximately 50 community members.

We surveyed 90 Quincy School District students.

Interviewed community stakeholders from:

- School Board
- Public Utility District
- School District Assistant Superintendent
- Port District
- CEO of Quincy Valley Medical Center
- Quincy City Police Officer
- Quincy Recreation Department
- Quincy City Librarian
- Microsoft Tech Spark Representative for the NW states





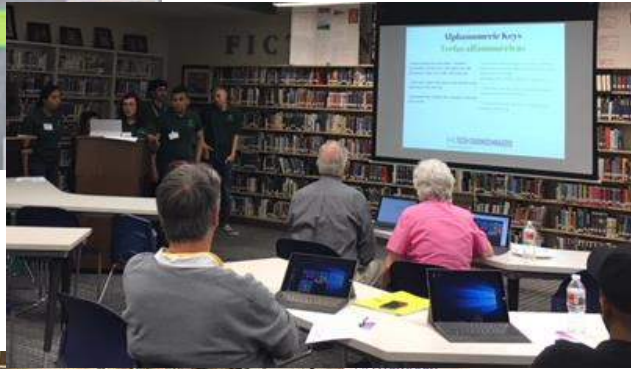
# This is who is affected and how



- Everyone in our rural farming communities is affected, including students, senior citizens, farm laborers, agriculture employers, businesses and organizations.



# This is what we did



Piloted seven (7) Digital Skills Classes open to all ages in our community.

Recruited six (6) additional student 4-H Tech Changemakers to assist us in teaching in both English and Spanish.

Taught classes using the 4-H Teens Teaching Digital Skills curriculum and the Microsoft curriculum.

Presented to Rotary, School Board, and School Technology Committee.

Partnered with local Microsoft Data Center employees to help promote our classes.

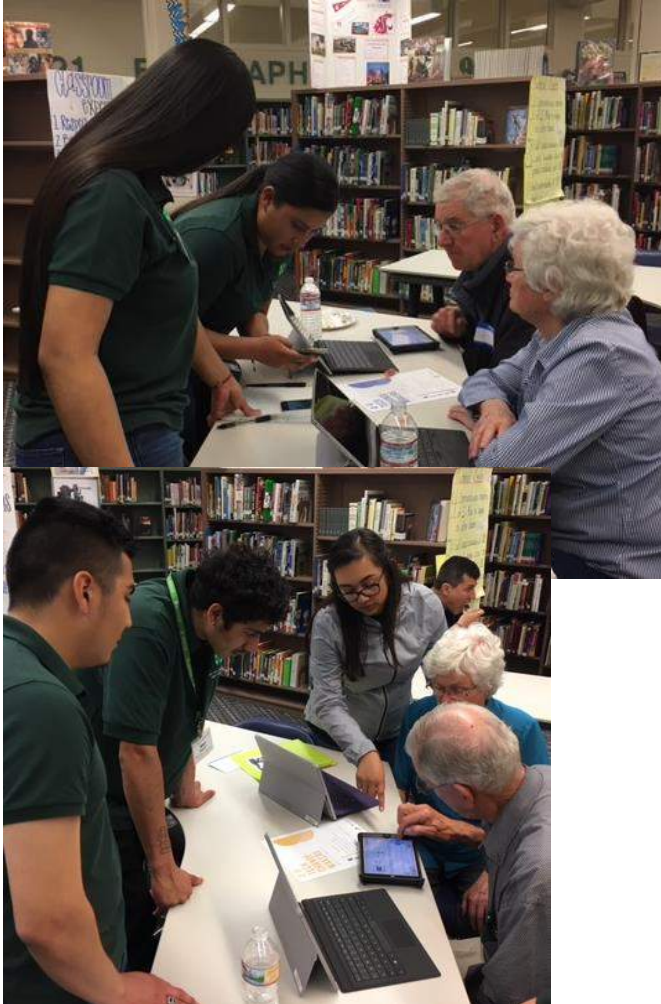
Designed a display highlighting our project at QHS Career & Technical Education Fair, Quincy Business Expo and WA State Park's Chautauqua event.

# Our partners



- Grant County 4-H Program
- Washington State 4-H Program
- Microsoft Data Center
- Microsoft Tech Spark representative
- Quincy School District
- Grant County PUD
- Quincy Valley Rotary members
- Jupiter Networks employees

# This is how we helped an individual(s)



- Offered a 7 week Bilingual Digital Skills class to adults.
- Worked one-on-one with participants during class time.
- Helped recruited youth leaders gain experience and knowledge about 4-H, Microsoft, teaching, and speaking.
- Played a big part in bringing our community together to understand the need for accessible and affordable technology.

# Helping our community



Governor Inslee met with Quincy High School Students, Daisy Buenrostro and Nora Medina and 4-H Program Coordinator, Jeannie Kiehn, of the 4-H Tech Changemakers, sponsored by Microsoft. The program works to increase access to technology, including broadband .  
(Office of the Governor photo)

- Ten (10) adult participants learned new digital skills.
- We have formed healthy partnerships with stakeholders.
- We have knowledge of the needs of our community and have begun addressing these needs.
- Nine (9) Q.H.S. students were empowered as leaders.
- Presented presentations, participated in community events and met with the Governor of Washington – all to express the results of our surveys concerning our community’s technology access needs.

# Future plans

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- Plans for next year are to teach digital skills to adults again and internet safety to youth.
- Recruit additional students as 4-H Tech Changemakers.
- Address better advertising methods to gain participants.
- Begin classes earlier in the year because in a rural area many people are busy farming and working in agricultural production in the spring months.
- Use our Surface Pros for additional surveys and for our classes.
- Partner with school district for a district wide survey on student internet use.



# Outagamie, WI

**4-H TECH CHANGEMAKERS**  
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# Introduction- Outagamie County, WI

- 2<sup>nd</sup> Year in the project
- Redmond, Washington
  - Learned how to research our communities
- Came back ready to research
- Chose to work with Oneida Nation, a Native American tribe in Northeast Wisconsin





# Our First Steps

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- Started by talking with Oneida elders and community members
- Identified a large problem in the community
  - Oneida youth lost a sense of community
- We were happy to help solve this problem, but struggled at first to find a solution
- Eventually, after talking with the Oneida Falling Leaves (OFL) 4-H Club, we decided to use Minecraft™ as a solution
  - Connecting kids to the real world with a Minecraft™ world

# Kicking Off Our Project

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- Worked with OFL 4-H Club youth on creating a virtual world
  - This world represents the real world land that we foresee to be an Educational Center.
- The kids worked in groups with guidance from us as we envision what the land could be
- With a little tweaking from us, we eventually had a fully functioning world
  - Personal anecdote- Polar Bears (Colton)

# 4-H Land Virtual World via Minecraft™



# The Big Day

- To show off our project
  - Participated in an agricultural convention – Growing Our Future Agricultural Expo
- Connected 25 Surface Pros to a LAN Minecraft™ server running off of a Wi-Fi router
- The event was successful
  - Our survey showed that kids were satisfied with the event and understood the connection we were trying to make



# Next Steps

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- In the coming year we plan on teaching kids robotics and programming
- Our goals for the kids next year are:
  - Have them learn more computer skills
  - Increase digital literacy
  - Create a stronger sense of community within the kids
- Some teaching aids we are looking at are:
  - Raspberry Pis
  - Lego Mindstorms
  - Adafruits
  - Arduinos
  - And More...
- We are excited for the future of our project, and to work with the Oneida kids again!

# Cass, ND

**4-H TECH CHANGEMAKERS**  
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# Community Overview of North Dakota

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- Fargo is a very conservative community.
- The media agencies exaggerate stories to make new residents look bad and feel unwelcome.
- New Americans are most affected; however, North Dakota has seen an influx of residents from other parts of the United States because of the surplus of jobs.
- 70% of the North Dakota Refugee population lives in Fargo/ West Fargo.

# North Dakota- Creating Community Awareness Through Computer Science Activities with New Residents

- As a team, we will be provide computer science opportunities for new residents of Fargo, specifically new Americans.
- Our long term goal is to increase community acceptance of new residents, and help new residents feel welcomed into the community.
- Our team consists of three 4-H professionals, and five youth leaders.





# Our initiative thus far

- Our youth leaders currently work with an organization called CHARISM in Fargo.
- CHARISM provides services for underprivileged youth.
- The youth leaders lead technology activities with CHARISM STEM programs.



# Summary/ Outcomes

- The initiative will help new Americans feel welcome in our community, and also gain skills necessary for school and work life.
- The initiative will help Fargo businesses fill jobs with new residents because of a new appreciation for new residents and increase in skills.
- Cass County residents will benefit from being open minded and learning about other cultures.



# Washington County, Maine

## Community F.E.A.S.T. (Food Education and Sustainable Technology)



4-H is the youth development organization of our nation's Cooperative Extension System and USDA.

**4-H TECH CHANGEMAKERS**  
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# Our Community- Washington County

- Population: 31,593
- Most eastern point in the United States
- Lobsters and blueberries
- Larger than Delaware and Rhode Island combined
- Two Passamaquoddy Indian Reservations
- Three traffic lights



# Community Issue

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## Here's what we want to do:

Our local project is called **Community F.E.A.S.T.** (Food, Education, Agriculture, Sustainability and Technology) Our core team is made up of five teens who want to address a local aspect of food insecurity. We want to use technology to help do the following:

- Educate people and raise awareness
- Highlight good work currently happening in the community
- Highlight volunteer opportunities
- Explore how to get teens/young adults to volunteer/get involved

# Learning about our issue



Talking with local food pantries



Learning about other community organization addressing the need



Surveying the public

# This is who is affected and how



Photo credit: medium.com

- 60% of Washington County school-aged children qualify for free or reduced lunches
- One of two counties with highest rate (83%) of estimated food insecurity based on income eligibility
- The highest rate of child food insecurity at 28.1%.
- The Machias Food Pantry alone serves approximately 300 people/week

# This is what we did



interviewed local community members about the aspect of food insecurity

- led Hour of Code sessions
- created a website to highlight local farmers and volunteer opportunities
- met with the headmaster of Washington Academy





# Our partners



We are partnering with:

- Healthy Acadia
- Washington Academy
- UMaine Cooperative Extension Master Gardener Volunteers
- Local food pantries



4-H is the youth development organization of our nation's Cooperative Extension System and USDA.



# This is how we helped an individual(s)



Hour of Code Workshops

# Helping our community

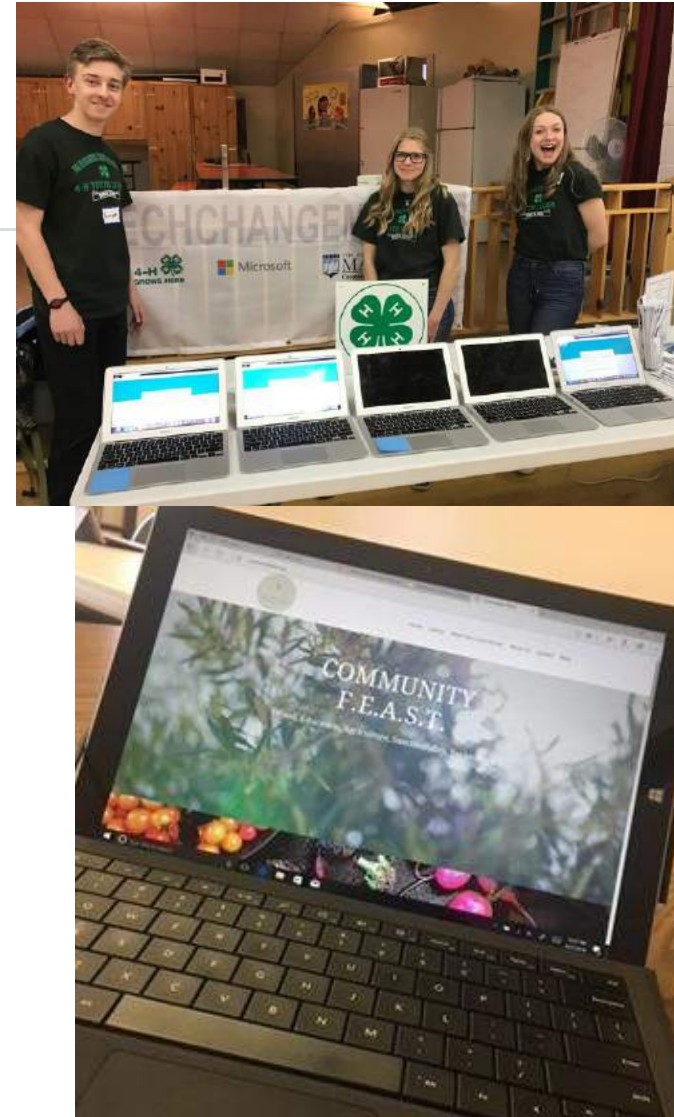


Growing food,  
using technology to connect community,  
making a difference!



# Future plans

- Bring Washington Academy gardens and greenhouses back
- Donate produce to local food pantry
- Offer a gardening 4-H club
- Make our Community Feast website more accessible
- Get more young people volunteering for this cause



# Thank You.