

## PEOPLE

Faculty

Research Staff

Postdocs

Administrative Staff

Women in NSE

Meet Our Students



## Dennis G. Whyte

Professor of Nuclear Science and Engineering

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## Education

Ph.D. U. Quebec 1993

M.Sc. U. Quebec 1989

B. Eng. U. Saskatchewan 1986

## Research

Magnetic Fusion Energy: Boundary plasma physics, advanced plasma confinement regimes in tokamaks, plasma diagnostics, mitigation of disruption damages

Plasma-Surface Interactions: basic physics of plasma-material interfaces, dynamic measurement techniques for material evolution under plasma bombardment, implications of plasma-surface interactions in magnetic fusion reactors

Accelerators and Surface Analysis: low-energy nuclear scattering techniques for material analysis and damage, development of in-situ surface diagnostic methods for magnetic fusion

## Recent Publications

1. D. G. Whyte, A. E. Hubbard, J. W. Hughes, B. Lipschultz, J. E. Rice, E. S. Marmor, M. Greenwald, I. Cziegler, A. Dominguez, T. Golfopoulos, N. Howard, L. Lin, R. M. McDermott, M. Porkolab, M. L. Reinke, J. Terry, N. Tsujii, S. Wolfe, S. Wukitch and Y. Lin, "I-mode: an H-mode Energy Confinement Regime with L-mode Particle Transport in Alcator C-mod," Nuclear Fusion 50, 105005, 2010.
2. Z. S. Hartwig and D. G. Whyte, "Simulated plasma facing component measurements for an in situ surface diagnostic on Alcator C-Mod," Review of Scientific Instruments 81, 10E106, 2010.
3. D.G. Whyte "On the consequences of neutron induced damage for volumetric fuel retention in plasma facing materials," Journal of Nuclear Materials, 390-391, 911-915, June 2009.
4. D.G. Whyte, et al. "Studies of requirements for ITER disruption mitigation systems," Proc. 22nd IAEA Fusion Energy Conference, Geneva, Switzerland, October 2008, IT/P6-18 1-4.
5. D. G. Whyte, R. Granetz, M. Bakhtiari, V. Izzo, T. Jernigan, J. Terry, M. Reinke & B. Lipschultz "Disruption mitigation on Alcator C-Mod using high-pressure gas injection: Experiments and modeling toward ITER." Journal of Nuclear Materials, 363-365, 1160-7, June 2007.

## Teaching

22.62 Fusion energy

22.63 Fusion Technology

22.01 Introduction to Nuclear Engineering and Ionizing Radiation

## Awards

- Ruth and Joel Spira Award for Distinguished Teaching
- Fellow, American Physical Society Division of Plasma Physics
- Department of Energy Plasma Physics Junior Faculty Award

## Recent News

**NSE's Dennis Whyte named Director of the Plasma Science & Fusion Center**

**NSE's Whyte wins Nuclear Fusion Journal Award**

**NSE Fusion Program Moves Beyond Plasma, Towards Practical Power-Plant Issues**

**A reality check on nuclear fusion at MIT**

**Understanding and predicting materials behavior: NSE takes an interdisciplinary approach**

**NSE Professor Dennis Whyte awarded MISTI-MITOR Project grant**

**NSE Professor Dennis Whyte appointed to Inertial Fusion Energy Committee**

## Labs + Groups

Plasma Science &amp; Fusion Center

MIT Alcator C-Mod

Plasma Surface Interactions Science Center

## Video



Research Thumbnail :: Dennis Whyte



