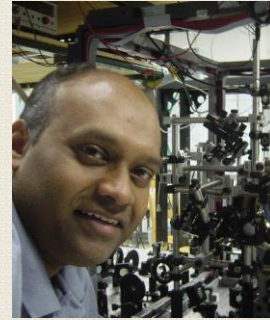


FYRE First Year Research Experience 2011-12

Faculty Member in Physics is looking for First Year students to work on research projects through the FYRE program.

To apply, e-mail Martha Weber at weberme@muohio.edu



NAME

ASSOCIATE PROFESSOR, SAMIR BALI

E-mail: balis@muohio.edu

Website: <http://www.cas.muohio.edu/~balis>

Curious about Lasers?

Relevance of our research

Here's your chance to find out how we use lasers to create the Coldest Matter in the Universe. We also use lasers to perform non-invasive sensing of optical properties of biotissue, with unprecedented precision.

Project Title: *The Physics of Lasers and Ultracold Atoms, and BioImaging*

Sample Projects - Build a high-power laser system for which the wavelength is tunable.

- Build an Optical Lattice by criss-crossing several laser beams.
- Populate the lattice with cold atoms, forming a "designer" crystal.
- Create an optical sensor for non-invasive particle sizing in biotissue.

Students receive training in optical technology such as acousto-optical deflectors and magneto-optical rotators, lasers, optical fibers, ultrahigh vacuum systems, magnetic field configurations, ultralow level light imaging systems, and sophisticated electronics for temperature/frequency-control of the lasers. Most of the experimental setup, including the lasers, is home-built, for the relevant commercial technology does not exist.

Other Possible Research Outcomes

- course credit
- salary for summer research
- presentation at national conferences
- publication in top-quality refereed journal

There are also additional research opportunities in the 10 week block of summer 2012

Visit his website for more information! <http://www.cas.muohio.edu/~balis>