

Impact Statement

Anya Zhou, Grade 11

***The Birth of Hope Began with a Little Mouse*, 2025**

Colored pencil, pen on paper, 14 x 11 inches

Independent Study, Lexington, MA

Unsung Hero: Robert R. Williams

Being introduced to this ARTEFFECT project, I roamed through the list of Unsung Heroes, spending most of my time in the list of STEAM heroes since I am more interested in scientific achievements. That's when I encountered, for the first time, the chemist Robert R. Williams. I was attracted by the description after him, "The Rat Say Yes," as it reminds me of the other phrase, "The rat is always right." When I clicked into the description of this Unsung Hero, I found out that his experience is very similar to a fictional kids' story I've once read about. In that story, the main characters, being owls, found out that other birds on an island were troubled by a disease. But the birds eating rice with rice husks weren't as infected while birds eating rice without rice husks were. Being attracted, I decided on him as my Unsung Hero.

Williams researched a disease called beriberi, which means "I can't, I can't" in Sri Lankan language because its victims are unable to stand. It was even hard at Williams' time to determine what is the cause of beriberi, of whether it is a nutritional deficiency or from an infectious agent. Williams is convinced that beriberi is caused by a nutritional deficiency and did many experiments to determine this fact. Confirming what he thought, beriberi is caused by the deficiency of a vitamin. Through his research, Williams discovered that thiamin, which can be found in rice husks while also known as vitamin B1, can cure the disease. With this discovery, Williams isolated, split, and synthesized thiamin out of rice husks, and then gave the compound to rats about to die of beriberi. Indeed, the rats were cured and could walk over a few days of receiving the compound. I figured that this historical event could be what backed up the story I read when I was around ten. This rat test gave me the vision of a white mouse, commonly used in experiments, bringing a piece of rice stalk to Williams.

In my artwork, I drew Williams and the victims of beriberi using pencil sketches, symbolizing them still in a painful, gray situation of unable to find a cure of the disease. On the other hand, the mouse and rice stalk, drawn in colored pencils, brought them a colorful hope. Although at last, I did use a gel pen to draw the whiskers of my mouse because it is hard to use colored pencils after I drew the background.

My Unsung Hero's story impacted my life as I see how much effort he put into this research of beriberi, even though it is quite unknown. Williams showed a spirit of perseverance and determination through his research, and I hope that this spirit can be

shared among others. I can tell the story I've read to others, while pointing out the real historical event behind this story using the very own artwork I drew, and how my Unsung Hero made an impact on the scientific world.