

# **CTE, Special Education, and VR: Increasing awareness and engaging students for employment**

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NTACT:C Capacity Building Institute

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# Session Purpose

- We will show how data have been analyzed to identify where students are utilizing CTE programs.
- We will share information and strategies that can be implemented at the local level to increase awareness and engage students in competitive integrated employment outcomes.
- We will describe how vocational rehabilitation and CTE can be used to leverage opportunities for students who experience disabilities.

# Intended Outcomes

Participants will learn how to employ CTE and VR services to improve post-school employments outcomes.

Participants will see how Maryland has used their PSO data to determine where students are engaging in CTE programs.

# Acknowledgements <sup>(2)</sup>

- Matthew Bell, Co-PI and Director of Oregon Career Information Systems (CIS), University of Oregon
- Corbett High School STEM Team & Brookings Harbor High School STEM Team
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# Acknowledgements <sup>(3)</sup>

- SATC-State Agency Transition Collaborative
  - Created from NTACT
  - MSDE (State and Local), CTE, DORS, DDA, BHA, University of MD, DoL, MCIE, Parents Place of MD, MD Department of Disabilities
- Division of Rehabilitation Services (VR)
- MD Transition Steering Committee
- MD Career and Technology Education
- Worcester County Public Schools
  - Dr. Brian Phillips, Coordinator of CTE
  - Worcester Technical High School, Principal Tom Zimmer

# Land Use Plan Worcester County, MD

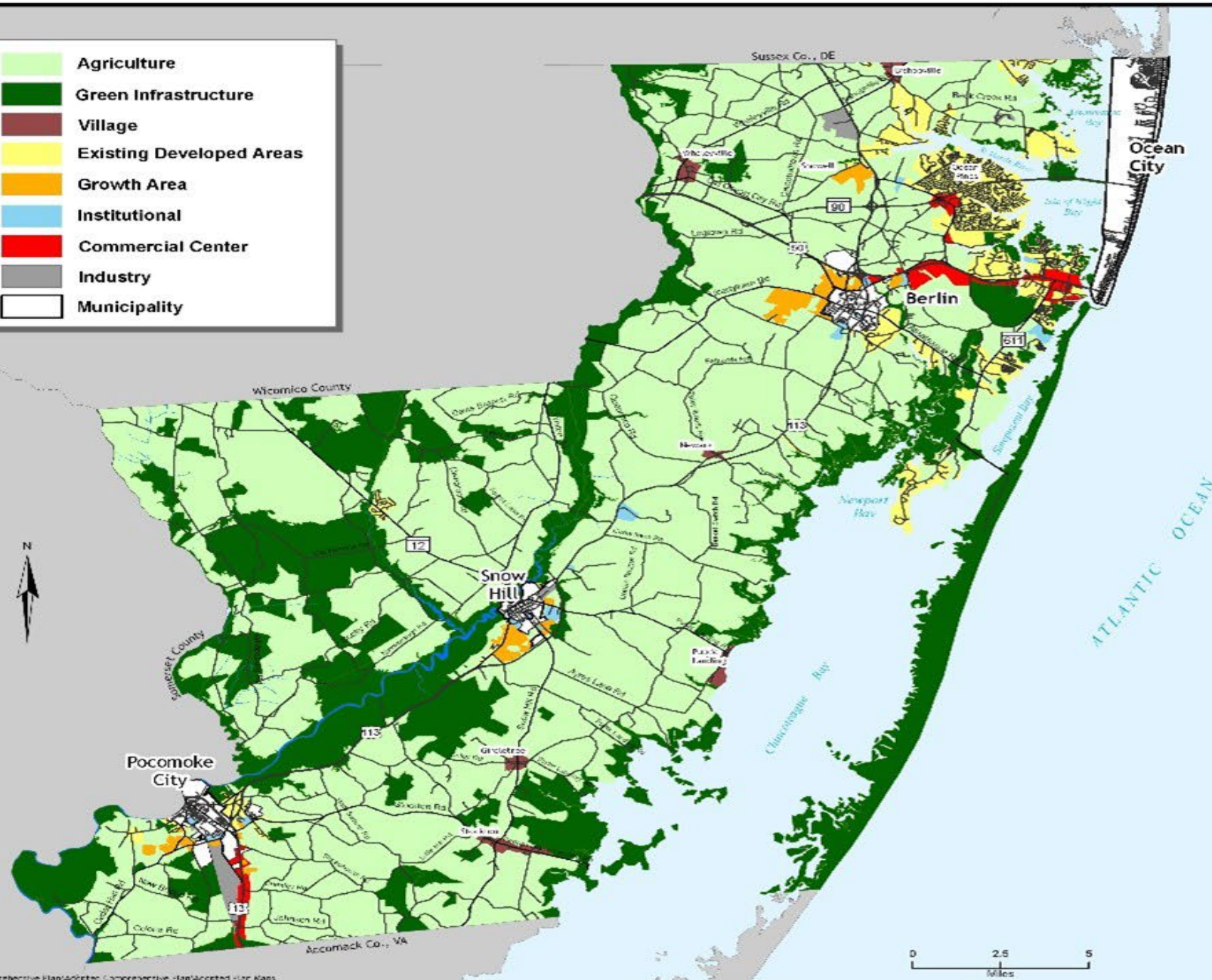
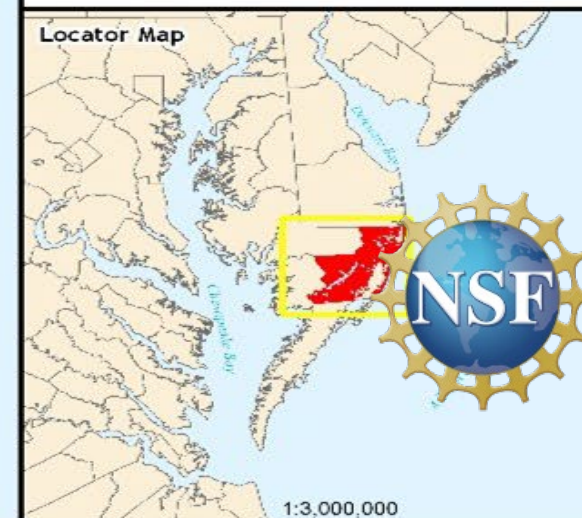
Map prepared by the Department of Comprehensive Planning, March 2008.

Source: Worcester County Department of Comprehensive Planning, March 7, 2008

This map is intended for planning purposes only and not for regulatory use.



Locator Map



0 2.5 5  
Miles

Why hidden STEM, Why CTE?  
Why Students with Disabilities?

# Why hidden STEM and CTE?

## **STEM Occupations**

- 2017 – 9 million jobs in STEM fields
- \$87,570 average wage
- 8.8% projected growth between 2018 -2028

## **Non-STEM Occupations**

- \$45,700 average wage of
- 5.0% projected growth between 2018 -2028

# Why Hidden STEM?

## **STEM Jobs**

- Typically require at least a bachelor's degree in multiple S-T-E-M fields;
- Are highly clustered in certain metropolitan areas (e.g., Seattle, Silicon Valley)

## **Hidden STEM Jobs**

- Typically require less than 2 years of additional education with focus on one or two S-T-E-M fields
- Are widely available in rural and urban areas

# Examples of Hidden STEM/CTE Occupations

- Aircraft Mechanics and Service Technicians
- Automotive Master Mechanics
- Camera Operators, Television, Video, and Motion Picture
- Cement Masons and Concrete Finishers
- Commercial Divers
- Electricians
- Embalmers
- Forest and Conservation Technicians
- Heating and Air Conditioning Mechanics and Installers
- Medical Equipment Preparers & Repairers
- Physical Therapist Assistants
- Respiratory Therapists & Technicians
- Tax Preparers
- Technical Writers
- Telecommunications Equipment Installers and Repairers
- Tool and Die Makers
- Tree Trimmers and Pruners
- Veterinary Assistants and Laboratory Animal Caretakers
- Water and Wastewater Treatment Plant and System Operators
- Welders, Cutters, and Welder Fitters

# Maryland & Worcester County CTE Labor/Market Trends: 2018-2028

- The Highest Annual Openings thru 2028:
  - Food Services
  - Retail
  - Secretaries/Admin assistants
  - Office Clerks
  - Housekeeping, Janitors
  - Accountants
  - Registered Nurses

Source: <https://www.dllr.state.md.us/lmi/iandoproj/wias.shtml>

## Lower Shore Workforce Region Long Term (2018 - 2028) Occupational Projections

Occupation (Keyword Search)

Annual Growth Rate

-10.2%

7.2%

Annual Total Openings

0

547

| Occ Code | Occupation                                       | A <sup>+</sup><br>2+ | Growth<br>Openings | Growth<br>Rate | Annual<br>Ope.. | Annual<br>Growth | Annual<br>Growth .. |
|----------|--------------------------------------------------|----------------------|--------------------|----------------|-----------------|------------------|---------------------|
| 41-2011  | Cashiers                                         |                      | 0                  | -2.9%          | 547             | 0                | -0.3%               |
| 35-3031  | Waiters and Waitresses                           |                      | 0                  | 7.2%           | 430             | 0                | 0.7%                |
| 35-3021  | Combined Food Preparation and Serving Wor..      |                      | 0                  | 20.1%          | 396             | 0                | 1.9%                |
| 41-2031  | Retail Salespersons                              |                      | 0                  | -2.4%          | 380             | 0                | -0.2%               |
| 43-6014  | Secretaries and Administrative Assistants, Ex..  |                      | 0                  | -3.5%          | 251             | 0                | -0.4%               |
| 35-2021  | Food Preparation Workers                         |                      | 0                  | 10.5%          | 200             | 0                | 1.0%                |
| 43-9061  | Office Clerks, General                           |                      | 0                  | 0.4%           | 176             | 0                | 0.0%                |
| 35-9011  | Dining Room and Cafeteria Attendants and B..     |                      | 0                  | 8.2%           | 176             | 0                | 0.8%                |
| 43-4051  | Customer Service Representatives                 |                      | 0                  | -5.0%          | 170             | 0                | -0.5%               |
| 35-3011  | Bartenders                                       |                      | 0                  | 7.7%           | 169             | 0                | 0.7%                |
| 37-2012  | Maids and Housekeeping Cleaners                  |                      | 0                  | -0.4%          | 166             | 0                | 0.0%                |
| 13-2011  | Accountants and Auditors                         |                      | 0                  | 11.8%          | 148             | 0                | 1.1%                |
| 35-1012  | First-Line Supervisors of Food Preparation an..  |                      | 0                  | 11.0%          | 145             | 0                | 1.1%                |
| 35-9031  | Hosts and Hostesses, Restaurant, Lounge, a..     |                      | 0                  | 11.9%          | 143             | 0                | 1.1%                |
| 11-1021  | General and Operations Managers                  |                      | 0                  | 10.1%          | 142             | 0                | 1.0%                |
| 37-2011  | Janitors and Cleaners, Except Maids and Hou..    |                      | 0                  | 7.6%           | 141             | 0                | 0.7%                |
| 41-1011  | First-Line Supervisors of Retail Sales Workers   |                      | 0                  | -1.9%          | 140             | 0                | -0.2%               |
| 35-2014  | Cooks, Restaurant                                |                      | 0                  | 22.1%          | 140             | 0                | 2.0%                |
| 43-1011  | First-Line Supervisors of Office and Administr.. |                      | 0                  | 1.2%           | 129             | 0                | 0.1%                |
| 43-4171  | Receptionists and Information Clerks             |                      | 0                  | 8.1%           | 120             | 0                | 0.8%                |
| 29-1141  | Registered Nurses                                |                      | 0                  | 15.3%          | 119             | 0                | 1.4%                |
| 21-1093  | Social and Human Service Assistants              |                      | 0                  | 20.3%          | 117             | 0                | 1.9%                |
| 43-5081  | Stock Clerks and Order Fillers                   |                      | 0                  | 0.3%           | 116             | 0                | 0.0%                |
| 35-9021  | Dishwashers                                      |                      | 0                  | 3.5%           | 113             | 0                | 0.3%                |

# Why Students Who Experience Disability?

## **People who experience disability are ...**

- less likely to complete or graduate in STEM majors in college
- more likely to be unemployed or underemployed
- more likely to be living in poverty and receiving public assistance

## **Young adults who experience disability are ...**

- less likely to attend postsecondary education than their nondisabled peers, further limiting their access to higher wage careers

# Barriers to hidden STEM/CTE for Students

- Lack of STEM experiences
- Inaccessible classroom or school environments
- Lack of access to STEM curriculum
- Contributing factors:
  - Reliance on substantial memorization
  - Complex and dense STEM content that places significant demands on working memory and attention
  - Limited access due to negative stereotypes and expectations
  - Graduation requirements limit the ability to take CTE classes

# What Students Need to be Ready for STEM and CTE in College & Career

- Rigorous curriculum
- Work-based experiences
- Partnerships with and experiences in community businesses industries, including Career-Technical Education
- Applied courses and learning opportunities:
  - in-school and out-of-school field trips; informal STEM learning
- STEM/CTE Identity

## CLUSTER ANALYSIS

Year

2022

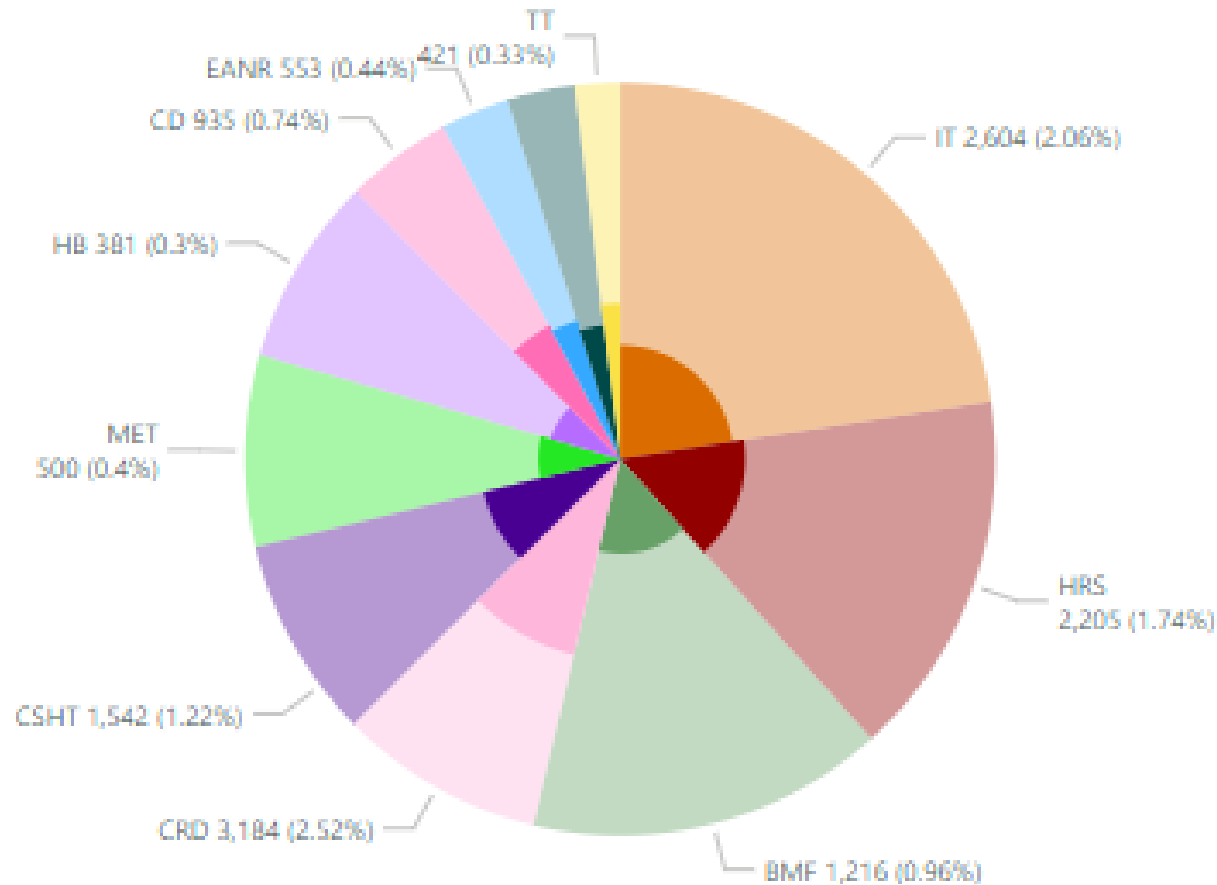
Local School System

State of Maryland

Source:

Edctdata.org

### Student Enrollment By Cluster



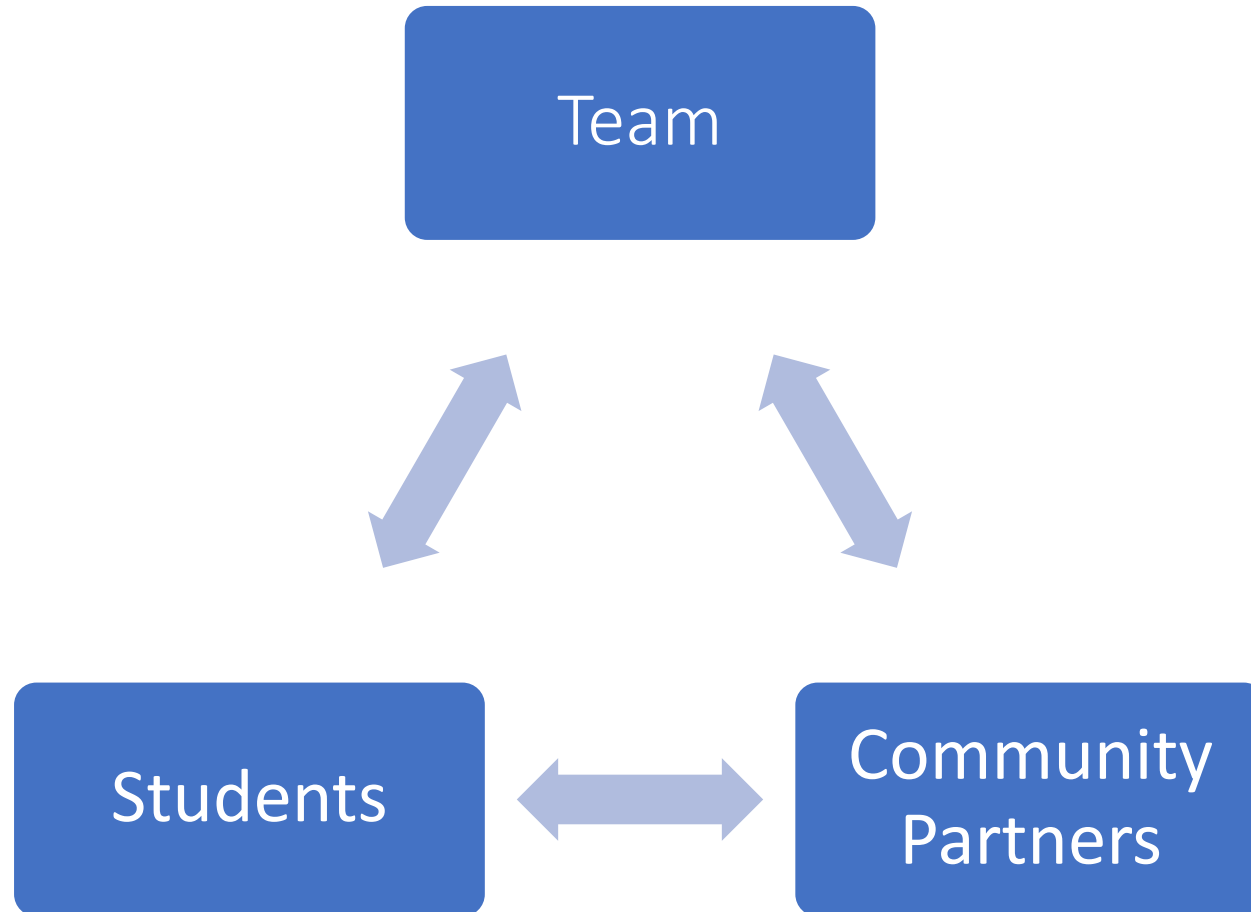
### Top Clusters of SWD:

- .. CRD
- .. Environmental, Ag., Natural Resources
- .. Consumer Services, Hospitality, Tourism
- .. Human Resource Services

# Strategy #1: Form a Team

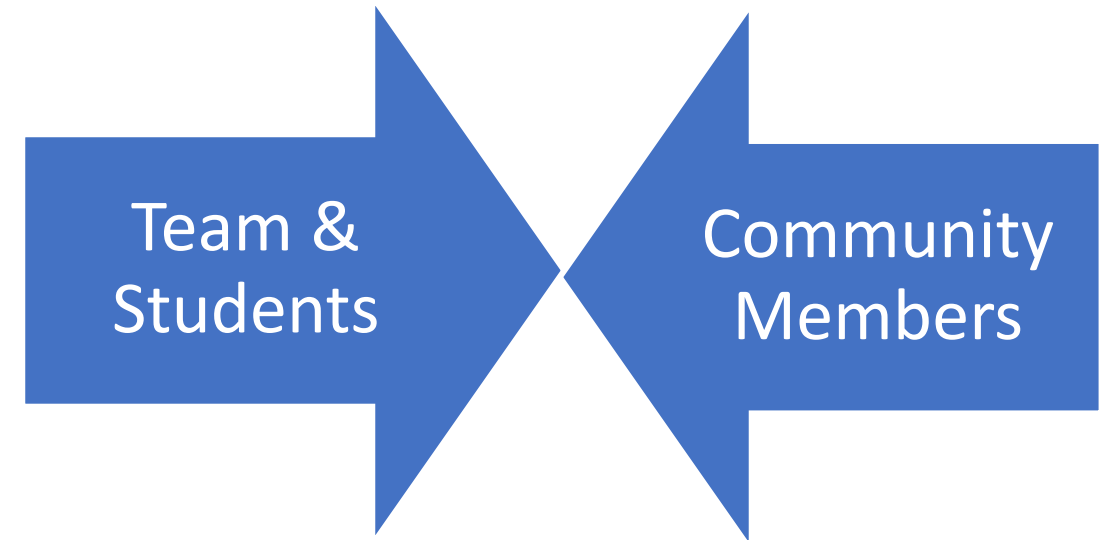
- School and Community Team
  - IEP Teams
  - CTE Program Advisory Committee Teams
  - Active membership in Local Chambers of Commerce
  - Worcester Transition Implementation Team
  - CTE, Guidance, Special Educators, System Administration, General Educators

## Strategy #2: Increase Awareness



# Strategy #2: Increase Awareness <sup>(2)</sup>

- **Team & Students' Awareness**
  - CTE/hidden STEM/businesses
  - Advantages of CTE/hidden STEM occupations
  - What skills are needed to work in hidden STEM/CTE occupations
  - Tours in early years (3<sup>rd</sup> grade)
  - Open Houses
- **Community Members' Awareness**
  - Available Workforce
  - How to be involved in school activities



# Strategy #3: Learn What's Available

- **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats Analysis
  - What CTE and hidden STEM courses are offered
    - Which courses are students (not) taking, and why?
  - What CTE and hidden STEM related extracurricular activities are available?
    - Which extracurricular activities are students (not) engaging in, and why?

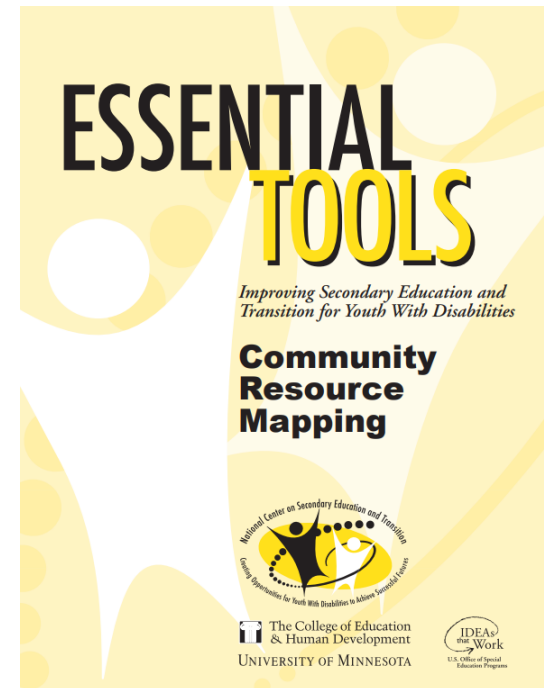
# Strategy #3: Learn What's Available con't

- Access to all CTE completer programs with support
- Work-Based Learning Experiences with support
  - During school
  - After-School
  - Summer

Personal access to DORS Counselor at Worcester Tech

# Strategy #4: Get to Know Your Community

- Community Mapping
  - **Purpose:** ... to improve education, workforce development, and economic development in a community by aligning available services and resources, streamlining those services and resources, and identifying areas of need.
  - **Our Purpose:** To increase the STEM Team's knowledge of hidden STEM businesses, resources, and opportunities that exist in their community.



# Strategy #4: Get to Know Your Community con't

## Expanding the Community Map and Linking it to Occupations

- Select a business from your community map:
  1. List in-school activities or classes that students can become involved in related to that business (i.e., make linkages to the school curriculum). Be specific.
  2. List activities that students can do at that site to learn about science, technology, engineering, or math needed for that occupation. Be specific.
  3. List ways the business can be a partner resource to students and/or school (e.g., be a guest speaker, provide equipment).

## Strategy #5: Learn What Employers Want and Need

- Don't worry about specific work skills
- Focus classroom instruction on soft skills:
  - Emphasize the importance of wanting to work, and work ethic
  - When to be and not to be on their phone
  - Call in when they are going to miss work or be late
  - How to dress for the job they are applying for

## Strategy #5: Learn What Employers Want and Need <sup>(2)</sup>

- Worcester County Public Schools
  - PAC Committees
- Chambers of Commerce (ex. Business Needs Assessment)
- American Job Centers
- Secondary Tri-County Transition Council

# Strategy #6: Learn What Students Want and Need

- Extracurriculars: extra work and extra stress
  - “Can’t participate in extracurricular like ISEF [International Science and Engineering Fair] because it adds to my workload.” ~Mack, Junior
  - “I’m gonna be missing class and so that’s missed information. Now I’m behind, now I’m trying to catch up again, and so something that could genuinely be fun and an interesting experience now becomes not only the work of that project but now the work that you’re missing in class.” ~ Trenton, Senior

# Strategy #6: Learn What Students Want and Need con't

- Person-Centered Transition Planning
  - ASSESSMENTS
  - Parent Input
  - Access to CTE
  - Work-Based Learning Experiences through the school or MOU with DORS
  - Career Fairs
  - Direct access to DORS Counselor
  - Teach Self-Determination/Advocacy Skills

# Strategy #7: Engage Students

- Have students lead their learning experiences
  - Research, plan, and take field trips and schedule guest speakers related to their interest areas

**Community Mapping: STEM Career Opportunities**

Group Career Cluster Area of Interest: Farming, Fishing, and Forestry

In this activity, you will plan and prepare our class to take a field trip into your community to identify STEM career related opportunities. In groups please list at least 5 STEM Business/Companies/ Community Resources that may provide our class with community-based learning activities such as a field trip or guest speaker.

**Group Role and Responsibilities:**

                     Recorder- Person who completes this form. It will be emailed to you.

                     Primary Researcher-Person who uses the laptop and or cell phone to look up STEM Community

**Contact Information**

                     Communications Officer- Person who makes contact with STEM Community Contact

                     Transportation & Planning Expert- Person who will be coordinating transportation and calendars.

**Community Mapping: STEM Career Opportunities**

Group Career Cluster Area of Interest: Farming, Fishing, Forestry

Alexandre Farm Dairy 707-487-1000

| STEM Community Business/Company Name, Address, Phone Number and Primary Contact Person | STEM Learning Areas (Is it high Science, Technology, Engineering, and/or Math) | Links to In-School Curriculum, Clubs, and Classes offered at BHHS | STEM Career Exploration Opportunities Will this be a field trip or guest speaker? | Dates Available (Fridays Only) 2:00-3:15 |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------|
| <u>Alexandre Family Farm 8317 Lower Lake Road Crescent City CA 95531 707-2487-1000</u> | Engineering                                                                    | YIP Youth Training Program                                        | field trip                                                                        | 8AM-5PM through week days                |
| <u>39217 Elkins Blvd Archie Gold Branch 97068 77444 541-247-3400 Ranger District</u>   | Science                                                                        | Marine Biology                                                    | Guest speaker                                                                     | 24 hours                                 |
| <u>Wild River Fishery 541-813-1082 77415 235 S Hazel St</u>                            | Science Engineering                                                            | Marine Biology                                                    | Guest speaker                                                                     | Open 24 Hours                            |
| <u>Arctic Beach State Recreation 37000 15 800-551-7619 101 21455</u>                   | Science                                                                        | Marine Biology                                                    | field trip                                                                        | 9am-5pm                                  |
| <u>BC Fisheries Breakways, 11263 Harbor Dr. Astoria, OR 97103 (503) 325-4368</u>       | Technology Engineering                                                         | Marine Biology                                                    | field trip                                                                        | 8am-5pm                                  |

*Handwritten notes on the left margin: "Marine 707-487-1000" and "707-487-1000" with arrows pointing to the first two rows of the table.*

*Handwritten note at the bottom left: "S" with an arrow pointing to the last row of the table.*

Adapted from Essential Tools: Community Resource Mapping University of Minnesota

# Strategy #7: Engage Students <sup>(2)</sup>

- **SkillsUSA** activities:
  - Develops positive attitudes, self-esteem
  - Empowers students to excel
  - Gives students a head start in developing valuable professional skills such as communications, interpersonal abilities, time management, teamwork and more
- **SkillsUSA** works hand-in-hand with business and industry; students get the skills employers want.

# Strategy #7: Engage Students

- There are 4 competitions for students in CTE:
  - **Action Skills:** Demonstrate a skill in the program area of study
  - **Employment Applications:** Submit Portfolio, Complete Job Application, and 15-minute job interview
  - **Building Maintenance:** Demonstrate custodial skills in various ways
  - **Community Action Project:** Develop a project with a peer that benefits the community and present the project from beginning to end

# Strategy #7: Engage Students <sup>(3)</sup>



# Strategy #8: Make Opportunities Visible to Students

- Field Trips: in- and out-of-school
- School-wide bulletin board
- Flyer advertising opportunities
- Expand clubs and extra-curricular opportunities



## Mt Hood Community College Introduction to Applied Technology

Automotive, Machine Tool, Welding, Mechatronics, Engineering Technology, Natural Resources, Fisheries and Apprentice Programs

**WHEN:** Fall 2022, Every Friday Morning Class  
includes 5 two hour lecture days and 5 four hour lab days.

**WHERE:** Mt. Hood Community College  
in the Technology building

**COST:** \$278.00 Paid for by Corbett

This course has 5 lab days where you will identify your interest, skills and learn how to apply knowledge in choosing the best career for you. There are also 5 lab days where you tour a department, learn about the workplace environment, physical requirements and do a hands-on project.

Contact Cathy Noles [cnoles@corbett.k12.or.us](mailto:cnoles@corbett.k12.or.us)

# Strategy #9: Engage Community

- **Go to the community:** community college; trade shows; Accessing Union Apprenticeships;
  - How do students access those opportunities? Is dual enrollment or online/virtual attendance an option?
- **Explore related opportunities**
- STEM Hubs → Physics Professor and Jet Propulsion Laboratory Ambassador → Student scientist for a NASA looking at data from Pan-STARRS telescope for unidentified comets and asteroids



# For More Information



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Please take a moment to submit your session  
**Quick Reaction**

