

Advanced Waste Processing System

By: Bulldog Boatworks



“Garbage management is an ‘all hands’ evolution. Everyone wants to be a good steward of the environment.”

- Captain George D. McCarthy, USNS Comfort

- Ships produce a lot of waste
- USNS Comfort, hospital ship
- Contaminated waste processing
- Acceptable waste
- Food waste & storage
- Manpower and time

Introduction



Mission: This humanitarian ship strives to medically care for people in various situations, including the capabilities to perform simple procedures and surgeries.

- Primary Mission: Navy's task forces
- Secondary Mission: Civilians in disaster areas
- 1,000 hospital beds
- 12 operating rooms
- 1,280 crew members
- 894ft long
- Haiti Earthquake, Hurricane Katrina



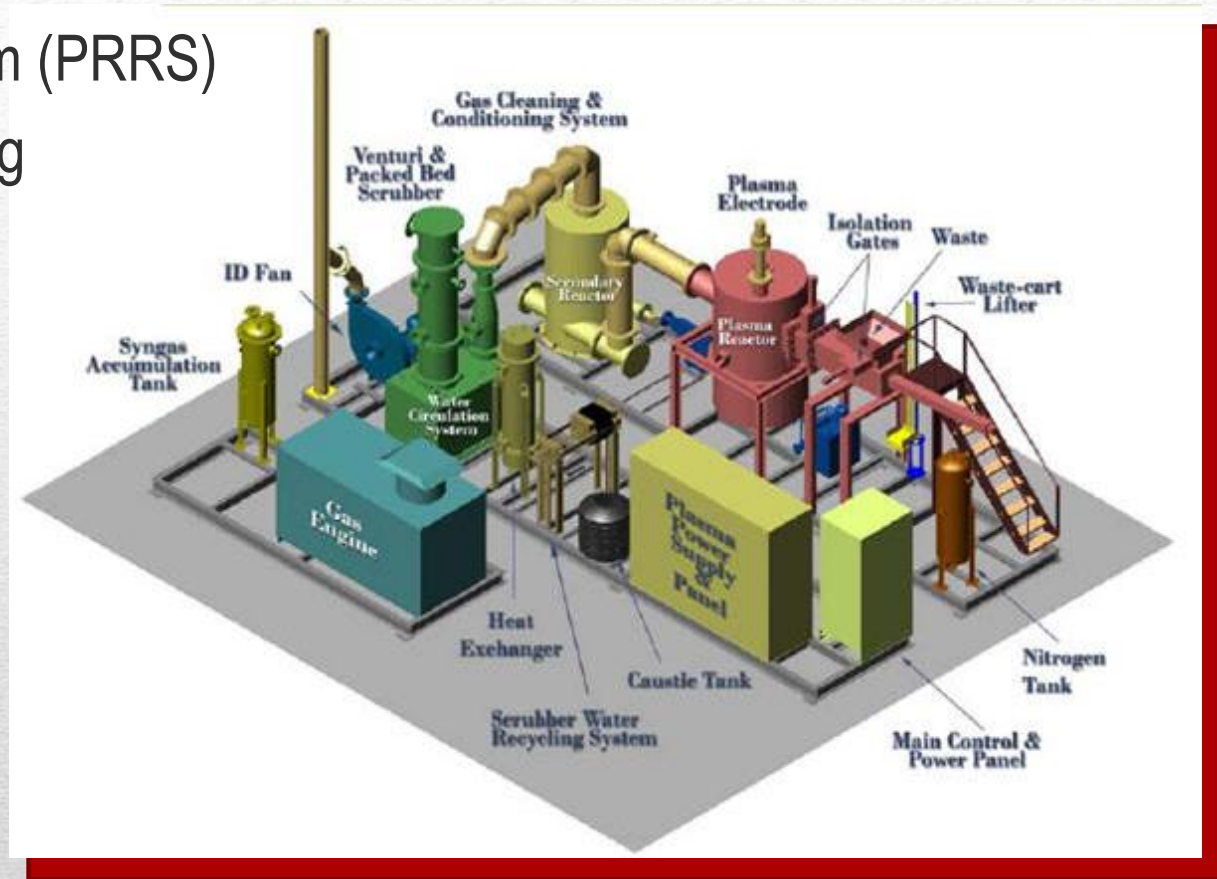
USNS Comfort

- Two incinerators: General Waste and Pathological
- Unacceptable waste
- Shipboard Pulper & Plastic Processing Unit
- Flaws in Current Waste Processing System



Current Waste Processing System

- Plasma Resource Recovery System (PRRS)
- Byproducts: Synthetic Gases & Slag
- Environmentally Friendly
- Space Saved
- Manpower
- Easy-to-operate



The Bulldog Boatworks' Solution

	Current Systems (Incinerators, Shipboard Pulper, and Plastic Processing Unit)	Plasma Resource Recovery System (PRRS)
Byproducts	Ash, pulped waste dumped into ocean, and plastic discs	Synthetic Gases and Slag
Fuel	Diesel fuel	Synthetic Gases
Space	Size of two incinerators, shipboard pulper, and plastic processing unit	¼ the size of the incinerator
Manpower	A lot of manpower sorting trash and running system	Minimal manpower on sorting and operating system
Acceptable Materials	Municipal waste, food waste, some medical waste	Anything but high – level radiation

Currently, the crew and patients onboard the USNS Comfort produces about 2.4 metric tons of garbage each day.

Comparison of Systems

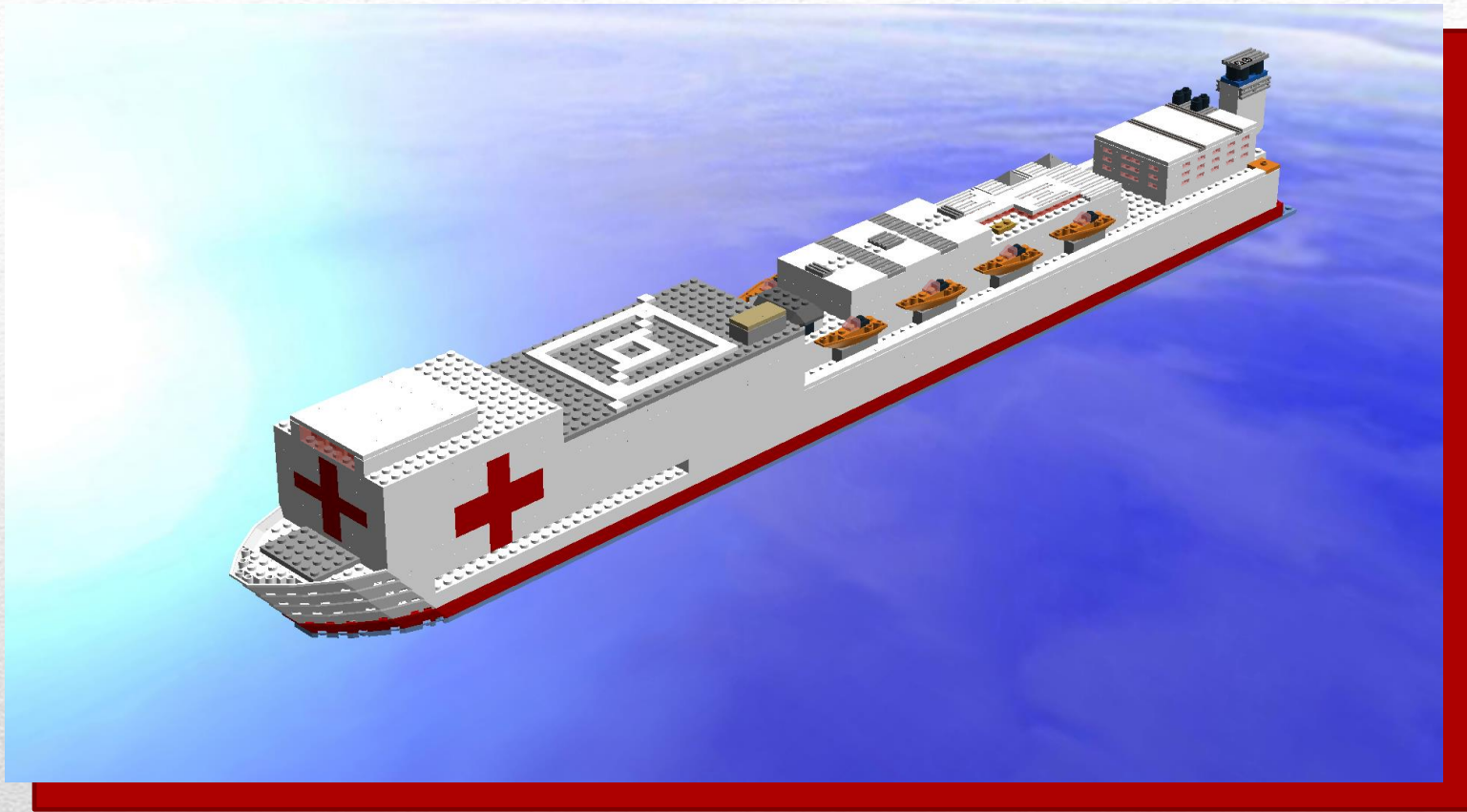


Gerald R. Ford Aircraft Carrier



Air Force Special Operation Command
Base, Florida

Navy/DoD's Current Use of The PRRS



LDD Model



For this improvement on the USNS Comfort, there are special skills needed. Therefore, we chose five occupations for the installment of the PRRS.



Occupations



- \$90,000 annually
- Problem-solving & math skills
- Bachelor's degree
- High wage & supervisory positions
- Experiences new challenges

Marine Engineer



- \$58,000 annually
- Knowledge of tools for PRRS
- Associate's degree & 4-5 years apprenticeship
- Installs pipes aboard USNS Comfort
- Figure out exact proportions

Pipefitter



- \$32,000 annually
- Physically fit
- Educated in electrical studies
- Learn about hazards of electrical machines
- High-school diploma or GED
- Follows safety codes and regulations

Marine Electrician



- \$42,000 annually
- Have heat-withstanding capabilities
- Possess patience & computer knowledge
- Use a mirror to weld metals in small spaces
- Pass a welder test and have a high-school diploma
- Join together different metals

Welder



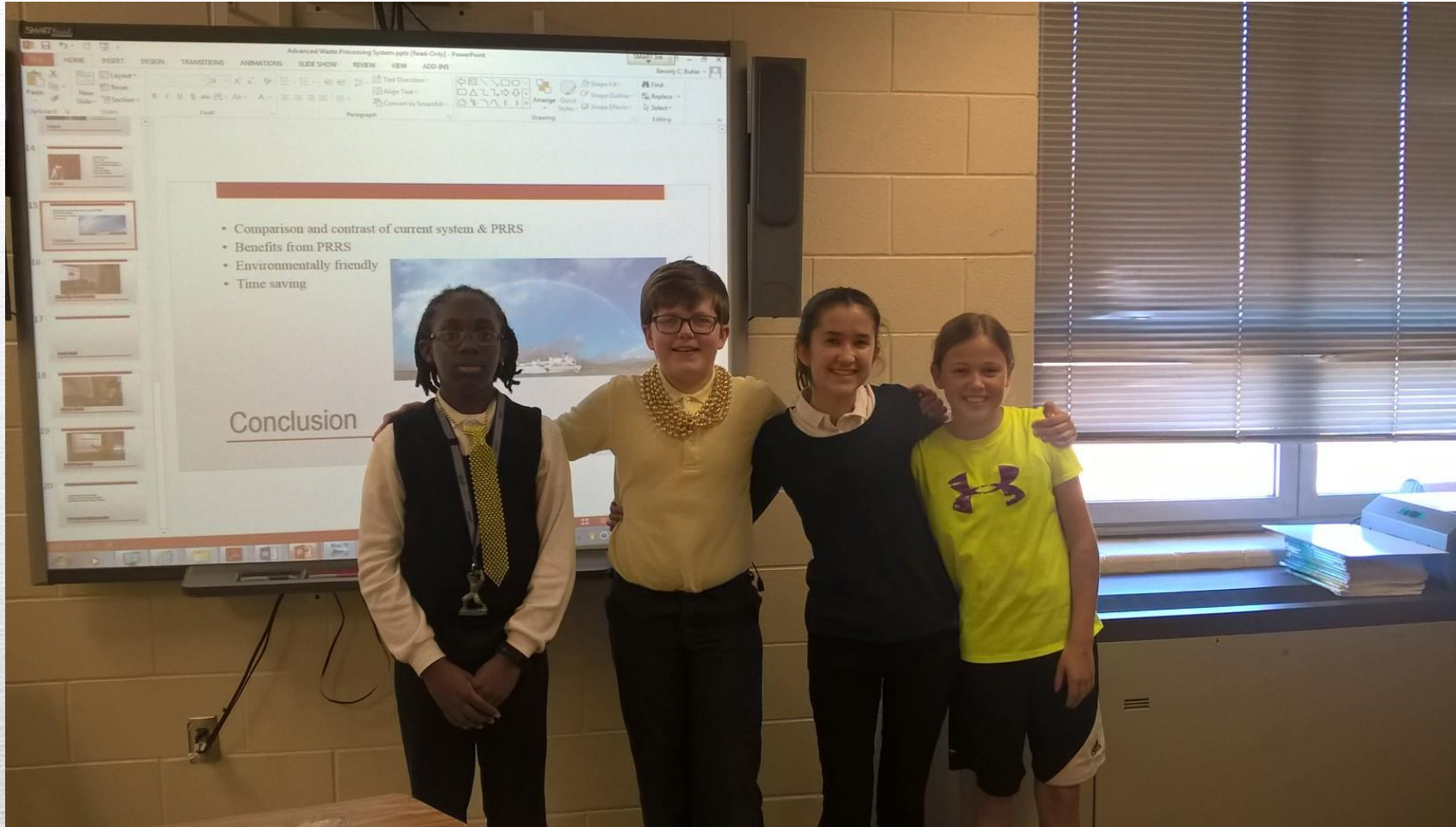
- \$39,000 annually
- Eye for detail
- Operate hand-held spray guns
- Preps the PRRS for exposure to substances
- Color-codes pipes
- High-school diploma
- Adapt to different ship environments

Painter

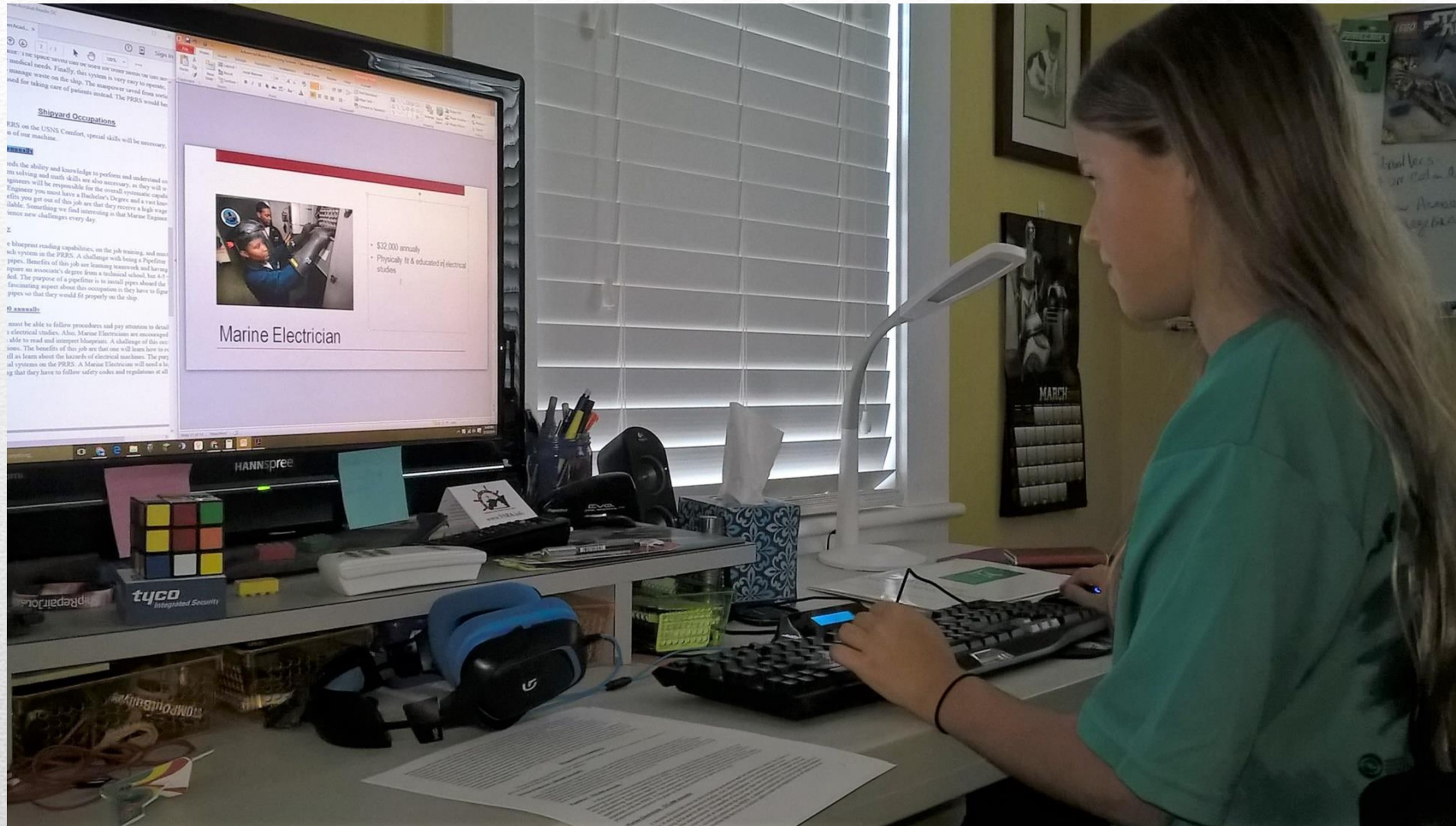
- Comparison and contrast of current system & PRRS
- Benefits from PRRS
- Environmentally friendly
- Time saving



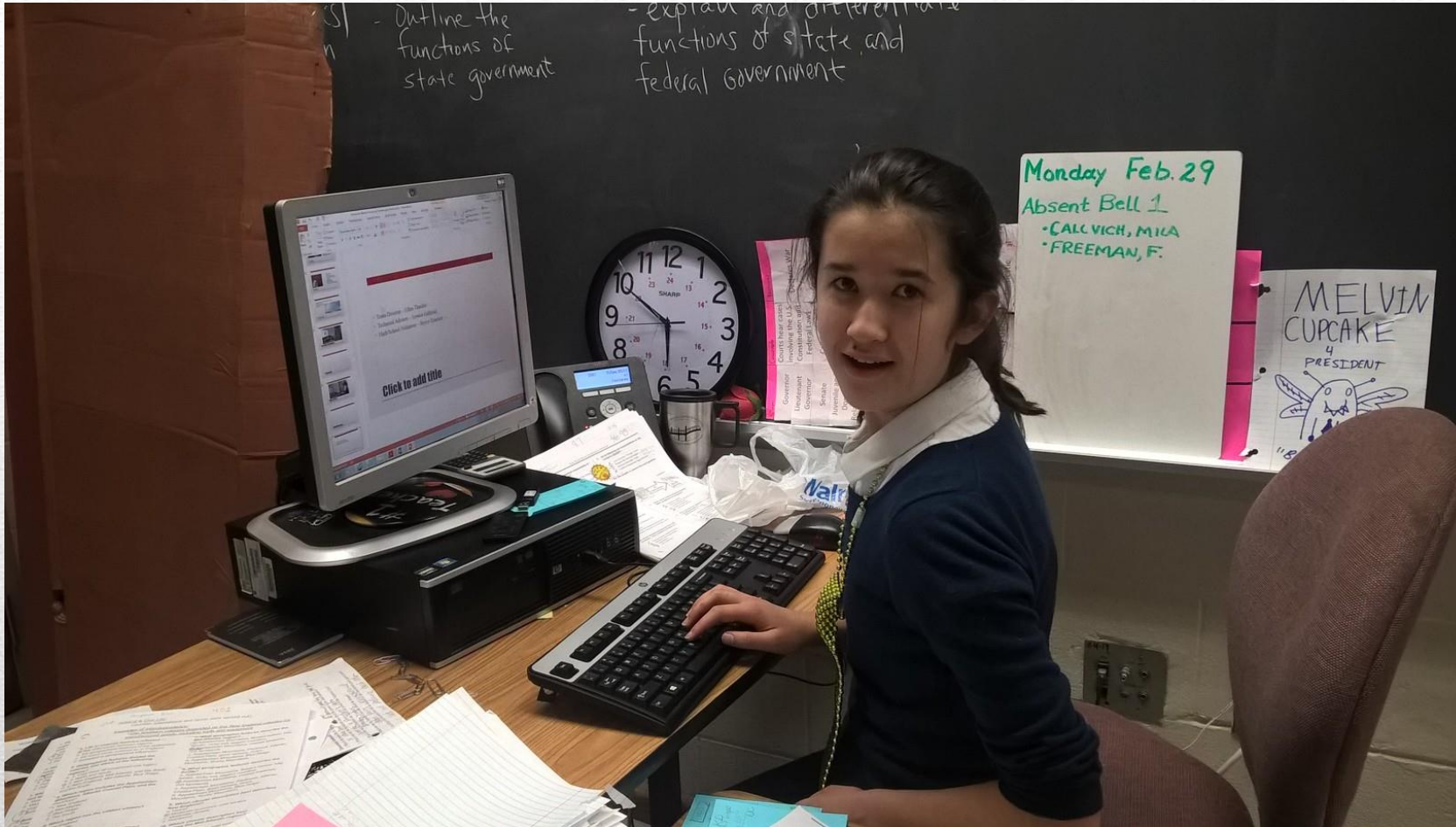
Conclusion



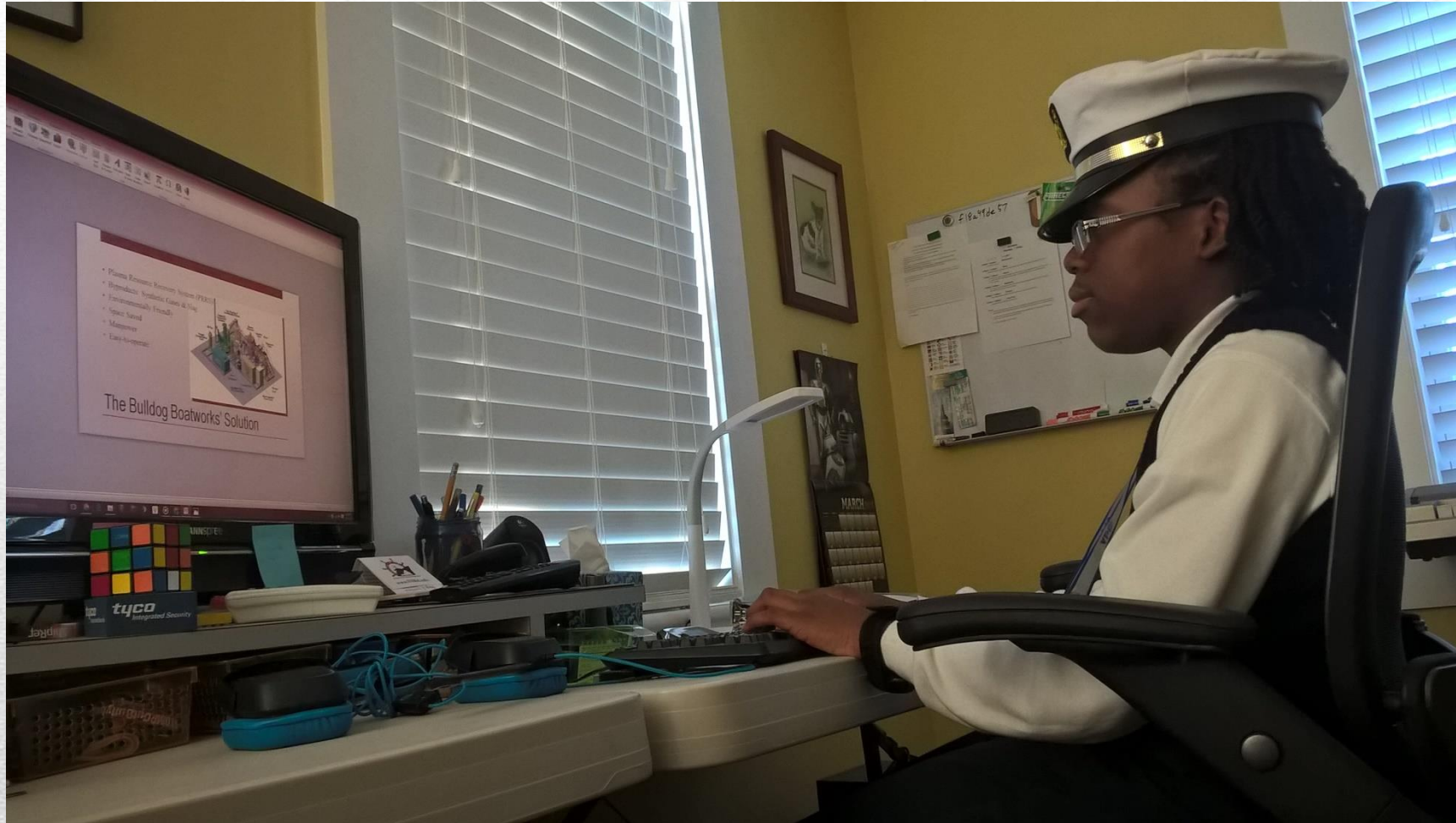
The Bulldog Boatworks Team



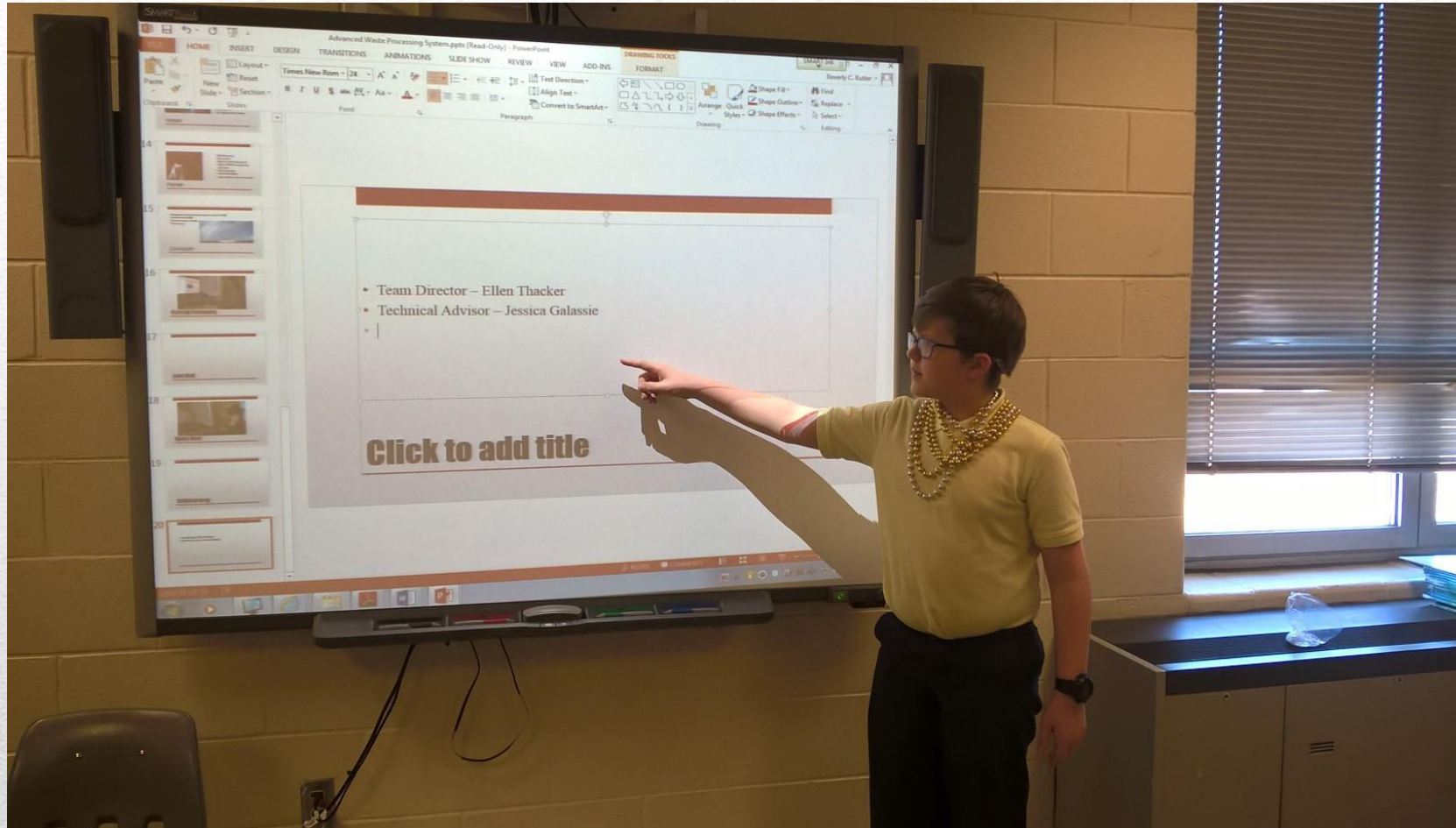
Cassidy Fernandez



Jumi Hall



Myles Noel



Seth Vawdrey

- Team Director – Ellen Thacker
- Technical Advisor – Jessica Galassie
- High School Volunteer – Bryce Thacker

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