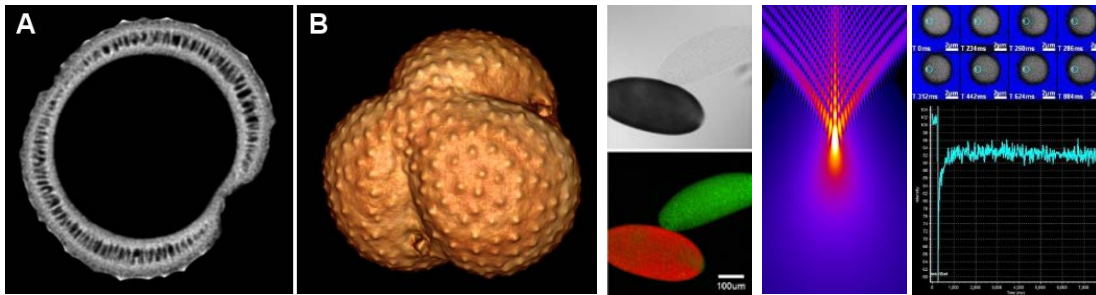


# THEORY AND APPLICATIONS OF BIOL 608 LIGHT MICROSCOPY



**3 credits Spring Semester ILSB Rm. 1143**  
**Lectures: Wed+Fri 1-2:15 PM, flexible lab sessions**

**For biologists, material scientists, and students from other disciplines. Gain theoretical background and practical experience in operation of light microscopes, sample preparation, image acquisition and image processing.**

## **Topics:**

- Fluorescence Microscopy, Confocal Imaging, Multiphoton Excitation
- Brightfield, Darkfield, Phase Contrast, Differential Interference Contrast, Polarized Light Microscopy
- Optical surface profilometry
- Studying molecular dynamics and interactions by fluorescence microscopy: FRAP, FRET, FLIM, Fluorescence Correlation Spectroscopy, RICS
- Image processing and analysis, deconvolution
- Principles of superresolution LM (STED, STORM, PALM, SIM, ...)

## **Lab section:**

- Demonstration and hands-on experience with light microscopes (wide-field, laser scanning confocal)
- Analyzing point spread functions, resolution and optical aberrations
- Image processing and analysis

## **Contact:**

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**<http://microscopy.tamu.edu>**