**A Day In The Life Of a ScientistTM - environmental science field-based learning for 800 middle school children in the Everglades**

Abstract

**Water quality in the United States is in serious trouble.** The lead crisis in Flint, Michigan called attention to issues with water quality. But many other states are also affected by chemical contamination in their drinking water and rivers. In [The Florida Everglades](https://www.theguardian.com/environment/2019/feb/27/florida-everglades-climate-change-environmental-disaster-hope-for-future), there is evidence that the water is contaminated with thousands of harmful chemicals, including [phosphorus pollution](https://www.epa.gov/everglades/why-it-important-restore-everglades). A population of about [8 million citizens](https://www.nature.org/en-us/about-us/where-we-work/united-states/florida/stories-in-florida/florida-fresh-water/) depends on the chemically contaminated water supply of the Everglades. **Safe drinking water can no longer be taken for granted or overlooked in the United States**. It is beyond debate that [unsafe water means poor quality of life](https://www.wqa.org/improve-your-water/benefits-of-good-water-quality) for adults, for children, and for the natural environment.

Save the Water (STW™) is a non-profit organization that is driving a community-based mission in the United States to identify harmful contaminants in water, to remove those harmful contaminants, to launch social enterprises, and to raise awareness. The organization is a volunteer-based organization with over 80 technical experts and enthusiastic volunteers who are dedicating their time and expertise to be part of the solution to water issues in the Everglades and expanding to other significantly polluted bodies of water throughout the United States.

With increasing attention to water contamination, communities are eager to take part in solutions that make their water safe. Because water quality impacts children and youth the most, it is important to prioritize their participation in community advocacy and action for solutions. STWTM’s “Day in the Life of a Scientist” (DILOS™) program is an innovative strategy that embraces the concept of local solutions by local communities.

DILOS™ is a fit for purpose for Global Giving because it is a grassroots initiative connecting community members with issues that affect them directly. STW™ is looking for [$78,725](https://docs.google.com/spreadsheets/d/16aXJizXF3FxoaJxFAPksYywpuZcXjFU_Jt9_IWTBlv0/edit#gid=0) to partner with up to 9 schools in Dade, Broward, and Palm Beach Counties and to select 800 students, with up to 50% girls, to participate in the STEM-DILOS™ Program. Before and after the field visits, there will be classroom presentations and discussions engaging the students in quizzes and exercises around what they knew before the program and what they know now.

These efforts are essential for improving water quality for the citizens, the animals, and the environment in and around the Everglades because human behavior is key to restoring the health of the ecosystem. The direct beneficiaries will include 800 boys and girls and 50 teachers from 9 schools. The water analysis results, environmental data, photographs, and written report developed will be available on STWTM’s website, factsheets, and information materials that will be left with the partnering schools for their own use.

The primary benefits are twofold: (a) to increase knowledge and skills around water quality (b) to promote behavioral change around water consumption and use among students which will likely reach the homes.

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The project

Water free of contamination is important for a healthy community and a clean environment. With education, skills, and empowerment, young people, especially girls, will be powerful resources for change in their community. Save the Water™ has designed the “Day in the life of a Scientist” (DILOS™) program to engage middle school children on water issues. The program platform is a local solution by the local community.

The problem

In the [Florida Everglades](https://www.theguardian.com/environment/2019/feb/27/florida-everglades-climate-change-environmental-disaster-hope-for-future), there is evidence that the water is contaminated with harmful chemicals including pesticides, fertilizers, pharmaceuticals, and industrial chemicals, which are all considered Contaminants of Emerging Concern. It is beyond debate that [unsafe water means poor quality of life](https://www.wqa.org/improve-your-water/benefits-of-good-water-quality) for adults, for children, and for the natural environment. DILOS™, therefore, is a fit for purpose because it provides knowledge and skills to community members affected by the polluted water. Human behavior is a contributing factor to the management and protection of water resources.

The solution

To influence human behavior, knowledge and skills are required. DILOS™ provides middle school children with the opportunity to increase skills and knowledge on water issues by conducting water quality testing in their schools and in their communities. It is important that children understand topics and issues that affect their lives and learn how to adapt behavior around water consumption and use to stay healthy and to maintain a clean environment. They can be the driver for change in their community for two reasons: (a) communities look to protect children as they are the future generation, and (b) collectively, children can call to action adults using platforms like social media and advocacy.

Impact

The impact is substantial because, through this program, young people will get to know how they can own solutions to problems that affect them and their families. DILOS™ provides an additional edge that is uncommon in the classroom curriculum even if the materials cover environmental issues. Specifically, DILOS™ takes students to the communities to do water testing themselves, reading and understanding the results, sharing, and talking about what they experienced. This allows students to connect with their environment, thereby increasing their sense of obligation to contribute to solutions.

Trips to communities

Water testing using X equipment

Workshops and Presentations

Development of materials

Sharing and reporting via social media

**Activities**

increased knowledge of water quality and contamination

behavior change around individual practices that impact water quality

**Outcomes**

contamination free and healthy water for all in Everglades

**Goal**

The direct beneficiaries will include 800 boys and girls and 50 teachers from 9 schools. There is long-term sustainability because the materials developed will be available on STWTM’s website, factsheets, and information materials that will be left with the partnering schools.

There are three primary benefits: (a) to increase knowledge and skills around water quality, (b) to promote behavioral change around water consumption and use among students which will likely reach the homes, and (c) to encourage students to take an interest in science and environmental issues and pursue STEM careers.

Utilization of the grant

The money ($) in the grant through Global Giving will facilitate the logistics, advocacy materials, refreshments, and supplies for the visits. The cost will also contribute to developing infographics and quick facts materials to leave with students and the communities visited. STW™ will write a report from the visit to highlight the experience and to share widely on its website and other social media platforms.

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| [**Budget**](https://docs.google.com/spreadsheets/d/16aXJizXF3FxoaJxFAPksYywpuZcXjFU_Jt9_IWTBlv0/edit#gid=0) **Category** | **Amount** | **Percentage** |
| Program costs (water testing and production of materials) |  |  |
| Support and operational costs (travel costs, refreshments, and supplies) |  |  |
| **Total** |  | **100%** |

[Follow link for detailed Budget.](https://docs.google.com/spreadsheets/d/16aXJizXF3FxoaJxFAPksYywpuZcXjFU_Jt9_IWTBlv0/edit#gid=0)

Connecting middle school children to the Everglades by giving them knowledge and skills on water quality is feasible as proposed here. STW™ has previously conducted this work with middle school children in 10 schools with positive feedback. [DilosTM-Program](https://www.google.com/url?q=http://savethewater.org/education-resources/dilos-program/&sa=D&ust=1568228374052000&usg=AFQjCNGUPcmnQRrDKhNQ77CC6CexPTOByA)