

School Name: Switzerland Point Middle School

Project Title: Innovation International

Advisor's Name: Ricardo Haragutchi

Summary: Innovation International has the main objective of mentoring disadvantaged students worldwide in the STEM area, providing them skills and knowledge that will help them thrive in life. To be able to do that, Innovation International is creating a series of STEM projects that will be used as a breeding ground of innovation that will not only provide these important skills to the students and community, but it will also help in the participation in STEM competitions.

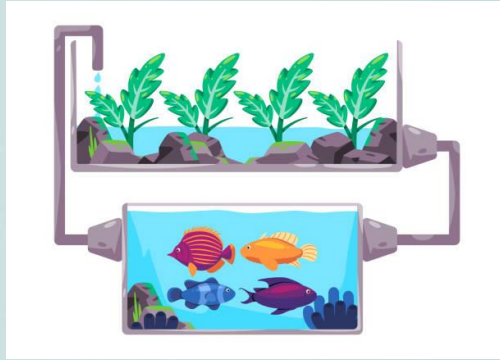
Projects Already Implemented

1. Sustainable Food Production
2. Save the Antarctic Krill
3. Solutions for Fast Fashion
4. Solutions for Overpopulation
5. Research on the Cure of Cancer
6. Preventing the Extinction



1. Sustainable Food Production

Use of technology, including renewable energy, on modern food production methods to make them sustainable



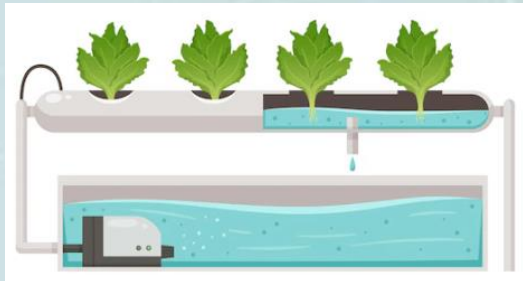
Aquaponics



Mushrooms



Water Collector



Hydroponics



Microgreens



Solar Energy



Monitoring and Automation

1. Sustainable Food Production Outreach

Prototype Replication



- Tagaytay school for students with special needs in the Philippines
- American Horse School at the Lakota Indian Reservation in South Dakota, USA
- Guarani Indian Reservation in Southern Brazil

Conferences and Fairs



- Saint Johns STEM Fair in Saint Augustine, FL, USA
- Persimmon Festival in Jacksonville, FL, USA
- Global Innovation Field Trip International Conference on the Internet
- Krya Kids International Conference on the Internet

Education Program



- Classes at the Eat Your Yard JAX in Jacksonville, FL, USA
- Classes at the Tagaytay school for students with special needs in the Philippines
- Classes on Zoom over the Internet

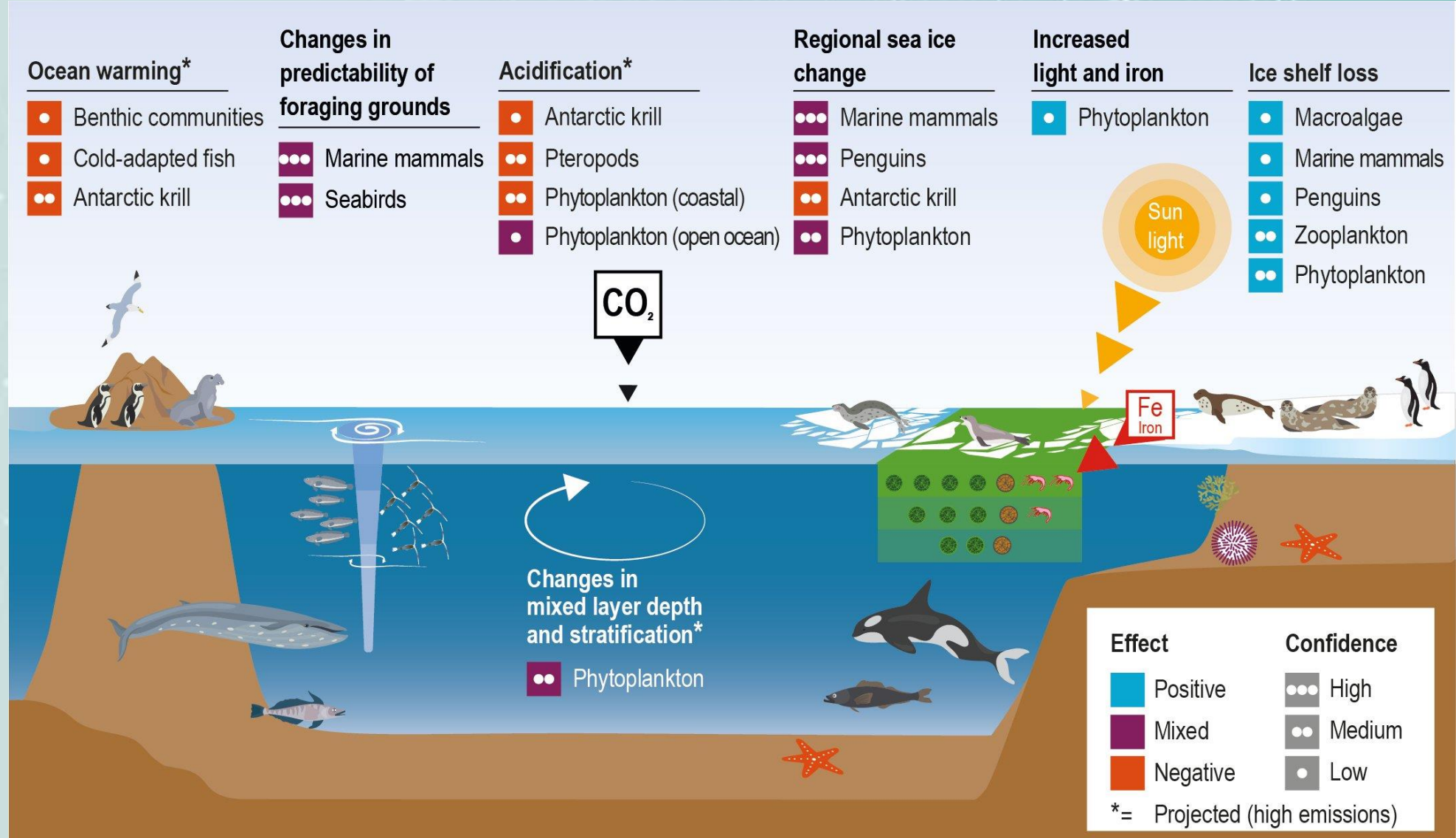
2. Save the Antarctic Krill

Use of technology, including renewable energy, on ways to prevent the extinction of the Antarctic Krill

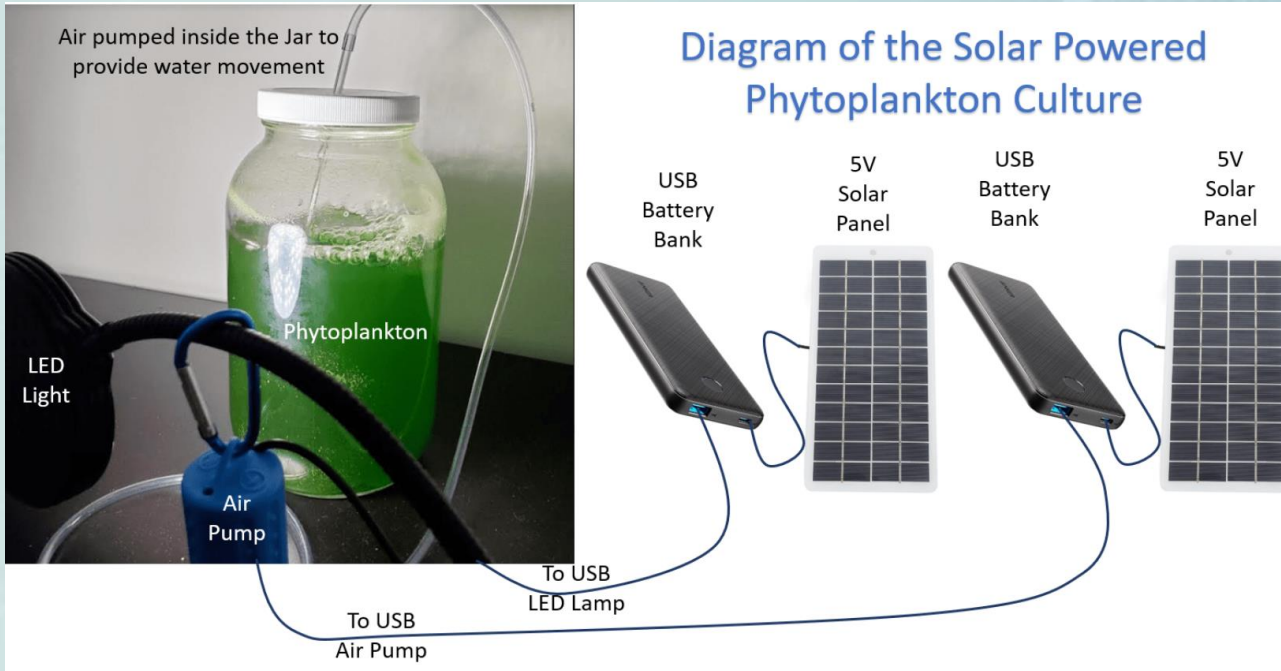


Challenges for the Antarctic Krill

- Ocean warming
- Ocean acidification
- Melting of ice
- Overfishing



2. Save the Antarctic Krill



Solution Proposed

- Create a sustainable phytoplankton culture with renewable energy integration
- Create a sustainable krill farm with renewable energy integration
- This solution is being prototyped with two students from Tallahassee, FL, USA

Krill Farm instead of fishing for Antarctic Krill

Help me preserve the Antarctic Krill

Help the Antarctic Krill

12V power supply

Foam box

72W Peltier device

Inside temperature: 63.5F

Outside temperature: 74F

Time to achieve: 15 minutes

Conclusion: requires more power

Krill Environment Prototype

Phytoplankton Culture Prototype

Air tube

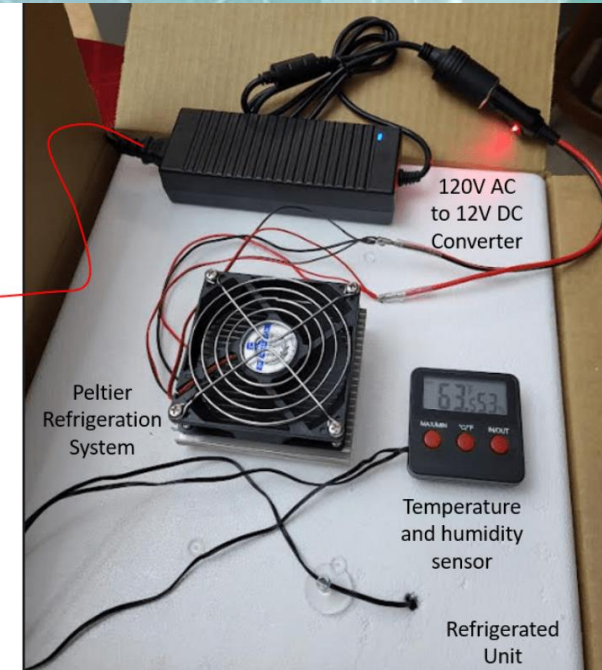
Culture bottle

Salt water with phytoplankton

LED light

Air pump

Diagram of the Solar Powered Refrigerated Unit for the Krill



3. Solution for Fast Fashion



40 million tons of textiles are overwhelming landfills each year



35% of the microplastics in the ocean comes from fast fashion reducing Biodiversity



5% of the worldwide greenhouse gas emissions worsening Climate Change



Large number of children worldwide working in fast fashion industry

3. Solution for Fast Fashion

Fast Fashion facts:

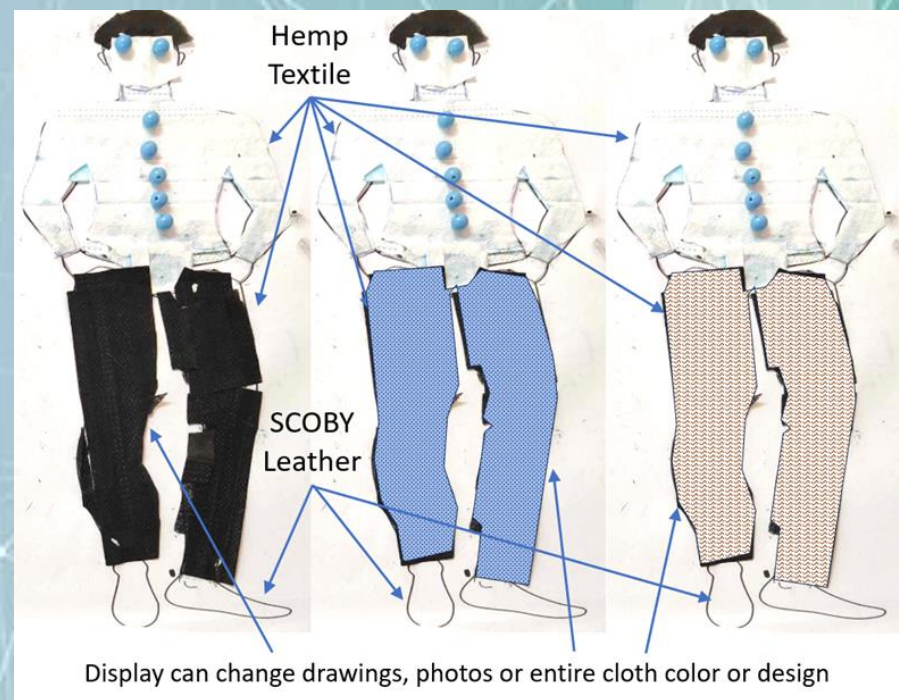
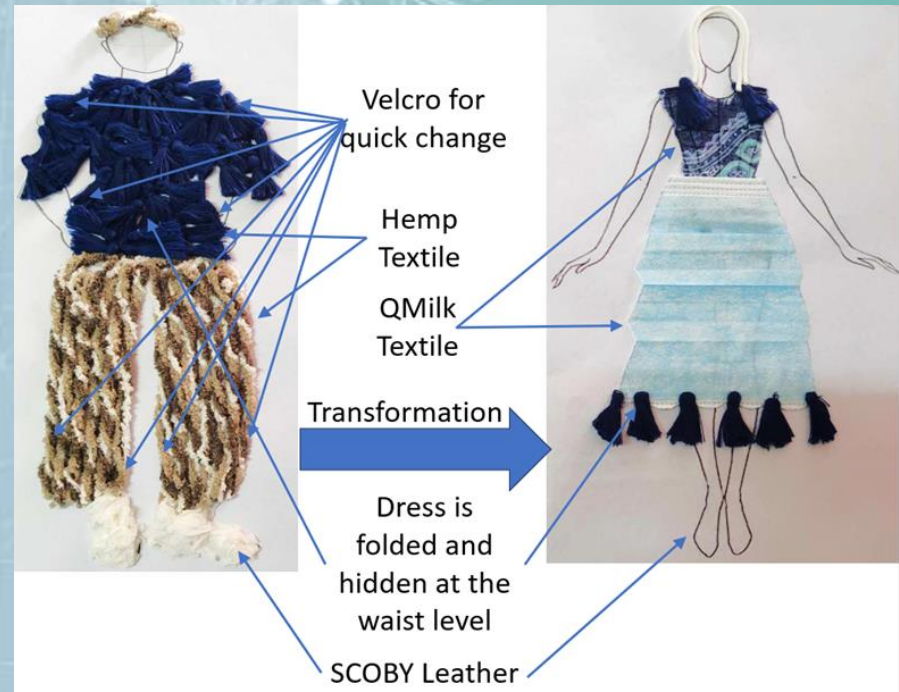
- 5% of the global carbon dioxide emissions
- 40 million tons of textiles on landfills every year
- 35% of microplastics in the ocean



Meet the team working on making fast fashion more sustainable!

Nicole Charina Gian Annalyn Francine

This solution is being proposed in a cooperative effort between the Innovation International and 4 students with special needs from the Tagaytay City Special Education Center in the Philippines. Video can be sent upon request (it was not included here because the Youth Awards requirements allows for only one video which is shown on page 10)



4. Solution for Overpopulation

Making the world better
with environmental
protection videos!



Interact
Club São Paulo Av. Mateo Bei

- Development of video to raise awareness of overpopulation and suggesting the Sustainable Food Production as a solution
- Participation of 2 students from Sao Paulo in Brazil, one student from Cascavel in Brazil, and 5 students with special needs from Tagaytay in the Philippines and one student from Riyadh in Saudi Arabia
- The video produced is available on this link:
 - <https://www.youtube.com/watch?v=FuXFoDfRuTk>
- There are videos for all the solutions listed in this document but, due to Youth Awards requirements, we can only submit one video and we chose it to be this one
- All other videos can be made available upon request



5. Research on Cure of Cancer

Our Solution



Home

Solution

Quantum

AI

Nanobots

Our solution starts in the field clinic where the organism responsible for an illness is collected in form of a biopsy for tumor cells or collection of virus or bacteria.

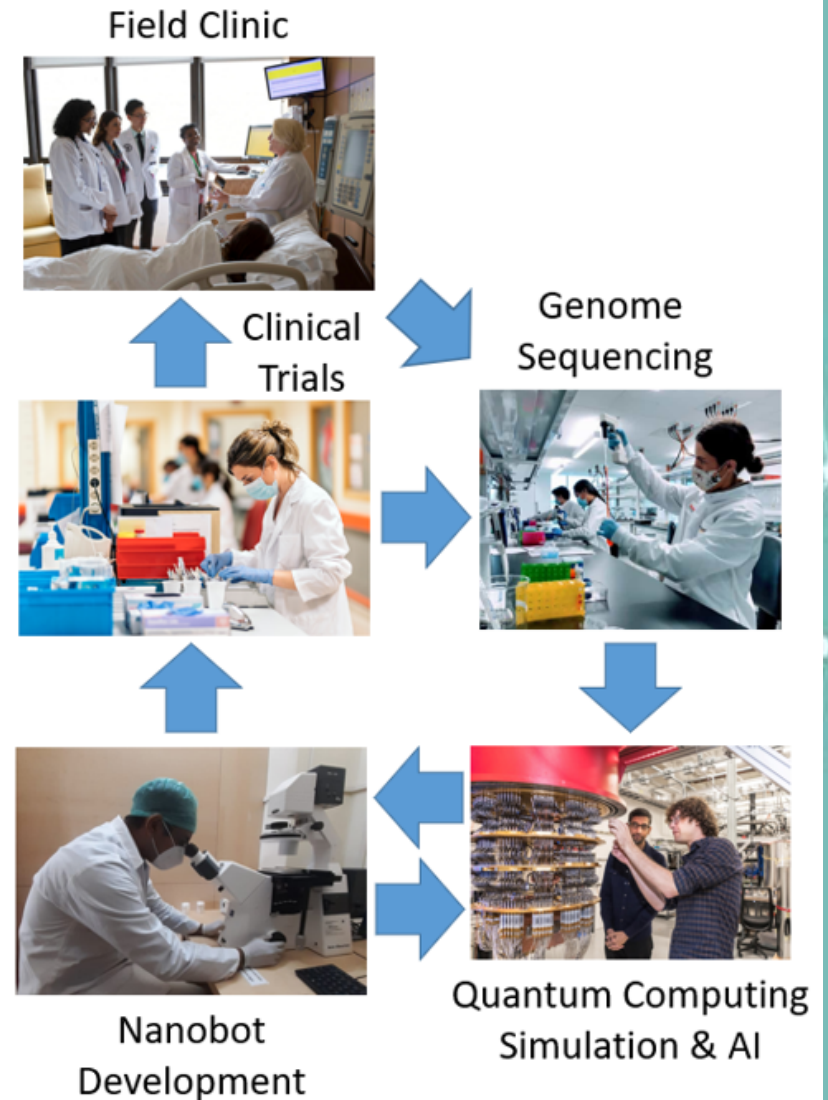
This organism goes through our genome sequencing lab which collect all necessary information about the organism.

That data will be studied by our artificial intelligence tools that creates the formula for the cure.

This formula is given to our nanobot development lab, responsible for the creating of the compound that now goes through several cycles of simulation and re-development, until we reach the perfect formula. Artificial intelligence and quantum computing accelerate this development process.

This compound is then field tested before being administered to the general population.

Technology accelerate these processes allowing for the total time from concept to market reduced from years to weeks. Go to each of the technology pages to see how this is done in each phase!



5. Research on Cure of Cancer

**The Nanobots Team is ready for
the competition**

**Making this world a better place
through innovation**

- Use of technologies such as nanotechnology, quantum computing, and artificial intelligence to:
 - Cure Cancer
 - Eliminate Pandemics
 - Reduce the antibiotic resistant bacteria
- Participation of one student from Columbus, Indiana, USA, and one student from Stamford, Connecticut, USA



6. Preventing the Extinction



- Focus on the Araucaria angustifolia with a student wish special needs from Cascavel, Brazil
- Focus on the Blue Macaw with another student from Cascavel, Brazil
- Focus on the Pink Dolphin with another student from Cascavel, Brazil
- Focus on the Giant Anteater with another student from Cascavel, Brazil
- Focus on the Tarsier with 30 students with special needs from the Taggaytay City Special Education Center in the Philippines
- Focus on the Manatee with a student from Saint Augustine, Florida, USA

Project Results

Project / Solutions	Student Coordinator	Directly Affected	Indirectly Affected
Sustainable Food Production	Nicole Haragutchi	Estimated in the hundreds considering classes, demos, replication, and conferences	Estimated in the high hundreds considering recording available on the Internet
Save the Antarctic Krill	Nicole Haragutchi	Three students	Not yet officially published
Solutions for Fast Fashion	Nicole Haragutchi	Four Students	Not yet officially published
Solutions for Overpopulation	Nicole Haragutchi	Ten students	Not yet officially published
Research on the Cure of Cancer	Nicole Haragutchi	Two students	Not yet officially published
Preventing the Extinction	Nicole Haragutchi	Estimated in the hundreds considering events, publications, and conferences	Estimated in the thousands considering recording available on the Internet and coverage by the media

Project Incubation

Several additional project are being developed to acquire skills and knowledge so we can mentor it to other students. This process enables a complete serial production line where more and more innovations are created and disseminated. This is a list of what we have in plans at this moment:

Project / Solutions	Student Coordinator	Directly Affected
Wildfire Alarm System	Nicole Haragutchi	Integrated and sustainable system to detect wildfire and alert users in time to plan for evacuation. This system is going to use renewable energy with complete independence from the external service providers, including communication services such as Internet and cellphone services.
Biomimicry Research	Nicole Haragutchi	Use of biomimicry methods to develop STEM prototypes such as the shock absorber being developed using the concepts of bio-tensegrity that keeps the skeleton upright and protect internal organs
STEM in Space	Nicole Haragutchi	Creation of STEM experiments to be executed in outer space in preparation for colonization of other planets. This experiment is also planned to use renewable energy.
US Patent Process	Nicole Haragutchi	Creation of a blog showing the detailed process required to file a non-provisional patent application in the United States

Innovation International

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1. Innovation incubation
 - Brainstorming
 2. Innovation building
 - Prototype
 3. Innovation sharing
 - Conferences
 4. Innovation validation
 - Competitions



www-raider.stjohns.k12.fl.us



www.innovationinternational.org