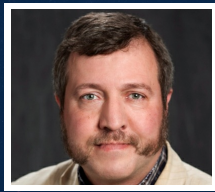


# Probing the Extreme Regimes of Nature



Jorge Pullin  
Horace Hearne Chair, Theoretical Physics

## CURRENT RESEARCH

### Unlocking how the laws of physics hold up

Deciphering the inner workings of the universe has been a task challenging scientists for centuries. While many questions remain unanswered, each new breakthrough opens a window of opportunity into seeing the world in a new light and therefore exposing the properties of the universe. Dr. Jorge Pullin, of Louisiana State University, is working to see how the laws of physics fit together within the interface of quantum theory and gravity described by Einstein's general theory of relativity. As one of the early developers of the field of loop quantum gravity, a theory that attempts to describe the quantum properties of the universe and gravity, Dr. Pullin's research has led him and his colleagues to inquiries about the foundations of quantum mechanics as well as the fundamental nature of the universe.


Because inconsistencies are often found between various laws of physics, noting these inconsistencies can lead to major paradigm shifts. Such an innovative approach to research requires the utmost creativity and scientific rigor; each day Dr. Pullin and his team are required to rethink how they describe the very way in which we have conceptualized the universe thus far. He and his team are essentially the first to apply loop quantum gravity techniques to their current project with black hole evaporation. In addition, Dr. Pullin's group has unique numerical computational strengths involving high performance computing, which is not common in this area of research.

Current research includes:

- Black Hole Evaporation: Dr. Pullin and his team are concentrating on how black holes evaporate. This work requires probing general relativity and quantum field theory in regimes never previously...

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## AFFILIATION

 Louisiana State University

## EDUCATION

- Ph.D., in Physics, 1988 , Instituto Balseiro, Argentina
- M.Sc., in Physics, 1986 , Instituto Balseiro, Argentina

## AWARDS

- Jack H. Keuffel Award, 1993
- Sloan Research Fellowship, 1995
- Guggenheim Fellow, 1988
- Fulbright Fellowship, 2001

## RESEARCH AREAS

Technology, Space, Computational Sciences / Mathematics, Materials Science / Physics

## FUNDING REQUEST

Your contributions will support the continued research of Dr. Jorge Pullin, of Louisiana State University, as he probes the most extreme regimes of nature to see how our laws of physics hold together. Donations will support the necessary \$60K per year required to support each postdoctoral researcher. In choosing to donate you will play a role in creating an opportunity for physicists to continue to build their expertise and to work towards a fundamental understanding of the universe.