



Manuela Campanelli

Manuela Campanelli is a professor of astrophysics and mathematics

at Rochester Institute of Technology. She is also the director of the Center for Computational Relativity and Gravitation, and leads the AstroDance project.

velop a novel dance-based performance to educate the general public about LIGO and gravitational wave astronomy.

Sponsored by the National Science Foundation (NSF) program “Communicating Research to Public Audiences” (CRPA, DRL-1136221), the production features a fictional superman-like character “Gravity Man” capable of explaining how the universe evolved, from the Big Bang to the formation of our solar system, according to gravitation and other fundamental laws of physics. Doing so, he introduces challenging concepts described by Einstein’s general theory of relativity, such as space-time, gravitational waves and black holes, to deaf and hearing audiences. The performance includes music, dance, multimedia displays and visualizations. A photo of the performance can be seen below.

is aided by computer generated graphics and high-end visualizations of gravitational wave phenomena produced by Hans-Peter Bischof, a professor of computer science at RIT and a member of the LSC Education and Public Outreach group. The dance includes student performers from the NTID/RIT Dance Company and choreography developed by a well-known artist, Thomas Warfield, who has worked with many of the world’s leading artists, including directors Franco Zeffirelli and Spike Lee, composers John Adams and Marvin Hamlisch, scientist Carl Sagan, singer Placido Domingo and others. The performance is highly visual and incorporates the use of American Sign Language to make it accessible to both deaf and hearing audiences. The choreography is designed to connect the dance to key building blocks of astrophysics. Joseph Bochner, department of Cultural and Creative Studies at NTID, is responsible for oversight of the traveling production and project evaluation.

Astrophysics and dance at RIT

A team of astrophysicists, computer scientists, theater artists and designers, social scientists, science educators, dancers and choreographers from the Rochester Institute of Technology’s Center for Computational Relativity and Gravitation (CCRG) and the National Technical Institute of Deaf (NTID) worked together to de-

Manuela Campanelli, who is the principal investigator of the project and the Director of the CCRG, and her RIT colleagues, Jake Noel-Storr, Yosef Zlochower and Jason Nordhaus, have created a storyline that presents these concepts in easily understandable vignettes that correspond to the dance elements being presented. This

The production is traveling to various locations in the northeastern United States. Performances are planned for select sites in New York, Ohio, Connecticut, Rhode Island, Washington DC, Pennsylvania and Maryland. It is estimated that the project will directly impact 7,000 individuals, approximately half of whom will be deaf or hard-of-hearing. Project activities will be disseminated through the website hosted by the Rochester Institute of Technology, as well as social networking sites including Facebook, Twitter, and Google+. The project will also be promoted through science festivals and media events.



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Dancing with Black Holes [Credit Erin Auble]