

MECHANICAL ENGINEERING DEPARTMENT
ME/ISyE 8773-8774
and
ME 8800 – Modern Developments in Mechanical Engineering

**LIGHTING CONSUMES 25% OF ALL ELECTRIC POWER - HOW MUCH
CAN THIS BE REDUCED?**

by

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Wednesday, April 18, 2007
3:15 pm — Refreshments — Room 401 Walter DTC
3:30 pm — Graduate Seminar — Room 402 Walter DTC

ABSTRACT — Conservation and efficiency improvements represent a partial response to energy and environmental problems. These can “buy time” for the development of new primary energy sources. Figures of merit for light sources will be introduced. Efficacy or efficiency is important, but there are other performance parameters. Lighting technologies in use today including: Incandescent, Fluorescent (low pressure, glow discharge), Low pressure Na (low pressure discharge), Hg High Intensity Discharge (Hg-HID), High pressure Na (HPS), Metal Halide HID (MH-HID), and Solid State Lighting, will be reviewed. Major R&D issues and prospects for further improvements of these technologies will be discussed.

BIO — **James E. Lawler** is the *Arthur and Aurelia Schawlow Professor of Physics* at the University of Wisconsin-Madison. He has a long term interest in quantitative spectroscopy for addressing applied science problems in plasma technology and fundamental problems in astrophysics. Current research activities include: (1) a study of the opacity of Hg plasmas at extreme high pressures (200 to 1000 bar) for lighting technology and (2) a providing basic spectroscopic data for determining the origins of the heavy elements and the chemical evolution of the Galaxy. J. E. Lawler has won the APS Allis Prize and IUPAP Penning Award for his work in Plasma Spectroscopy.

Informal Faculty Luncheon: Wednesday, April 18, 2007, 12:00 noon. Meet in 1100 ME and walk to lunch with other faculty. Prof. James Lawler will be able to attend.