

Northwestern Mutual Foundation Awards Gearbox Labs Grant for STEM Outreach

Glendale, WI – Northwestern Mutual Foundation has awarded Gearbox Lab a \$25,000 grant to engage Milwaukee’s future engineers, technicians, and coders. With this support, Gearbox Labs was able to produce the two Maker Faires in Wisconsin and will implement several classroom engineering and coding residencies around the City of Milwaukee as well as conduct teacher professional development in engineering and coding.

Isabel Mendiola, Founding Director of Gearbox Labs provided this statement of appreciation, “We can not do our work, the work of reaching every student in Milwaukee and further with quality and engaging engineering and coding experiences without the help of grants like this from Northwestern Mutual Foundation. This is our second grant from Northwestern Mutual which invested in our work early. Northwestern Mutual’s support has allowed us to reach many more students both directly in their classrooms as well build supporting skills and expertise with the student’s teachers.”

The award provides Gearbox Labs with the support to address three programs within Gearbox Labs.

- 1) **Maker Faires** – Gearbox Labs was able to produce two Maker Faires in Wisconsin in 2022.

The first Maker Faire was held in Sheboygan on June 18, 2022. This one-day event was co-produced with Mead Public Library and located in downtown Sheboygan, Wisconsin at several locations including the Library and City Green Park. The Maker Faire featured a battle of the bands produced by the John Michael Kohler Arts Center and featured over 50 makers from around the Midwest. Maker Faire Sheboygan engaged over 2700 attendees.

The second Maker Faire occurred in Milwaukee over four days with both virtual and face-to-face engagements. The Faire was hosted by Discovery World on October 21 and 22 with virtual programming on October 14 and 21. The Faire featured over 100 makers, mostly from tech and engineering firms around the state. Maker Faire Milwaukee engaged over 7500 people between the virtual and face-to-face events.

- 2) **Teacher Professional Development** – Gearbox Labs will implement at least one teacher workshop to be delivered at Milwaukee School of Engineering and reach up to 20 teachers. Gearbox Labs will work with Northwestern Mutual to identify schools from across the region to send educators to this workshop. Educators attending this workshop will receive a Gearbox Labs engineering and coding book and kit to take back to their classroom.

The workshop will introduce engineering, electronics, and coding using Tinkercad and the microcontroller the Arduino Uno. Teachers will learn how to build and code foundational projects using LEDs, buzzers, servos, and different sensors while employing engineering methods and computational thinking. Teachers will receive a book and kit developed by Gearbox Labs for engineering and coding education. Workshops will start in May 2023.

- 3) **School Residencies** – Gearbox Labs will work with schools from Milwaukee to provide classroom residencies will place Gearbox Labs authors Isabel Mendiola and Peter Haydock in classes for 5-10 weeks co-teaching with the classroom teachers in grades 6, 7, or 8.

Two classes (seventh grade) at Milwaukee Academy of Science have already been identified with implementation

to start in March of 2023. Students will learn how to build engineering prototypes and code them in C++. Two additional classroom residencies are planned.

About Gearbox Labs

Gearbox Labs, Inc. located in Glendale, Wisconsin, was founded as a 501c3 non-profit in 2019 by Peter Haydock and Isabel Mendiola. Gearbox Labs publishes STEAM education (science, technology, engineering, arts, and math) resources for K-12 students and educators, informal learning organizations and self-directed student and adult learners.

Gearbox Labs also provides professional development programs to schools and school districts to increase STEAM learning and teaching capacity and skills, residency programs, and a growing catalog of online courses. A nonprofit member of the Milwaukee Tech Hub Coalition and the Milwaukee K-12 Computing Alliance, Gearbox Labs is based in Glendale, Wisconsin. The Gearbox Labs curriculum has been used by over 30 schools in Milwaukee County and by schools in 45 states and 38 countries around the world.