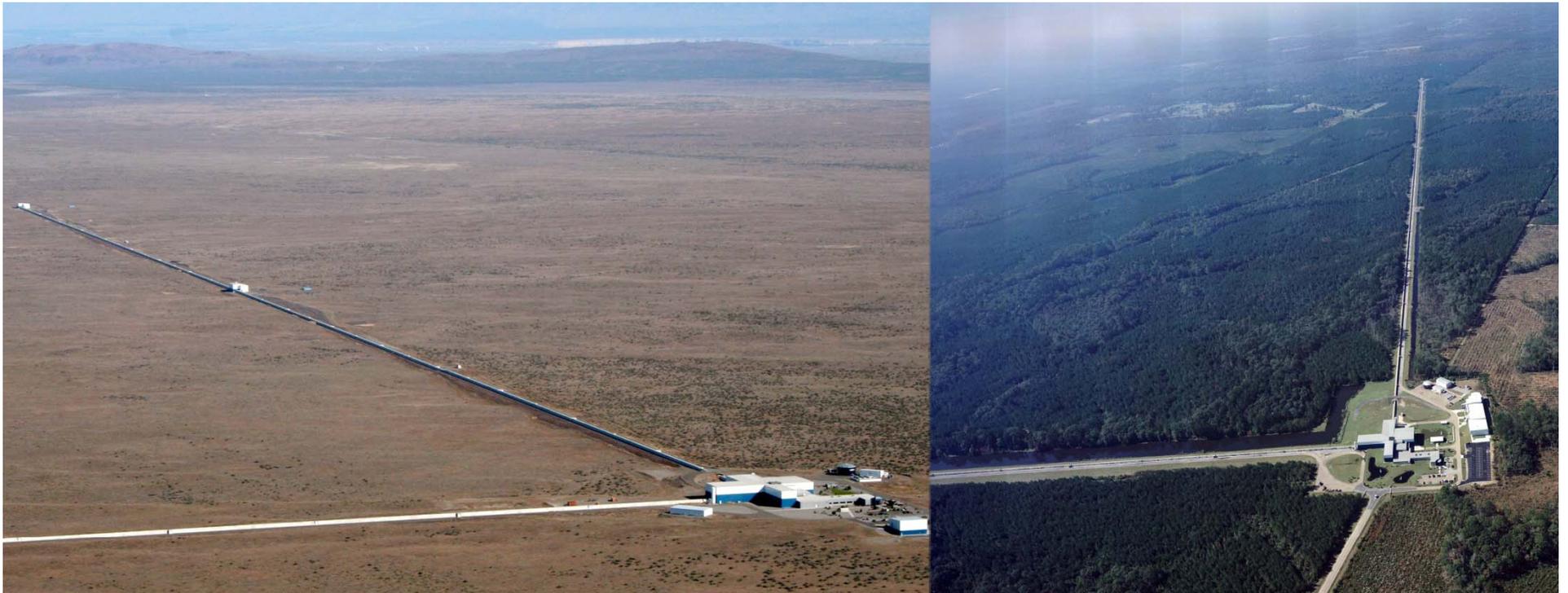




LIGO: Laser Interferometer Gravitational-wave Observatory



Rural Alliance for College Success
January 27-28, 2013



LIGO: Your One-stop STEM Shop

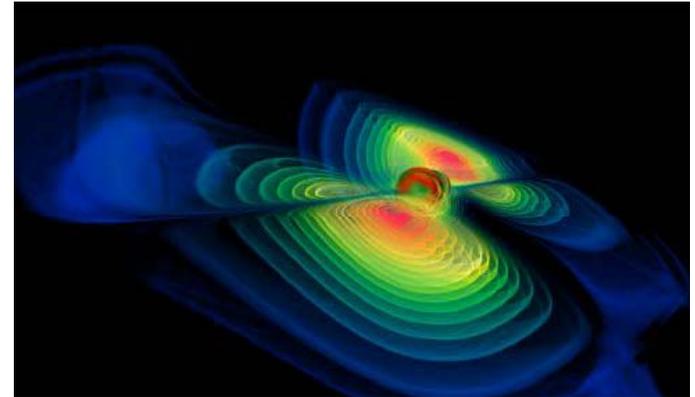
- LIGO: Laser Interferometer Gravitational-wave Observatory
- Opening a unique window on the universe through gravitational wave astronomy
- Offering students and teachers a unique window into the world of science and engineering research
- In science, LIGO manufactures ideas. In K-12 outreach, LIGO works with our partners to manufacture STEM interest, excitement and literacy.
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LIGO Science: Frontier research in astrophysics

- Large detectors in WA and LA set global standards for measurement precision
- LIGO's target: The detection of gravitational waves produced by the deaths of stars, the births of black holes, the birth of the universe and other exotic events.
- Scientists and engineers in the international LIGO Scientific Collaboration develop and deploy ground-breaking technology in optical measurement systems



•"Colliding Black Holes" courtesy of Werner Benger, Zuse Institute Berlin, Max-Planck Institutue fuer Gravitationel Physics (Albert Einstein Institute) and the Center for Computation & Technology at Louisiana State University



LIGO Outreach: Leverage LIGO's resources to improve the STEM capabilities of students and teachers across the region

- For students, LIGO offers a close-up view of the working world of scientists and engineers.
- For teachers, LIGO offers full-immersion professional development experiences that focus on the nature of scientific inquiry, and content-based experiences that address specific groups of standards.
- For all, LIGO seeks to communicate the notions that 1) science is enjoyable and often exciting, 2) science is driven by questions, not by answers, and 3) STEM might just be for you.





Student experiences: Field trips provide an enjoyable close-up view of an operating research facility

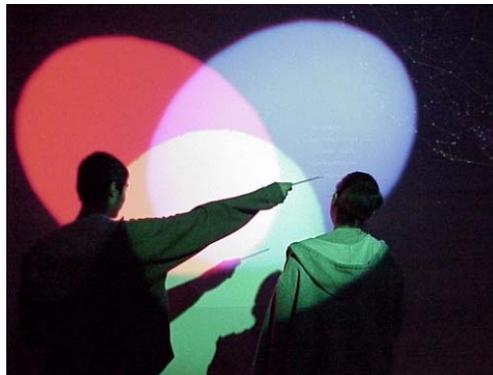
- Exposure to ground-breaking technology
- Opportunities to rub shoulders with scientists and engineers
- 15 engaging hands-on exhibits that connect to WA science standards related to waves, gravity and space





Exhibit play and interactions with Observatory personnel bring LIGO science into focus

- Field trips: Opening a window into a professional STEM environment.



1/27/2013

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Family activities: Tours, open houses, public astronomy events

- Family-oriented open houses, occasionally bilingual





Summer Collaborations

- Dual-site summer academies
- Science day camps





Visits to Schools

- Hands-on science sessions for classes
- Special presentations – Career fairs
- Evening events – science nights, family nights



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Teacher Professional Development Activities

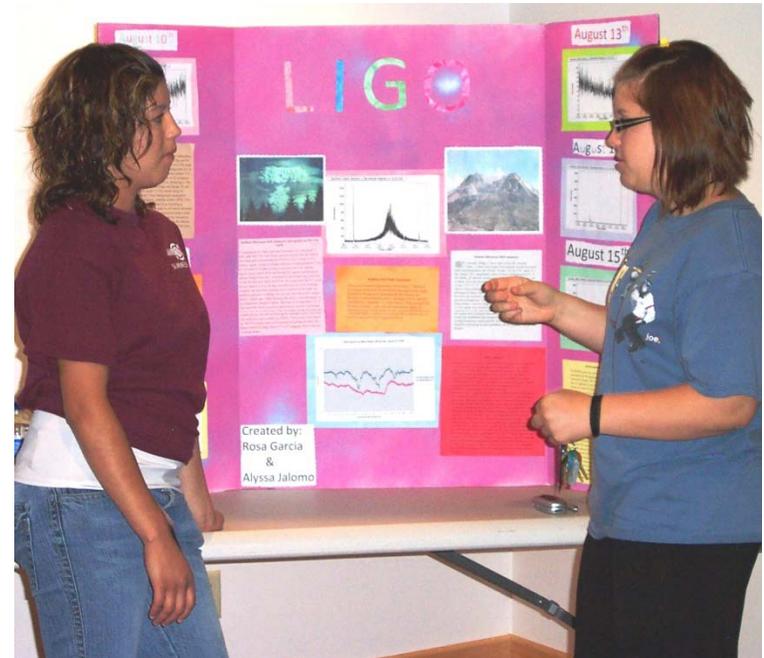
- Two-week summer academy at LIGO – the nature of science and of scientific inquiry
- Two-day (or shorter) content-based workshops
- Off-site short workshops
- Video conferencing





Opportunities for new joint activities?

- Customized small-group interactions with high school students – job shadows
- College and career awareness activities
- Summer teacher internships
- *LIGO strongly believes in the value of connecting students to STEM professionals in the context of work that the students are accomplishing.*





April 13, 2012 at Pasco High





What will be our shared vision for impacting the lives and experiences of students?

