J P Draayer, J Phys Chem Biophys 2018, Volume 8
DOI: 10.4172/2161-0398-C2-030

4th International Conference on Physics

September 17-18, 2018 | Berlin, Germany

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Intersection of science & technology at the Thomas Jefferson National Accelerator Facility

Exploiting symmetries to unveil simplicity within complexity remains the holy grail of nuclear physics. Frequently referenced as 'from quarks to the cosmos' studies, this topic is laced with technical innovations that have proven to spawn big benefits for mankind. The author plans to briefly discuss the scientific agenda of Jefferson Lab, along with its exemplar technologies that highlight current and future innovation – from faster and more energy efficient computer chips to the early detection of cancer – all driven forward by scientific discovery at this the newest of the DOE's labs, a lab that was purposed to explore and expose the very nature of the strong and weak interactions, which dominate physical matter at the extremes of the universe. The author will also comment on the rapidly changing nature of science, as it plays a growing role in shaping our future – things that used to be framed as science for the sake of science, now emerging as the underpinning of significant technologies that can directly impact the world order. From very sophisticated hockey-puck-sized communications satellites to quantum computing, it seems we are knocking on the door a different brave new world. Nevertheless, exposing simplicity within complexity and exploiting it remains key!

Biography

J P Draayer is currently president of SURA and Roy P.Daniels Professor of Physics at Louisiana State University, USA. Dr. Draayer received a Ph.D. in Physics and Mathematics (1968) and a B.S. in Physics and Electrical Engineering (1964), both from Iowa State University. He is a fellow of the American Physical Society and of the American Association for the Advancement of Science. In his 30+ years as a faculty member in the Department of Physics and Astronomy at Louisiana State University, Dr. Draayer has served as chair of his Department, Vice-president of the Faculty Senate, and Chair of the Council for the College of Basic Sciences. He also holds a joint appointment as a professor in the Department of Computer Science. He has sponsored 17 long-term/sabbatical visitors, 13 postdoctoral associates, 17 Ph.D. candidates, plus a complement of M.S. students.

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