Abstract: More than a hundred years ago, Einstein predicted that there were ripples in the fabric of space-time traveling at the speed of light: gravitational waves. On September 14 2015, the LIGO detectors in Hanford, Washington and Livingston, Louisiana in the US registered for the first time ever a loud gravitational wave signal traveling through Earth, created more than a billion years ago by the merger of two black holes. Several other gravitational waves from black holes were detected since then, including one by LIGO and the Virgo detector in Europe produced by two neutron stars giving birth to a black hole, generating also electromagnetic waves (light!) detected by many telescopes and helping us understand the origin of gold. We will describe the history and details of the observations, and the gravity-bright future of the field.

Gabriela González is a physicist working on the discovery of gravitational waves with the LIGO team. She was born in Córdoba, Argentina, studied physics at the University of Córdoba, and pursued her Ph.D. in Syracuse University, obtained in 1995. She worked as a staff scientist in the LIGO group at MIT until 1997, when she joined the faculty at Penn State. In 2001 she joined the faculty at Louisiana State University, where she is a professor of physics and astronomy. She has received awards from the American Physical Society, the American Astronomical Society and the US National Academy of Sciences, is a Fellow of the Academy of Arts and Sciences and a member of the National Academy of Sciences. She has been a member of the LIGO Scientific Collaboration since it was funded in 1997, served as the elected LSC spokesperson in 2011-2017, and is known for participating in the announcement of the discovery of gravitational waves in 2016. Her work has focused on LIGO instrument development (especially reducing noise sources and tuning alignment systems) and LIGO data calibration and diagnostics, critical to increasing the astrophysical reach of data analysis methods.

The William H. Nelson Physics & Astronomy Research Endowment was set up to honor the memory of Dr. William H. Nelson by the Nelson family. Dr. Nelson worked at GSU from 1974 until his sudden death in 2010.