

# MIC/FMI TRAINING

## MAINTENANCE OF LIGHT MICROSCOPES

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**DATE:** JANUARY 30, 2020  
**TIME:** 9 AM - 5 PM  
**LOCATION:** INSTITUTE OF CELL BIOLOGY, UNIVERSITY OF BERN, ROOM C159, BALTZERSTR. 4, 3012 BERN

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**TRAINERS:** DR. YURY BELYAEV, UNIVERSITY OF BERN (CH)  
DR. FLORIAN EICH, LEICA, MANNHEIM (DE)  
DR. ALEXIA FERRAND, BIOZENTRUM, BASEL (CH)  
DR. LAURENT GELMAN, FMI, BASEL (CH)  
DR. ROLAND NITSCHKE, ALBERT-LUDWIG UNIVERSITY, FREIBURG (DE),  
DR. ARNAUD ROYON, ARGOLIGHT, PESSAC (FR)  
DR. MICHAEL SOMMERAUER, AHF, TÜBINGEN (DE)

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**ORGANIZERS:** DR. L. GELMAN, FMI BASEL.  
DR. Y. BELYAEV, MIC UNIVERSITY OF BERN.  
WITH THE SUPPORT OF:  
MIC OF THE UNIVERSITY OF BERN ([WWW.MIC.UNIBE.CH](http://www.mic.unibe.ch)).  
AND THE PHD SPECIALIZATION CUTTING EDGE MICROSCOPY.

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**MAX NUMBER OF PARTICIPANTS:** 20  
**REGISTRATION:** FREE OF CHARGE, UNTIL JANUARY 15, 2020, HERE.  
**TARGET AUDIENCE:** ANY TECHNICIAN OR SCIENTIST IN CHARGE OF A LIGHT MICROSCOPE.  
**CREDITS:** CERTIFICATE OF ATTENDANCE.

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**BACKGROUND:** MODERN LIGHT MICROSCOPES ARE EXPENSIVE AND SOPHISTICATED DEVICES THAT REQUIRES PERIODIC MAINTENANCE TO PERFORM AT THEIR BEST AND PROVIDE BEST IMAGE QUALITY.

**CONTENT:** CARE OF MAIN MICROSCOPE COMPONENTS: LIGHT SOURCES, OBJECTIVES, FLUORESCENCE FILTERS. MICROSCOPE PERFORMANCE ASSESSMENT AND MAINTENANCE. SAMPLE CONTROLS FOR LIFE SCIENCE MICROSCOPY.

**LEARNING OUTCOME:** PARTICIPANTS WILL BE ABLE TO PERFORM THEMSELVES TESTS ON THEIR CONFOCAL OR WIDE FIELD MICROSCOPES TO DIAGNOSE AND EVENTUALLY FIX MOST COMMON PROBLEMS.

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**SCHEDULE:** SEE NEXT PAGE.

# PROGRAM

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9:00-9:30

WELCOME COFFEE

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9:30-10:00

YURY BELYAEV, UNIVERSITY OF BERN

WHAT CAN GO WRONG ON A MICROSCOPE? (ALIGNMENTS, FIELD HOMOGENEITY, STAGE POSITIONING, Z-DRIVE, LASER POWER, ETC.).

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10:00-10:30

LAURENT GELMAN, FRIEDRICH MIESCHER INSTITUTE, BASEL

POINT-SPREAD FUNCTION MEASUREMENTS FOR WEEKLY DIAGNOSIS OF MICROSCOPE PERFORMANCE.

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10:30-11:00

COFFEE BREAK

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11:00-11:30

ROLAND NITSCHKE, ALBERT-LUDWIGS UNIVERSITY, FREIBURG

OVERVIEW OF MICROSCOPE MAINTENANCE AND DIAGNOSIS TOOLS.

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11:30-12:00

ALEXIA FERRAND, BIOZENTRUM, BASEL

SIGNAL-TO-NOISE RATIO MADE EASY: A TOOL TO ASSESS YOUR CONFOCAL PERFORMANCE.

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12:00-13:00

LUNCH BREAK

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13:00-13:50

HANDS-ON SESSION – ROTATION 1

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14:00-14:50

HANDS-ON SESSION – ROTATION 2

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14:50-15:15

COFFEE BREAK

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15:15-16:05

HANDS-ON SESSION – ROTATION 3

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16:15-17:05

HANDS-ON SESSION – ROTATION 4

# HANDS-ON SESSIONS

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## HANDS-ON SESSION 1:

ARNAUD ROYON (ARGOLIGHT)

MULTIPLE DIAGNOSIS TOOL: THE ARGOLIGHT SLIDE AND THE DAYBOOK SOFTWARE.  
THEODOR KOCHER INSTITUTE, ROOM 015, ZEISS LSM 800.

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## HANDS-ON SESSION 2

JULIEN TOQUANT (ZEISS)

HOW TO SETUP A WIDE-FIELD MICROSCOPE (OBJECTIVE CLEANING, PHASE CONTRAST RING ALIGNMENT,  
KOEHLER ILLUMINATION, DIC SETUP, CAMERA ALIGNMENT, ETC.).  
INSTITUTE OF ANATOMY, ROOM A139, ZEISS AXIOIMAGER M2.

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## HANDS-ON SESSION 3

FLORIAN EICH (LEICA)

DIAGNOSIS AND SETUP OF A CONFOCAL SYSTEM (PINHOLE ALIGNMENT, LASER COLLIMATION, RECORDING OF A  
PSF, CHROMATIC ABERRATIONS, ETC.).  
INSTITUTE OF CELL BIOLOGY, ROOM C260, LEICA SP8 STED.

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## HANDS-ON SESSION 4

MICHAEL SOMMERAUER (AHF)

FILTER CLEANING AND MOUNTING.  
INSTITUTE OF CELL BIOLOGY, ROOM C159.