

## **Professor Daniela Bortoletto to help plan the future of elementary particle and astro-particle physics.**

Professor Daniela Bortoletto is one of 21 physicists appointed by the Department of Energy (DoE) to develop a roadmap for the next decade and beyond for the entire field of elementary particle and astro-particle physics in the United States, within the context of world wide developments in these fields. Particle physics seeks to answer fundamental questions about the formation, evolution and fate of the Universe. This endeavor is funded by the DoE and the National Science Foundation at 800 million dollars annually. Professor Bortoletto will serve on the Particle Physics Project Prioritization Panel (**P5**). The P5 roadmap includes a study of neutrinos the ghost-like particles produced in radioactive decays, the mysterious substance known as dark matter which binds our Universe and the even more mysterious dark energy which drives the Universe apart. P5 will consider opportunities for discovery at the Large Hadron Collider (LHC) at CERN the European Laboratory for Particle Physics in Geneva, Switzerland, which begins operation in 2007, and the R&D needed to build the next generation accelerator, the International Linear Collider expected to start operation in about ten years. Major discoveries will be made the next two decades and it is critical that the U.S. maintains its preeminent position in this essential scientific field. P5 will make its recommendations to HEPAP the joint DoE NSF High Energy Physics Advisory Panel. The final recommendations will be submitted by HEPAP to the DoE and NSF.

### **Professor Daniela Bortoletto**



Professor Bortoletto has been a faculty member at Purdue since 1992. She is a Fellow of the American Physical Society (APS) and is an elected member of the Division of Particles and Fields Executive Committee of APS. She is an internationally known physicist who is a world expert on the development and use of silicon solid state detectors in particle physics experiments. She is currently a member of the CDF experiment at Fermilab exploring physics with the highest energy particle collisions yet produced. In 1995 with CDF she was a co discoverer of the top quark, a fundamental particle with a mass  $\sim 180$  times that of a proton.

She is currently a leader of the next generation accelerator experiment, the Compact Muon Spectrometer, at LHC. The LHC will produce collisions with energy an order of magnitude greater than at Fermilab. It is expected that in the billions of collisions produced each second physicists will discover the origin of mass and the mechanism that gave birth to the Universe. Professor Bortoletto is also the Purdue leader of the NSF funded Quarknet outreach program which involves high school teachers and their students in fundamental research

### **P5 membership:**

Abe Seiden (UCSC) Chair  
Hiroaki Aihara (University of Tokyo)  
Andy Albrecht (UCDavis)  
Jim Alexander (Cornell)  
Daniela Bortoletto (Purdue)  
Claudio Campagnari (UCSB)  
Marcela Carena (FNAL)  
Fred Gilman (Carnegie Mellon University)(Ex-Officio)  
Dan Green (FNAL)  
JoAnne Hewett (SLAC)

Boris Kayser (FNAL)  
Karl Jakobs (University of Freiburg)  
Jay Marx (LBNL)  
Ann Nelson (U. of Washington)  
Harrison Prosper (Florida State U.)  
Tor Raubenheimer (SLAC)  
Steve Ritz (NASA)  
Michael Schmidt (Yale)  
Mel Shochet (U. of Chicago)  
Harry Weerts (Michigan State U.)  
Stanley Wojcicki (Stanford U.)