



**Wednesday
October 30, 2024
3:00pm
Room 1018 Dow**

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From KMS Fusion to HB11 Energy, Xcimer Energy, and Fuse Federal USA; A 50 Year Inertial Fusion Energy Perspective

The achievement of ignition and gain on NIF has validated the scientific basis of inertial confinement fusion (ICF). The Department of Energy (DOE) and venture capital funded private companies are again interested in inertial fusion energy (IFE). The new DOE Milestone-Based Fusion Development Program and other Federal programs are creating public-private partnerships to accelerate progress toward fusion pilot plants. The U.S. leads in ICF, but the race to develop the first IFE power plant is an international competition. Private companies will need to play a leading role in developing the necessary technologies. This talk will provide a 50-year perspective as well as discuss promising strategies for the U.S. IFE program from both public and private viewpoints. It will also describe the research of three companies that I am advising: HB11 Energy Pty Ltd. (aneutronic proton-boron fuel cycle), 2) Xcimer Energy (IFE technology to achieve high laser energies), and 3) Fuse Federal (next generation pulsed power technologies for both defense and energy applications).

About the Speaker: Dr. Tom Mehlhorn is an advisor to several private fusion companies including HB11 Energy Pty LTD, Xcimer Energy, and Fuse Energy. He is also an adjunct professor of Nuclear Engineering and Radiological Sciences at the University of Michigan, and a Distinguished Visiting Scientist at the University of Rochester Laboratory for Laser Energetics. From 2009 to 2019 he directed the Naval Research Laboratory Division of Plasma Physics, following a 31-year career in pulsed power fusion and high energy density physics at Sandia National Laboratories. He is the author/coauthor of over 160 papers (H-index=43). He was recognized in 2004 with a University of Michigan Engineering Alumni Society Merit Award (NERS) and is a Fellow of the AAAS in Physics (2006), the APS Division of Plasma Physics (2011), the IEEE (2014), and the ANS (2020). In 2019 he received the IEEE Nuclear & Plasma Sciences Society Peter Haas Award and a Lockheed Martin NOVA Award for Thermonuclear Neutrons on Z in 2003.