

POCACITO Network 2025

activities and impacts

2025 POCACITO activities

- POCACITO summer camp 2025
- Transatlantic Forum for Environmental and Climate Justice 2025
- Art for Nature series
- Biomimicry Youth Design Challenge BYDC
- German-American Nature-Based Solutions Exchange GANBASE

POCACITO summer camp 2025

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- 40 high school students from the U.S. and Germany
- July 6-12, Camp Wilkes, Biloxi, Mississippi
- together with Mississippi State University
- <https://www.pocacito.org/pocacito-summer-camp-2025/>
- focus on biomimicry, biodiversity, climate change
- activities included biodiversity mapping, kayaking, seine fishing, drone flying, beach cleanup, planting, cooking, podcasting and zine editing
- outcomes: zine and podcast
- our 2nd year in Biloxi



Transatlantic Forum for Environmental and Climate Justice

- November 19, 2025 at George Washington University in Washington, DC
- theme: Resilience and Disaster Readiness
- <https://www.pocacito.org/tfecj-2025-update/>
- with Member of German Parliament Katrin Uhlig and U.S. Rep. Lloyd Doggett
- Margaret Gonglewski, Associate Professor of German and International Affairs, Faculty Director of Academic Programs, GW Alliance for a Sustainable Future
- Prof. Dr. Uwe Schneidewind, former Lord Mayor of Wuppertal
- Geraldine Gardner, Executive Director, Centralina Regional Council, NC
- Bronwyn Cooke, Community Planning and Policy Manager with the Agency of Commerce and Community Development for the State of Vermont
- Joseph Threat, Chief Administrative Officer, City of New Orleans
- Justin Ángel Knighten, Sustainable Future Fellow, GW Alliance for a Sustainable Future
- Nils Jakubeit, Senior Advisor with German Federal Agency of Technical Relief (THW)
- 50 participants, hybrid



Art for Nature

- art program at Maggie Walker Governor's School in Richmond, Virginia, Borah High School in Boise, Idaho, Santa Fe Community College in Santa Fe, New Mexico and Vestavia Hills High School in Vestavia / Birmingham, Alabama.
- with artists Brian Hebert, R. Stein Wexler, Shayla Blatchford and Thomas Heinser
- covering climate change (Birmingham), extractive economies (Santa Fe), recycling (Boise) and the James River (Richmond)
- exhibitions in each location and
- <https://www.pocacito.org/art-for-nature-in-4-schools/>



Biomimicry Youth Design Challenge BYDC

- started by Biomimicry Institute
- 52 teams from around the world
- elementary, middle and high school
- focus on the 17 UN Sustainable Development Goals
- <https://www.youthchallenge.biomimicry.org/>
- <https://www.pocacito.org/biomimicry-youth-design-challenge-2026/>
- jury selection for awards in each age group and SDG

Biomimicry Youth Design Challenge 2025

The Aquatic Recycled Trash Accumulation System (ARTAS)
 Stanford Middle School, San Jose, CA, USA, 7th grade

What is the problem your team solved for this challenge?
 Water pollution is a widespread predicament found in various places around the globe. Much can be traced back to man and streams polluted by unsustainable industrial practices or agricultural runoff. This causes many problems such as difficulties to create water conservation, distribution of aquatic organisms, and even human health. Our team decided to create a solution that can help in water pollution, sewage treatment, and of itself, to name a few. Pollution in California, especially in the Bay Area, has long been a worldwide Water Quality Standard because of these causes.

How was the solution inspired by nature?
 Our design was inspired by the sea slug, particularly, the sea slug, and the compound eyes of insects. Sea slugs are a group of aquatic organisms that eat up bits of water when they're hungry. Eating slugs are filter feeders, sucking up their mouths open to capture food. Filter feeders possess flexible skin that's soft, pliable, and stretchy. The filter comes in the shape of a funnel that can be used to filter out the water. The filter can be used to filter out the water. The filter can be used to filter out the water.

What does your design solution do?
 Our device integrates water pollution by filtering out water. The main part of the filter is based on a floating cloth. In floating technology is similar to the device. Floating across and gathering water with the cloth. The cloth is made of a material that is soft and pliable. The cloth is made of a material that is soft and pliable. The cloth is made of a material that is soft and pliable.

Meet the Team **Meet the Project**

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Biomimicry Youth Design Challenge 2025

FRIGATEBIRD-INSPIRED GLIDER
 International group of students based in New Delhi, India and USA

What is the problem your team solved for this challenge?
 In many disaster-hit and remote areas, millions of people struggle to access food, medicine and supplies due to damaged infrastructure and limited transport. Disasters in westwing these regions can reach people health risks or even death. Our team wanted to solve this problem by designing a sustainable, frigatebird-inspired glider that can transport essential items to isolated locations where conventional transportation cannot reach.

How was the solution inspired by nature?
 Our design was inspired by the frigatebird, a seabird that can soar for days without flapping its wings. We studied its long, slender wings and lightweight frame, which allow for low-energy, efficient gliding. These features led us to use a high-strength, lightweight material to create the glider's frame, and the glider's wings. Our design mimics the frigatebird's wings, allowing it to glide over long distances with minimal energy use. Biological principles directly shaped our decisions, leading us to create a glider that is efficient, sustainable, and lightweight in disaster zones.

What does your design solution do?
 Our frigatebird-inspired glider is designed to deliver life-saving supplies to areas that are inaccessible due to obstacles or rough terrain. Built from lightweight yet durable materials, it can withstand rough weather while flying long distances. The aerodynamic shape, mimicking the frigatebird's wings, allows smooth and stable gliding for long-distance flights. Drawing from the frigatebird's gliding efficiency with minimal energy use, we incorporated features like long, narrow wings and a streamlined body to enhance lift and reduce drag. These nature-based insights directly guided our decisions on structure, materials, and aerodynamics, optimizing the glider for long-range, stable, and sustainable flight in real-world situations.

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Biomimicry Youth Design Challenge 2025

HAMMER: Hammerhead-Adapted Modifications for Maximizing Energy Retrieval
 Eastlake High School, Sammamish, Washington, USA

What is the problem your team solved for this challenge?
 The most prevalent problem in the world is the lack of energy. Energy is needed in our daily lives, especially in low or variable wind conditions common in urban and semi-urban areas. We aimed to improve the aerodynamic performance of wind turbines by using biomimicry. We studied the hammerhead shark, which possesses a unique shape. These modifications reduce drag and enhance lift, leading to higher energy output.

How was the solution inspired by nature?
 Our solution was inspired by the hammerhead shark and the hammerhead whale. The hammerhead shark's cephalic lobe is adapted to maximize water flow, reducing drag and improving maneuverability. Similarly, the hammerhead whale's head shape is adapted to reduce drag and improve lift. We studied the hammerhead shark's cephalic lobe and the hammerhead whale's head shape. We studied the hammerhead shark's cephalic lobe and the hammerhead whale's head shape.

What does your design solution do?
 Our design improves the efficiency of wind turbines by mimicking hammerhead structures from marine animals. By adding these shapes along the blades of a vertical axis wind turbine, the design reduces aerodynamic drag and increases lift. The design also mimics the hammerhead whale's head shape, which is adapted to reduce drag and improve lift. The design also mimics the hammerhead whale's head shape, which is adapted to reduce drag and improve lift.

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Biomimicry Youth Design Challenge 2025

ROOTED PASSAGE
 Orange Cube Seoul, South Korea, grades 10 + 11

What is the problem your team solved for this challenge?
 The problem our team addressed was about small animals and amphibians falling into deep agricultural canals in South Korea, where they cannot escape without human help. While the existing canals are essential for rice farming, they pose a serious threat to wildlife.

How was the solution inspired by nature?
 Our solution was inspired by mangrove roots and tree frog toe pads. Mangroves stabilize themselves in a wet environment by extending their roots into the water, which becomes our inspiration for the stable leg structure of the ramp. Moreover, tree frogs use hexagonal toe pad textures to grip slippery surfaces. This inspired the texture of the ramp surface to make animal traction better. By combining these strategies, we created a biomimetic, stable, and grippable bridge that helps small animals escape from challenging water conditions. This integration of natural inspirations ensures both structural integrity and effective usability for animals to escape.

What does your design solution do?
 Rooted Passage is a modular escape bridge that helps small animals to safely exit deep canals. It addresses the problem by offering a stable and grippable path, which is designed with hexagonal toe pad textures and biomimetic roots. The design also mimics the hexagonal toe pad textures of mangrove roots and tree frog toe pads, enhancing its structural stability and traction even in slippery canals. This solution helps wildlife avoid needs and human reliance on rescue. Drawing inspiration from nature, we followed the National Institute of Ecology's guidelines for escape bridges, including dimensions, and adaptations, to ensure our design is feasible for practical implementation.

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→ German-American Nature-Based Solutions Exchange GANBASE

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- one week in June in Northern Germany
- one week in October on the US Gulf Coast
- <https://www.pocacito.org/german-american-nature-based-solutions-exchange-ganbase/>
- <https://www.pocacito.org/ganbase2025/>



Impacts

- 40 students at summer camp + 25 students at planting day
- reached 100 students in school arts program
- reached 250 students online in biomimicry program
- reached 250 participants at in-person workshops and conferences
- in-person activities in
 - ◆ Biloxi, Mississippi
 - ◆ Birmingham, Alabama
 - ◆ Boise, Idaho
 - ◆ Bremen and Hannover, Germany
 - ◆ Galveston, Texas
 - ◆ Gulf Shores, Alabama
 - ◆ New Orleans, Louisiana
 - ◆ New York, New York
 - ◆ Richmond, Virginia
 - ◆ Santa Fe, New Mexico
 - ◆ Washington, DC