

# High power lasers and their applications

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**Dr. Martin Richardson**

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**Thursday, December 1, 2016**

**4:00 – 5:00 pm**

**Skurla 110**

This talk will provide an overview of the progress made recently in high power laser development and discuss some of the application pathways they have opened. The talk will cover both high power cw lasers, now capable of powers in the 100 kW range, and pulsed lasers in the nanosecond, picosecond and femtosecond domains. In the latter, intensities approaching those needed for exotic reactions at boundaries of nonlinear quantum electrodynamics are within reach. We will summarize the activities in these areas in progress at UCF, and focus discussion on application areas in advance manufacturing, defense and space technologies.

Martin Richardson has a long career in high power laser development and their applications since gaining his Ph.D. at Imperial College. He has worked in many laboratories across the globe, including Canada, France, Germany, Japan, Australia, Qatar and the Soviet Union. He held primary appointments at NRC Canada and the University of Rochester, before joining UCF, where in 2007 he founded the Townes Laser Institute, named after the late Nobel Laureate, Charles Townes who invented the concept of the laser. Richardson has supervised over 75 graduate students, published over 450 papers, and been awarded over 25 patents. He is a fellow of AAAS, APS, OSA, IEEE, SPIE, JSPS and IoP, has been awarded the Schardin Medal from the German Physical Society, the Harold E. Edgerton Award from SPIE, *Docteur Honoris Causa* from Bordeaux University, and a Jefferson Science Fellowship from the National Academy of Sciences at the U.S. State Department. He current has a secondary appointment at NTU in Singapore, and has accepted the Fulbright-Tocqueville Distinguished Chair at Bordeaux University in 2017.