

Broadening Horizons



In 2015 nearly 4400 community members visited LIGO Hanford, including roughly 2600 K-12 students on school field trips and 1800 adults and family members for a variety of general public outreach activities. The addition of the STEM Exploration Center at LIGO Hanford will create new capacity and new demand; the Center could host at least 8000 visitors per year .



At LIGO, K-12 students can experience real-time science research while they interact with scientists and engineers who develop and use some of the world's best technology. The STEM Exploration Center will amplify the impact of a LIGO visit by providing dozens of hands-on experiences with interactive exhibits that will bring LIGO science concepts into sharp focus for learners of all ages.

Empowering Teachers

K-12 teacher professional development has always been a top priority for LIGO education and outreach. The STEM Exploration Center will provide a high-impact resource for teacher preparation in the STEM disciplines.

After completing a multi-partner professional development program hosted by LIGO Hanford in 2010, a participating teacher commented that "The program has forced me to release responsibility so that the students are in charge of the learning instead of me spoon-feeding them."



In content areas related to the physical sciences, the Washington State 2013 Science Learning Standards are visible throughout LIGO's research program.

The STEM Exploration Center will mirror the highly successful Science Education Center at LIGO Livingston



"I had so much fun. The reason I liked your experiments is that I got to try them myself and they were interesting."



LIGO's Science Education Center (SEC) in rural Livingston Parish, LA has become a premier field trip destination for Louisiana schools. Roughly 9,000 K-12 students per year visit the LIGO Livingston detector site and the SEC, experiencing LIGO science with the help of more than 40 high-interest hands-on SEC exhibits and an exploration classroom.

Transformational Science

LIGO integrates science, technology, engineering and mathematics (STEM) in a world-leading research endeavor that will fuel major discoveries in physics and astronomy.



Photo: Corey Gray/LIGO Laboratory

“Gravitational waves offer a remarkable opportunity to see the universe from a new perspective.”

Using two of the world’s largest and most sensitive detectors, one in Louisiana and the other in Southeast Washington, LIGO monitors

the universe for traveling space warps called gravitational waves. These waves will carry information about the most exotic and energetic events that scientists can imagine.



Transformational Education and Outreach

LIGO has built public outreach programs on the premise that each of its two detector sites should host a vibrant and engaging education and outreach center. The first half of this vision became real in 2006 when the National Science Foundation funded construction of the Science Education Center at LIGO Livingston in Louisiana. LIGO continues to plan for a similar facility at LIGO Hanford that will serve a regional population of 750,000, including 150,000 K-12 students.



Organizations that are interested in the development of the LIGO STEM Exploration Center should contact LIGO Hanford Observatory at 509-372-8106 or at outreach@ligo-wa.caltech.edu.



www.ligo.caltech.edu

www.ligo.org

Caltech and MIT operate LIGO with funding from the National Science Foundation

LIGO STEM Exploration Center

A unique STEM experience for students and the general public



“It is places like LIGO that make me really excited about science . . .

We experienced how much fun science can be.”

The LIGO STEM Exploration Center will be located at LIGO Hanford Observatory near the Tri-Cities, Washington. LIGO is the Laser Interferometer Gravitational-wave Observatory.