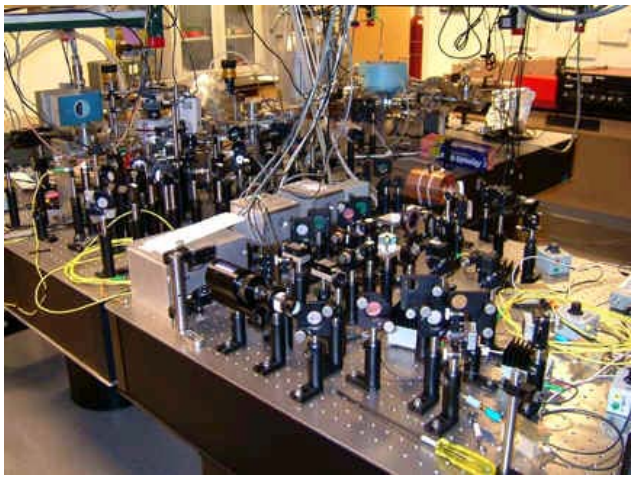
AMO Seminar



Friday, September 28, 2007
2:00 pm
Physics conference room (Small Hall 123)

Experiments in Ultracold Atomic and Molecular Physics

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We will discuss recent results from several ongoing ultracold experiments at ODU. In the first, we have studied the interaction between ultracold rubidium atoms and ultracold, metastable-state argon atoms (Ar*) confined in a magneto-optical trap (MOT). Here we are interested in understanding the dynamics of heteronuclear ionizing collisions at low temperature and also are working toward the goal of producing ultracold, ground state RbAr, a weakly-bound van der Waals molecule. We will also present recent results on photoassociative spectroscopy carried out on colliding Ar* atoms confined in the MOT. In a second experiment, we have investigated the spatial confinement of ultracold rubidium atoms in an optical dipole force trap using both continuous-wave (cw) and ~100 ps pulsed light from a Nd:YAG laser. We will conclude with a short discussion of the future directions of these experiments, including using the free electron laser at Jefferson Laboratory to construct an optical trap.