

Airyscan image of HUVEC cells in red (WGA 594 cell staining) and extracellular vesicles in yellow (DiD lipid staining) recorded on the LSM880 microscope to show uptake of individual vesicles with different sizes. Courtesy S. Kuypers.

COLLABORATION OPTIONS

- Fee-for-Service: performing the relevant experiments for you
- Facility access: once trained, you can perform experiments independently
- Consultancy and training: guiding your experimental set-up and training researchers at your location or at our facilities
- Research collaboration: open for joint grant applications when the project is complementary with our own research lines and goals

COORDINATION

Advanced optical microscopy

- Prof. dr. Jelle Hendrix – jelle.hendrix@uhasselt.be
- Prof. dr. Werend Boesmans – werend.boesmans@uhasselt.be
- Dr. Sam Duwé – sam.duwe@uhasselt.be

Transmission electron microscopy and sample prep

- Prof. dr. Esther Wolfs – esther.wolfs@uhasselt.be
- Prof. dr. Ivo Lambrichts – ivo.lambrichts@uhasselt.be

Incucyte

- Prof. dr. Annelies Bronckaers – annelies.bronckaers@uhasselt.be

RECENT PUBLICATIONS

- Schrimpf et al. Methods 2018, doi:10.1016/j.ymeth.2018.01.022
- Vandenberk et al. J. Phys. Chem. B 122, 15, 4249-4266
- Slenders et al. Chem. Commun., 2018,54, 4854-4857
- Penjweini et al. Journal of Pharmacy and Pharmacology 2017, doi: 10.1111/jphp.12779
- Vanheusden et al. Scientific Reports 2017, volume 7, Article number: 663
- Bogie et al. Multiple Sclerosis Journal 2017. Vol 24, Issue 3, pp. 290 – 300
- Bogie et al. Journal of Experimental Medicine. 2020 May 4;217(5):e20191660.
- García-León JA et al. Stem Cell Reports 2018 Feb 13;10(2):655-672.

Recent list:

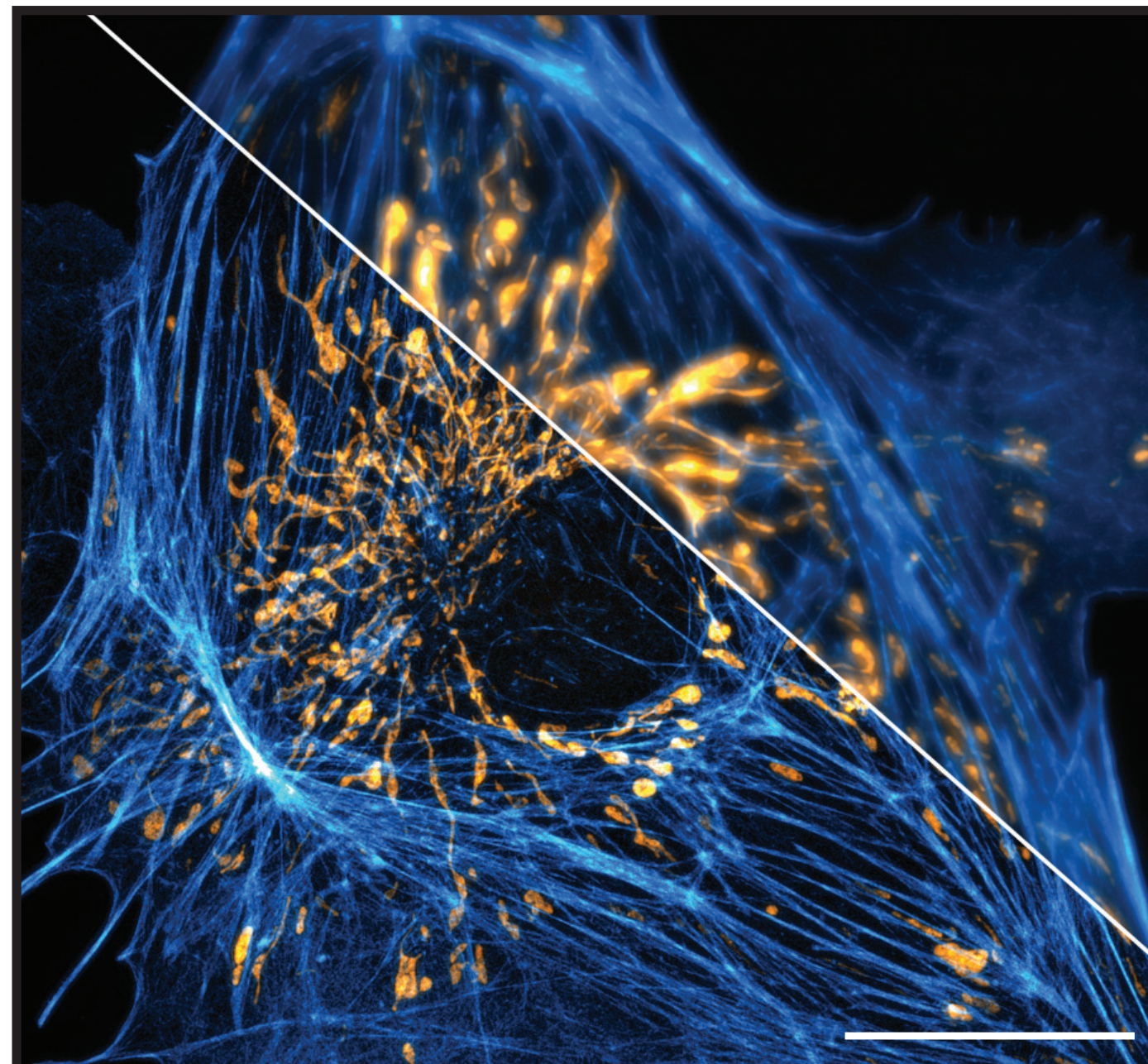
www.uhasselt.be/UH/aomc/usefulinks/publications-making-use-of-AOMC-equipment

BUSINESS DEVELOPER

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Superresolution (bottom) and wide-field (top) fluorescence microscopy of actin filaments (blue) and mitochondria (orange) using structured illumination microscopy (SIM). Scale bar: 20µm. Courtesy S. Duwé.

COLLABORATION OPPORTUNITY

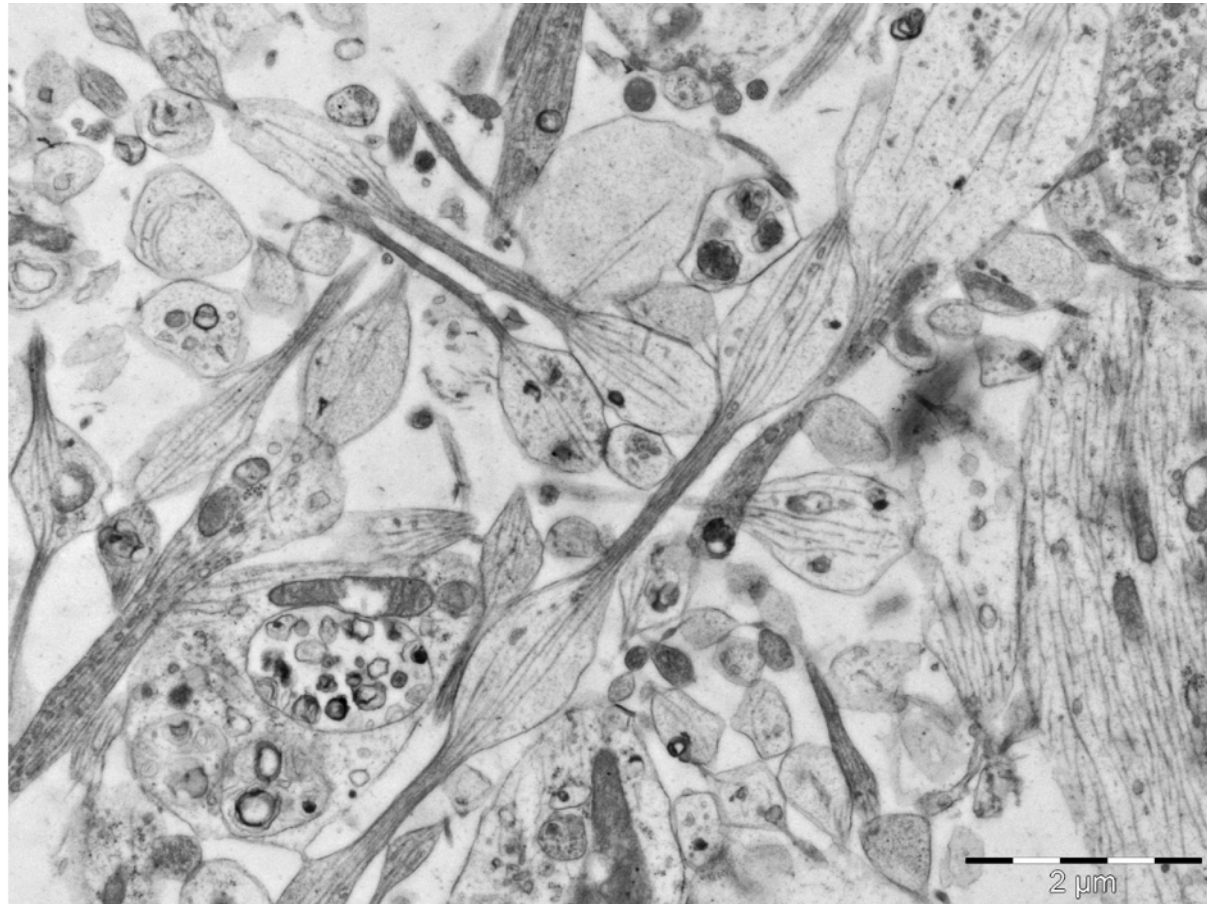
Advanced Microscopy @ UHasselt

- Development of cutting-edge microscopy
- Application of imaging in the life/material sciences
- Imaging consultancy and services



UHASSELT

KNOWLEDGE IN ACTION



TEM image of neuronal cell culture. Courtesy M. Moreels/I. Lambrechts

POSSIBLE APPLICATIONS

- Visualize processes and structures on a multicellular to subcellular scale in living and fixed samples.
[Brightfield, fluorescence, confocal, slidescanner, TEM, Incucyte]
- Investigate molecular interactions and dynamics with high spatio-temporal resolution.
[FRET, correlation spectroscopy methods, single-particle tracking]
- Zoom in on the nanometer scale using super-resolution light microscopy and transmission electron microscopy
[Airyscan, SIM, SMLM (dSTORM, PALM, PAINT), SOFI, TEM]
- Apply non-linear imaging methods for deeper penetration and label-free imaging.
[Two-photon excitation microscopy, SHG imaging, White Light generation]
- Probe cellular activity by combining fluorescence imaging with patch clamping.
[patch clamp fluorometry]
- Study long-term cell proliferation, migration, or survival in a controlled environment
[Incucyte]

RELATED AVAILABLE SERVICES

- Cell culture, incubation, fixation
- Histological preparation of samples
 - » Paraffin embedding and sectioning of soft and decalcified tissues
 - » Resin embedding, ultrathin sectioning and tissue contrast staining
 - » Critical point drying for SEM specimens
 - » Bone microtomy
 - » Standard Histological stainings: Haematoxylin-Eosin, Masson's Trichome, Alizarin red S, Alcian Blue, Cresyl Violet, Oil red O, ...
 - » Immunohistochemistry/-cytochemistry and immunofluorescence

EQUIPMENT

Confocal set-ups

- Zeiss LSM880-Airyscan-NLO
- Zeiss LSM510-META-NLO
- SpectraPhysics MaiTai DeepSee 100 fs pulsed titanium sapphire 690-1050 nm

Widefield set-ups

- Zeiss Elyra PS.1 (widefield, TIRF and super-resolution)
- Nikon Ti2-E (ultrafast widefield with large field-of-view)
- Leica stereo microscope M60 with camera IC80HD (animal facility)

Bright field and fluorescence microscopy

- Leica DM4000LED (with color camera DFC450C)
- Leica face-to-face microscope (multi viewer DM2000 LED with camera)

More details:

www.uhasselt.be/aomc

Slide scanner

Zeiss Axioscan Z1 (automatic slidescanner, both brightfield and fluorescence)

Incucyte Live cell analysis system

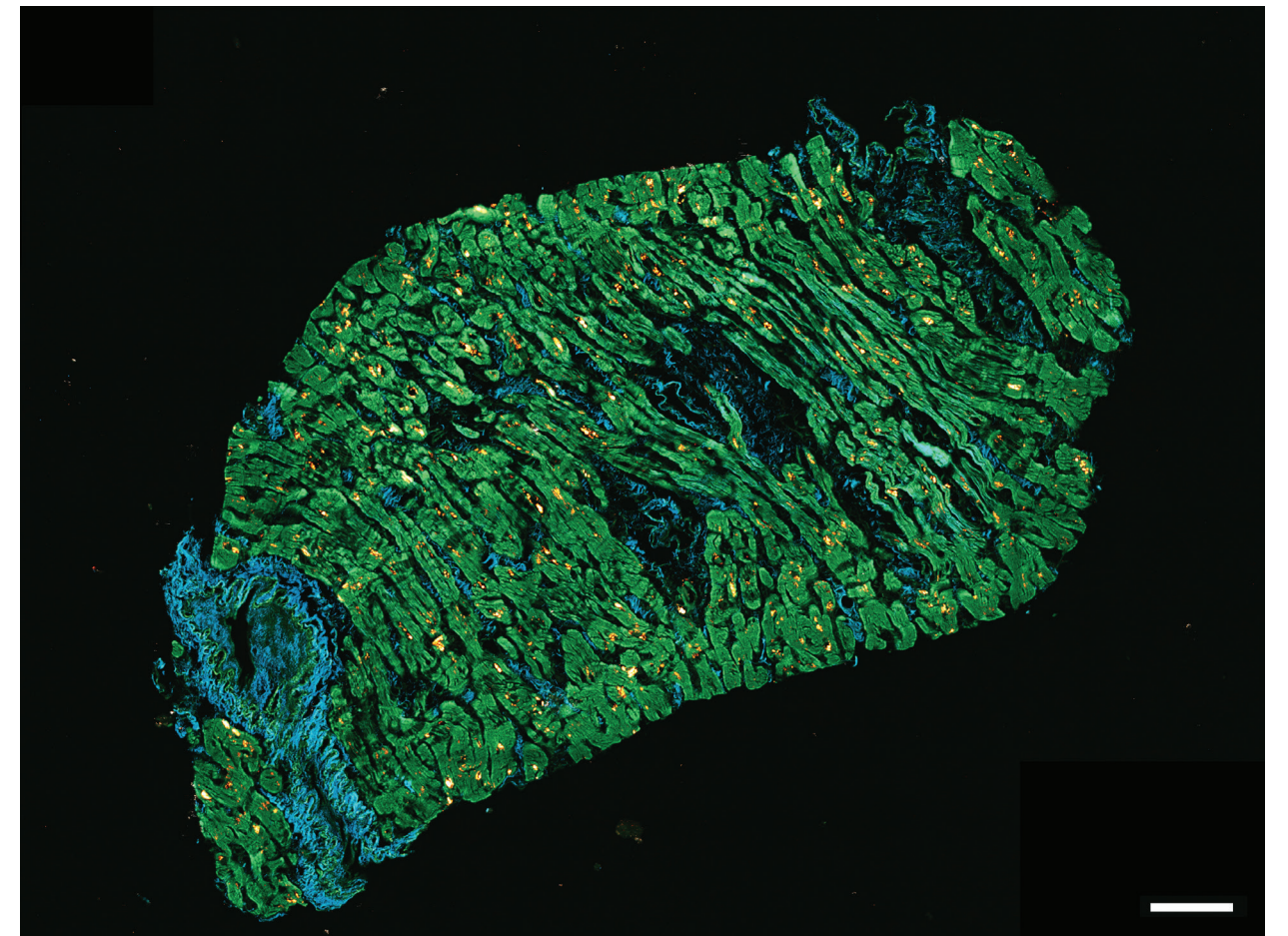
Multiplex assays in 6/24/48 and 96 well plate format; 4x, 10x, 20x objectives, phase-contrast and fluorescence images (in green and red channel)

Electron microscopy

JEOL JEM-1400Flash 120 kV Transmission Electron Microscope (+ Correlative light-electron microscopy)

EM sample prep (Cryostats and microtomes)

- Cryostat Leica 3050
- Cryostat Bright OFT-5000
- Microtome Leica Histocore Biocut
- Sample preparation: Leica EM ICE - high pressure freezer
- Cryosubstitution: Leica EM AFS2 - Automatic Freeze Substitution System
- Ultramicrotome Leica UC6
- Ultrastainer Leica



Combined 2-photon excitation fluorescence microscopy of tissue autofluorescence (green and orange) and second harmonic generation imaging (blue) of heart tissue. Scale bar: 100 μm. Courtesy S. Duwé.