



Impact Statement

Xinyan Si, Grade 12

Mapping the Invisible Sea, 2026

Acrylic, markers on canvas, 20 x 16 inches

Newport High School, Bellevue, WA

Unsung Hero: Marie Tharp

The mysterious underwater world, Marie Tharp revealed the invisible darkness into a map that forever changed how we see the Earth. Marie Tharp was an outstanding female oceanographic cartographer who was often being excluded or overlooked. She represents persistence and curiosity. What I find most inspiring about her is that she refused to let gender expectations become barriers from contributing to science. I admire her curiosity and persistence. She silently analyzed marine data and transformed numerical data into clear visual maps, which revealed a hidden world beneath the ocean surface. When others saw only random scattered data points, she could perceive the “underwater” rule; this ability precisely embodies a unique fusion of innovative and scientific thinking. To me, she is a true model because she used her actions to prove that profound impact is not always recognized at the outset: what is truly required is an unwavering devotion to truth.

In my research, I learned that Tharp always faced limitations simply because she was a woman. During the 1940s and 1950s, gender discrimination in science was severe. Despite this, she continued refining her maps with precision and her contributions are now recognized as one of the most important visual discoveries in Earth science history. One of the most important moments in Tharp’s career occurred during the mid-20th century, when she collaborated with Bruce Heezen to map the ocean floor of the Atlantic Ocean. Through her precise drawings, she identified a continuous rift valley along the Mid-Atlantic Ridge. At the time, her discovery was controversial, because this challenged the existing opinion that the ocean floor is flat and unchanging. However, her map became crucial evidence for supporting the theory of plate tectonics and seafloor spreading. This groundbreaking discovery transformed scientists’ understanding at the time regarding earthquakes, volcanoes, and the movement of continents.

My artistic vision is to illustrate Marie Tharp’s seminal research through a monumental map of the ocean floor, thereby demonstrating how she transformed raw data points into visually striking art. This piece draws inspiration from the bathymetric charts Marie Tharp herself drafted during her time. Consequently, I have incorporated contour lines to delineate the boundaries between lands and seas and employed blue lines of varying orientations to demonstrate the diverse topography of the ocean floor. Furthermore, this artwork exposes the hostility women faced within the scientific realm during that era. This theme is embodied by a scene featuring a cramped, dimly lit room—its walls plastered with a young woman’s inquiries and curiosities regarding the ocean depths. While some male scientists stand outside the doors, who, at the time, were likely already made significant contributions to marine research. They stand together

within a bright, spacious laboratory, collectively discussing project progress, necessary adjustments, and other matters. Even their gaze never once rests upon Marie Tharp; yet she did not give up her scientific pursuits. Instead, she strives even harder to defy gendered expectations and to uncover the truths of the underwater world. In terms of materials, I used acrylic and markers as two of the main materials. I used the markers to do the mapping part and acrylic for protagonists in the art piece.

Marie Tharp's story has influenced me that meaningful work is not always immediately recognized, and important discoveries often come from careful observations through patience over time. Just like the art piece, a single image is insufficient to fully shape the forms, movements, and clothing for every figure within the painting. We need a cumulative process of daily refinement to catch the story concealed beneath the acrylic.

I plan to share my artwork within my school community and write a brief summary about what Marie Tharp does, who she is, why she is important. Through social media, I would love to post highlighting women in STEM. I hope to extend the reach of her story and inspire others to keep their curiosity and resilience. Ultimately, Marie Tharp's story has taught me that discovery is not about finding something that already exists, but more about it is to reveal what has always been there that is waiting to be understood.