Tom Downar is a Professor of Nuclear Engineering and Radiological Sciences (NERS) in the College of Engineering at the University of Michigan.   He received his BS degree from the U.S. Military Academy in 1974 and his PhD in Nuclear Engineering from MIT in 1984 where he was a Hertz Fellow.   Before joining the faculty of the University of Michigan in 2008, Tom was a Professor at Purdue University and UC Berkeley where he served on the tenure and promotion committees at the Department and College levels. For the past 4 years at the University of Michigan, Tom has been a member of Case Book Committees and has been the Chair of the Graduate Program in NERS. In 2010, Tom was selected by the Department to receive the NERS faculty achievement award for his outstanding contributions to teaching, research, and service in the department.

Tom's research is in the area of nuclear reactor physics and multiphysics computational methods for nuclear reactor analysis.   The research in Tom's group over the years has focused on the development of computational methods and computer codes for solving the Boltzmann Transport Equation to determine the neutron and photon flux distributions in a nuclear reactor during normal operating and transient accident conditions.   The principal sponsors for his research have been the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE).   The computer code PARCS developed by Professor Downar and his research group is currently used by the U.S. NRC to certify the safety performance of all the reactors operating in the U.S., as well as by several other international nuclear regulators to analyze many of the other reactors operating around the world.   Currently, Tom's group is developing the next generation reactor neutronics analysis code, MPACT, as part of the DOE's 120 million dollar Nuclear Reactor Simulation Hub, CASL. Because of Tom's research and expertise in reactor analysis he has become a key advisor to the U.S. NRC Advisory Committee on Reactor Safeguards (ACRS) for decisions concerning the safety of existing and future reactors in the United States.

Internationally, Tom has become recognized as one of the leading experts in the world in nuclear reactor dynamics and nuclear engineering. He has served on several prestigious advisory boards and in 2010, he chaired the external review board for the Korea Atomic Energy Research Institute (KAERI) and has been a permanent member of external advisory boards for several other international research laboratories and universities, to include the Paul Scherrer Institute (PSI) and Ecole Polytechnique Federale de Lausanne (EPFL) in Switzerland.

As a Professor at Purdue, Berkeley, and now Michigan, Tom has graduated 23 Ph.D. and 32 M.S. students. He has co-authored a book and published more than 100 papers in refereed journals.   Tom's current research group in NERS consists of 10 PhD students, 3 MS students and 5 Research Staff.   Tom has received numerous teaching and research awards during his career and is a Fellow of the American Nuclear Society.