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FEATURED

Former MSU Billings professor provided research on big astrophysics discovery

By JACI WEBB jwebb@billingsgazette.com Feb 12, 2016



Larry Mayer/Gazette Staff

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Long-time Billings educators Matt Benacquista and Marcie Selsor left Billings in 2006 for Brownsville, Texas, where Matt did res at the Laser Interferometer Gravitational-wave Observatory project, known as LIGO.



One of the biggest scientific discoveries of the century was



Montana State researchers among those proving Einstein right

announced Thursday, and former Montana State University Billings physics professor Matt Benacquista was once part of the research group that made the discovery.

Benacquista appreciates the significance of the news that proved Einstein's general theory of relativity correct again, because Benacquista spent six years doing research with the Laser Interferometer Gravitational-wave Observatory project, known as LIGO. The research was part of the reason he and his artist wife, Marcia Selsor, also a longtime educator at MSUB, moved to Brownsville, Texas, where Benacquista teaches and conducts research at the University of Texas.

Benacquista, who taught at MSUB for 18 years and earned a doctorate at MSU in Bozeman, said LIGO's discovery is another example of Einstein's brilliance.

"It's a testament of how bright he was that it has taken us 100 years to determine Einstein was right," Benacquista said by phone Friday.

The discovery is important because it means astronomers will be able to hear violent collisions that reshape the cosmos. When black holes or neutron stars collide, they create gravitational waves.

"It's like the first time you opened your eyes," Benacquista sai

The sound has been described as a "chirp," but Benacquista, who is used to hearing the sounds of his wife making pots, thought it sounded more guttural.

"It sounds like somebody dropped a lump of clay, like a thud," he said.

Benacquista applied to work with the LIGO group in 2005 and in 2006 moved to Texas to conduct research and teach. Because he quit working with LIGO, his name was not among the 1,004 authors who presented the research findings on Thursday.

"Most of what I did was mentoring grad students who were running the analysis codes on huge clusters at Cal Tech, Wisconsin and Germany," Benacquista said.

Still, he was asked to lead a press conference in Brownsville at the University of Texas on Thursday to announce the discovery.

"I told all of my students that they had to go to the press conference because this is going to be the moon landing of their generation. We had media from Mexico and Texas here. We played it up as big as we could."

Benacquista said the research team was more interested in pure data analysis, and he is interested in astrophysics so he quit working with the program after six years. He suggested that members of the public who are interested in furthering the project get involved through a program known as Citizen Science available through Einstein@Home.

The program uses a computer's idle time to search for weak astrophysical signals from spinning neutron stars using data from the LIGO gravitational-wave detectors, the Arecibo radio telescope and the Fermi gamma-ray satellite. So far, Einstein@Home volunteers have discovered 50 new neutron stars.

Jaci Webb

Jaci Webb covers entertainment for The Billings Gazette.

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