

Troy Carter, Ph.D.



Troy Carter is Director of the Fusion Energy Division at Oak Ridge National Laboratory (ORNL), where he leads programs in plasma physics, fusion materials, and enabling technologies. He oversees the development of the Materials Plasma Exposure eXperiment (MPEX), ORNL's research contributions toward ITER, and public-private partnerships that support the growing fusion energy industry.

Carter is on leave as a Professor of Physics at UCLA, where he was Director of the Basic Plasma Science Facility (BaPSF) and the Plasma Science and Technology Institute (PSTI). His research on waves, instabilities, turbulence, and transport in magnetically confined plasmas is motivated by both astrophysical processes and the development of fusion energy. He is a Fellow of the American Physical Society and the

American Association for the Advancement of Science and a recipient of the APS John Dawson Award for Excellence in Plasma Physics Research and UCLA's Abelmann Award for Teaching Excellence.

Carter has served on a range of advisory committees for the plasma physics and fusion research communities, including the DOE Fusion Energy Sciences Advisory Committee, the Scientific Advisory Board (Fachbeirat) for the Max Planck Institute for Plasma Physics, and Program Advisory Committees for the DIII-D and Alcator C-Mod tokamaks and the NSF Frontier Center for Magnetic Self Organization. Carter served on the NASEM Committee for the 2020 Decadal Assessment of Plasma Science and led the DOE FESAC Long Range Planning process that resulted in the 2021 report "Powering the Future: Fusion and Plasmas." He was awarded the Fusion Power Associates Leadership Award in recognition of his fusion community leadership contributions.

Carter received BS degrees in Physics and Nuclear Engineering from North Carolina State University in 1995 and a PhD in Astrophysical Sciences from Princeton University in 2001.