



Invitation to

WORKSHOP IN

Photomicrography

OCTOBER 19–23TH 2009

Workshop in Digital Photomicrography

Karolinska Institutet, Huddinge University Hospital, Huddinge
19 Oct. - 23 Oct. 2009

Overview

Photomicrography is a powerful tool used for the documentation and presentation of information achieved from research. Despite much effort and intense preparation, the photographic end-result is often not satisfactory for technical reasons. Because digital photo equipment has advanced so rapidly, there are now numerous products for analyzing and measuring samples. This new technology often requires completely new knowledge and approaches used in photography that are now required to compliment computer skills.

Target population

The course has been developed for post-graduate students, and researchers in various fields of biomedical engineering who need practical knowledge of microscopy and imaging techniques for the presentation of their work.

Course overview & registration fee

- This course has a strong theoretical and hands-on component evenly distributed over the five days.
- The workshop explores in good depth fundamentals of brightfield microscopy as well as various other microscopy techniques such as fluorescence and phase. A significant amount of content is also dedicated to electronic imaging and image processing using Adobe PhotoShop®.
- This is an approved Phd course, number 1434, at Karolinska Institutet and has a credit value of one point.
- The registration fee for the course is 6 500 SEK and 5 500 SEK for students. The number of participants are limited to 18 participants. **Application deadline is 10 September 2009.**

Objective

After completing the course, the participants will gain a complete understanding of the fundamentals of optical microscopy and be able to use appropriate presentation methods for conveying their research results in a clear and informative way. Multimedia software and image processing software will be used including Adobe Photoshop® and Microsoft PowerPoint® as well another digital microscopy software for image acquisition.

Course Content

The course will include theory and practice investigating conventional-light microscopy, darkfield, ultra-violet fluorescence, phase contrast, interference (DIC).

Additionally, the course will dedicate one day to Confocal microscopy and the Analysis and Measurement of Data through excellent lecture and demonstration sessions.

Following the mastery of microscopy, the course explores fundamentals of digital photography. The participants will be exposed to digital cameras and their proper operation. Video and still digital cameras are overviewed relative to application needs. Relevant issues such as capture, processing, transmission and storage concerns are explored.

Participants will work individually with popular image editing software's such as Adobe PhotoShop® and Microsoft PowerPoint®. Exercises have been created to develop image-processing imperatives such as file resolution and type, adjusting of tones and contrast, and composition.



Course learning objectives:

- 1 - Problems in magnification photography
- 2 - Magnification as a subject
- 3 - The Light Microscope & its Parts
- 4 - Illumination and Aperture Diaphragm
- 5 - Digital imaging and Magnification Photography
- 6 - Identifying good photomicrographs
- 7 - Proper exposure determination
- 8 - Proper handling of colour balance in digital images
- 9 - Contrast, saturation, grey balance, unsharp mask
- 10 - Considerations for Black & White digital photomicrography
- 11 - Evaluating Colour images for projecting or printing applications
- 12 - Contrast producing techniques : phase contrast, dark field, DIC and fluorescenc
- 13 - Video Microscopy
- 14 - Confocal Microscopy
- 15 - Measurement Data Processing
- 16 - Trends in Electronic Photomicrography
- 17 - Printing techniques and quality
- 18 - Preparing digital images in Adobe Photoshop
- 19 - Trouble Shooting in electronic imaging & output
- 20 - Problems in Photomicrography
- 21 - Presentations using Powerpoint

Course Organizers and faculty

Course Coordinator:

Professor Michael Peres

Biomedical Photographic Communications, Rochester Institute of Technology, USA. E-mail: mrppph@rit.edu

Scientific Coordinators:

Professor Hans Hebert

School of Technology and Health at Royal Institute of Technology; Huddinge E-mail: Ehans.hebert@sth.kth.se

Professor Lennart Möller

Department of Biosciences and Nutrition at Karolinska Institutet, Huddinge. E-mail: lennart.moller@ki.se

Course Assistants:

Biomed and Technical Photographer Jonas Brane, Scanphot, Birmingham. UK E-mail: scanphoto@algonet.se

For more information & course manager:

Research engineer/Scientific Photographer Staffan Larsson

School of Technology and Health at Royal Institute of Technology; Huddinge

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Confocal microscopy faculty

Professor Hjalmar Brismar

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Course Sponsor

TEKNO OPTIK supports this course with microscopes, imaging equipment and their professional staff. www.teknoptik.se

