Witek Nazarewicz Awarded 2012 Tom W. Bonner Prize in Nuclear Physics

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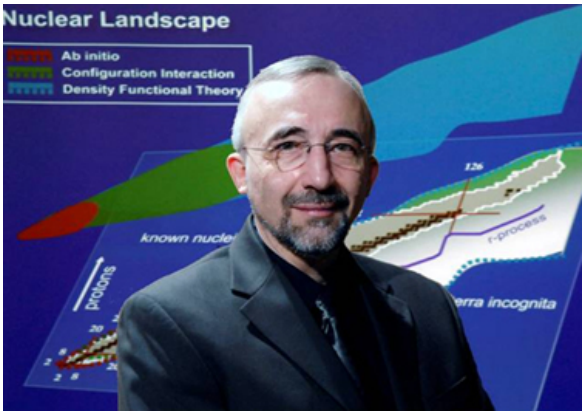
Physics Professor Witek Nazarewicz has a penchant for rare and exotic treasures in the physical world; an interest that has earned him the 2012 Tom W. Bonner Prize from the American Physical Society.

The Bonner Prize recognizes and encourages outstanding experimental research in nuclear physics, including the development of a method, technique, or device that significantly contributes in a general way to nuclear physics research.

"This is the most prestigious nuclear physics prize in the United States," said Professor Soren Sorensen, head of the physics department.



Professor Witek Nazarewicz

Nazarewicz was cited "for his foundational work in developing and applying nuclear Density Functional Theory, motivating experiments and interpreting their results, and implementing a comprehensive theoretical framework for the physics of exotic nuclei." His research is focused on the nucleus; the engine of an atom that typically makes up less than one ten-thousandth of its size yet comprises more than 99 percent of its mass. Though small in stature, nuclei are powerful entities, providing fuel for stars and figuring prominently in nuclear medicine, energy production, and national defense. While most are stable, it's the exotic nuclei that captivate Nazarewicz. These rare isotopes with extreme numbers of protons and neutron have complicated internal structures and live short and precarious lives, making them difficult to study. Nazarewicz uses powerful tools (such as Oak Ridge National Laboratory's Jaguar supercomputer) to carry out investigations on how these nuclei are structured, live, interact, and decay. Not only does this work contribute to a comprehensive description of all nuclei independent of whether they are stable or not, but the findings can help physicists fabricate "designer nuclei" with specific and desirable properties.

Nazarewicz has been at the forefront of both national and international collaborations working in this area of nuclear physics. He is a co-director of the U.S. Department of Energy's UNEDF (the Universal Nuclear Energy Density Functional) collaboration and helped establish joint institutes on exotic nuclei in Japan and France to work with U.S. scientists. He is listed among Thomson Reuters' highly-cited researchers in physics and is a fellow of the American Physical Society, the Institute of Physics, and the American Association for the Advancement of Science. He also teaches graduate and undergraduate-level physics courses at UTK.

Nazarewicz came to East Tennessee in 1991 as a research professor at the UTK-ORNL Joint Institute for Heavy Ion Research. He joined the UTK physics faculty as a professor in 1995, and has been a member of the ORNL Physics Division's Distinguished Research and Development staff since 1996. In 1999 he became the scientific director of ORNL's Holifield Radioactive Ion Beam Facility. Nazarewicz earned a master's degree in technical physics and applied mathematics at the Warsaw University of Technology (WUT) in 1977. In 1981 he completed the Ph.D. in physics at the Institute for Nuclear Research in Warsaw and then joined the physics faculty at WUT before becoming a professor of physics at Warsaw University in 1991, a title he maintains.

Nazarewicz's commitment to nuclear physics mirrors that of the late Tom W. Bonner, for whom the distinguished prize is named. Bonner was a nuclear physicist at Rice University who was internationally recognized for his contributions to neutron physics and his dedication to scientific affairs. The prize was endowed as a memorial by Bonner's friends, students, and associates, and has been awarded annually since 1965. Nazarewicz will receive the 2012 prize at a special ceremonial session during the American Physical Society meeting in Atlanta next spring.