



Impact Statement

Chloe Chen, Grade 11

Beneath the Surface, 2026

Acrylic on wood panels, 26 x 13 inches

Watchung Hills Regional High School, Warren, NJ

Unsung Hero: Isabella Aiona Abbott

An ethereal figure stands above an unnatural glow from below where she stands. In her arms she holds a radiating skeleton as algae and flowers emerge from its bones. This unsettling yet luminous scene forms my interpretation of my Unsung Hero, Isabella Aiona Abbott.

Dr. Abbott was the first woman of Native Hawaiian ancestry to earn a Ph.D. and was a trailblazer in the world of marine biology. I admire Dr. Abbott for her efforts to combine the cultural, ecological and scientific worlds through her studies. As an Asian American artist, I find there are few scientists in the world of science who come from cultures themselves and are also represented. What I respect about Dr. Abbott is her expertise in the area of algology and her commitment to passing on traditional Hawaiian knowledge. Dr. Abbott has developed the idea of combining science and culture, bringing traditional ecological knowledge into a western domain. In spite of being a minority woman and of Native Hawaiian descent who was facing significant barriers during her career, Dr. Abbott serves as a wonderful inspiration to those who see their identity as a source of strength rather than as a limitation.

Dr. Abbott's influence extends far beyond just academic contributions. In the area of limu, which is the Hawaiian word for seaweed, Dr Abbott has described and classified over 200 various species of algae in the state of Hawaii, singlehandedly advancing the understanding of marine biodiversity in the Pacific. Simultaneously, she preserved traditional Hawaiian knowledge about the ecological, nutritional, and medicinal uses of these species. After earning her Ph.D. from Stanford University in 1950, she wrote groundbreaking works such as *Marine Algae of California* and *Limu: An Ethnobotanical Study of Hawaiian Seaweeds* that remain essential in marine biology and ethnobotany. As stated by the Bishop Museum, Dr. Abbott's work has helped to protect both native algae and traditional practices related to limu that were previously in danger of extinction. Through her work at the interface between Indigenous science and research, she has changed how we view sustainable practices and care for the environment. Furthermore, her representation and efforts helped pave the way for minorities to pursue similar fields, breaking conventions and contributing to diversity in STEM fields.

My artwork reflects Dr. Abbott's intertwined bond to life, death, and regeneration within marine ecosystems. Both fragmentation and continuity can be witnessed throughout the composition, representing how knowledge is shared between generations. The center of the piece is detailed by a skeleton engulfed by algae and flowers that Dr. Abbott grasps

onto, representing the cyclical nature of life her ability to see the vitality of forgotten organisms. The glow emerging from within the skeleton represents both her scientific discoveries and the blessings of her ancestors, bringing her identity and achievements to light. I created this art piece using acrylic paint on two wood surfaces which allowed me to add layered textures and contrasts onto the surface. The use of the natural texture in the wood helps reinforce the theme of organic growth and connection to nature.

Strong value contrast and controlled light are used to create an unnatural upward glow from the skeleton, intending to evoke a sense of eerie as well as highlight the skeleton as a source of knowledge. This mood reflects the unfamiliar nature of marine ecosystems, where organisms like algae thrive in environments that may initially seem dark or lifeless. It also mirrors the process of discovery, how new knowledge can feel unsettling before it becomes understood, and the challenges Dr. Isabella Aiona Abbott faced navigating spaces that were not traditionally welcoming to her. Rather than representing fear, it invites viewers to reconsider what they perceive as strange or insignificant, similar to how Abbott revealed the unseen importance of limu.

Throughout this piece, fish are placed strategically behind the algae to emphasize the crucial role algae plays in sustaining and providing for marine life. The color palette involving black, green, and yellow creates contrast and meaning; Black represents the unknown, green signifies life, and yellow illustrates the soul behind it all. The downward perspective establishes her dominance in underrepresented fields, while the light source from below symbolizes knowledge emerging from overlooked places. My process involved researching marine biology imagery, skeletal structures, and traditional Hawaiian uses of limu to ensure accuracy, depth and an understanding of algae's ecological role.

Creating this piece has changed how I approach both science and art. The journey of Dr. Isabella Aiona Abbott has made me rethink how I represent people: who will be shown, remembered, and what type of knowledge we value. In my role as a muralist at my school, I have more confidence in my ability to use my art to bring awareness to unobserved voices and stories, especially in STEM spaces. Dr. Abbott's leadership has opened my perspective in considering my future in a manner that combines cultural knowledge with scientific research as well as utilizing art to help uplift people whose narratives are generally ignored.

To extend the impact of this project, I plan to display my artwork in a school exhibition and adapt elements of it into a mural, allowing her story to reach a broader audience. With the digital age, this piece can be shared online through social media platforms that help spread her contributions. Additionally, I hope to collaborate with a science or environmental club to present her story, connecting art with scientific education and encouraging conversations about representation in STEM.

Ultimately, my artwork represents Dr. Abbott's everlasting influence as someone who has shown the world how to express the unseen, discovered vitality among what is without life, and changed the way in which we relate to science and our natural environment.