



## Ed Luther

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**Host: Thomas Webster**  
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## “Laser Interference Based Systems”

**Wednesday, Aug. 13**  
320 Shillman Hall  
11:45 a.m. – 1:00 p.m.

*Refreshments will be served*

**ABSTRACT** The first part of the presentation is a historical review of the development of quantitative systems. The major emphasis is on laser based systems, with an emphasis on laser interference based systems. Applications from the Pharmaceutical Sciences Department will then be presented:

- Cell cycle based cellular toxicology
- Dopaminergic Neuron Quantification in brain sections using chromatic dyes
- Fluorescence and chromatic stained quantification of tissue sections
- Multicellular tumor spheroids analysis
- Use of DNA base pair composition for specific identification of malaria parasites (*Plasmodium spp.*) and bacteria
- Imaging and mapping of tissue constituents using MALDI Mass Spectrometry and Quantitative Laser Scanning Cytometry.

The final topic will be a late breaking cross platform analysis (Laser Scanning Cytometry and Phase Holographic Imaging M4) of a panel of nanoparticle based formulations targeting the taxol resistant cell line SKOV-TR, showing the dosage related death mechanisms (apoptosis, necrosis, mitotic catastrophe), in a single end point experiment, as well as a 4 day time tracking showing the effects of the optimal effective dosage.

**BIOGRAPHY** Ed Luther is the Laboratory Supervisor for the Department of Pharmaceutical Sciences Core Facilities. The facilities are rapidly expanding their Quantitative Imaging capabilities, and currently include a Zeiss LSM 700 confocal microscope, a CompuCyte iCyte Research Imaging Cytometer, a Biotek Synergy 1 plate reader, and most recently, a Phase Holographic Imaging Holomonitor M4 label free time lapse imaging system. Ed has been involved with microscopy and quantitative imaging for 40 years.