

Enriching and accelerating learning

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**BUILDING A ROBUST
WORKFORCE**

**RICHFIELD
PUBLIC SCHOOLS**

**Teaching a Pipeline Course in
High School**

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Enriqueciendo y acelerando el aprendizaje



RICHFIELD
PUBLIC SCHOOLS

ROBUST WORKFORCE - the elephant in the room

What Richfield is Doing

Inspiring and Empowering Young Women and Students
of Color

Connecting with Students

What Can You Do

Connect with Secondary Education

Studies All Point to the Need for Equity



“Engaging women in their freshman year in introductory engineering courses, projects, and research that demonstrates how engineering is and has been used to solve some of society’s most difficult challenges can help them stay motivated to graduate with an engineering degree. Engineering departments can help motivate women to major in engineering and stay engaged throughout their college careers by providing real-life examples of the societal benefits of engineering.”

[~Bosart and Bharti \(2017\), University of Florida](#)



What Richfield is Doing

Concurrent

Enrollment

- University of Minnesota Partnership, “College in the Schools (CIS)”
 - 4 Science Courses
 - 4 Math Courses, others
 - Equity and access to college credits.

- “Climate Crisis: Implementing Solutions”
 - 3 credits lecture, 1 credit lab
 - Solar, Wind, Emerging Tech + labs
 - Additional support and time over an academic year



What Richfield is Doing



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Solar Suitcases



- DC circuits, batteries, and PV
- Addresses social injustice for energy poor regions of the world: Kenya, Uganda, Indonesia
- Directly benefits students

What Richfield is Doing



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Aquaponics

- Mutualistic Sustainability
- Pumps Powered by PV and battery
- Two of these Systems in the Hallway
- “Salad Party”
- Fish are 4 years old!

- Adding Hydroponics, Vertical Gardens, and Outdoor Gardens



How has “Climate Crisis: Implementing Solutions” changed your thinking?

- “...the climate crisis doesn't have to be so pessimistic and that there is solutions to the problem”
- “I am focused more on problem solving than I was before”
- “I have always thought about climate change but this course showed me how urgent it actually is.”
- “I am even more interested in solar wind and nuclear energy and ways to ... install them.”
- “This course has changed my way of thinking when it comes to everyday activities that I do. Before taking this class I had not thought about solar energy and gas emissions. Now after having taken 3/4 of the class I consider more about my energy usage since I tend to use a lot of energy.”

If you are willing to keep your career options open, what would make you more interested in pursuing a career in engineering aimed at addressing the crisis?

- “if my first option doesn’t work this would be one of my top options”
- “probably learning about more jobs that people can work for so that more students can know what they are getting into once they have gone to college.”
- “Learning more in depth about what people in those careers do and work on.”
- “I would want to know the labor and pay because I would want to sustain my life, and still able to help address the globe issues.”
- “Knowing what jobs there are/will be depending on what I study.”

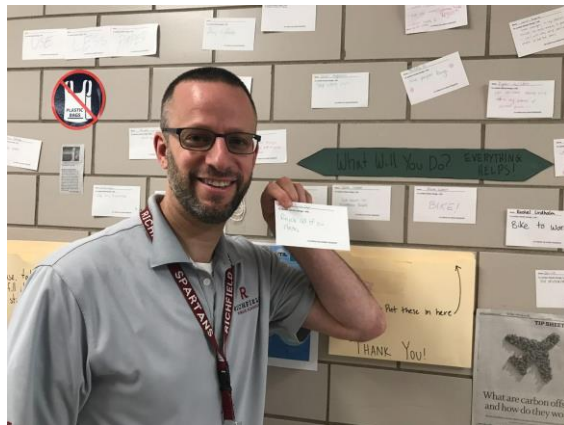
What Richfield is Doing



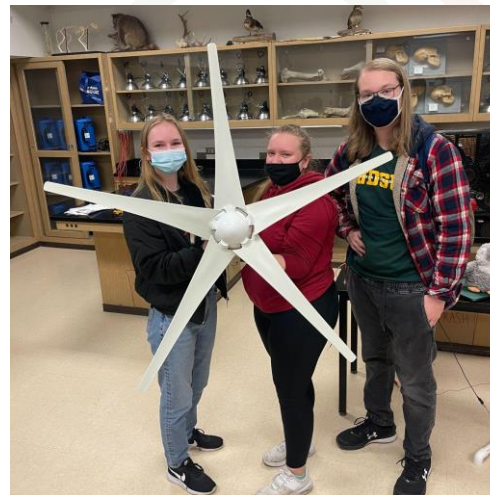
Sticker Fundraiser



- Focus on Sustainability
- Projects
- Youth Climate Summit at the Capital
- Fundraising
- Student Leadership
- Engage lower grades



Climate Pledge Wall



Clothes Drive

What Richfield is Doing

Annual Boundary Waters Trip

- Just Plain Fun
- Connect with students outside of the classroom
- What are we protecting?
- Usually 24, this year 46!



What are YOU Doing?

Outreach!

- Promote Secondary and Community College Programs
- Don't make it all about engineering
- Connect with and empower the students
- Gender balance will bring the robust workforce