



TEL: 225-578-2261
FAX: 225-578-5855
<http://www.phys.lsu.edu>

202 NICHOLSON HALL
Louisiana State University
Baton Rouge, Louisiana 70803-4001

WEEKLY CALENDAR

February 3 - 7, 2014

DEPARTMENTAL COLLOQUIUM

"Applications of Radiation Physics to Electron Beam Therapy Research"

3:30 PM February 6, 2014
109 Nicholson Hall

Robert Carver

Mary Bird Perkins Cancer Center, Baton Rouge, LA

Host: Wayne Newhauser

• *Refreshments served at 3:10 PM in 232 (Library) Nicholson Hall* •

Electron beam therapy (EBT) is a well-established treatment modality used primarily for the treatment of disease lying within 6 cm of the patient surface, especially for sites located in the chest wall, head, and neck. Electron beams delivery systems are designed to deliver a uniform electron beam with minimal photon dose contamination. My research is focused primarily on the development of conformal electron therapy and improved electron beam delivery systems. Electron conformal therapy (ECT) allows for the maximization of dose to diseased regions of the patient while minimizing the exposure of healthy tissue. Recent technological advances have made electron conformal beam therapy more widely available through the use of Bolus ECT. This talk will review physics of electron beam therapy and discuss the applications of radiation physics in the implementation of conformal electron therapy. It will also discuss the use of radiation physics in the design of electron beam delivery components to improve robustness, uniformity, and photon dose contamination.

PUBLICATOINS:

1. "Collective Modes in Light Nuclei from First Principles", **T. Dytrych, K.D. Launey, J.P. Draayer, P. Maris, J.P. Vary, E. Saule, U. Catalyurek, M. Sosonkina, D. Langr and M.A. Caprio**, Physical Review Letters, PRL111, 252501 (2013).