Turn-key & compact multi-modal & multi-photon microscopy solutions.

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Background Prospective Instruments

- Started in 2019.
- Focus on turn-key, compact, easy-to-use multi-modal microscopy solutions.
- Trying to be “vertically” integrated with respect to the light engines, mechanical design and system control.
- Starting an in-house imaging service.

Core competence

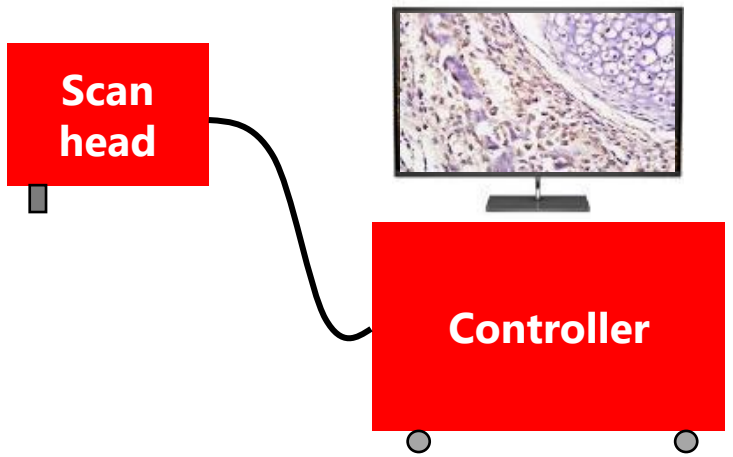
PROSPECTIVE

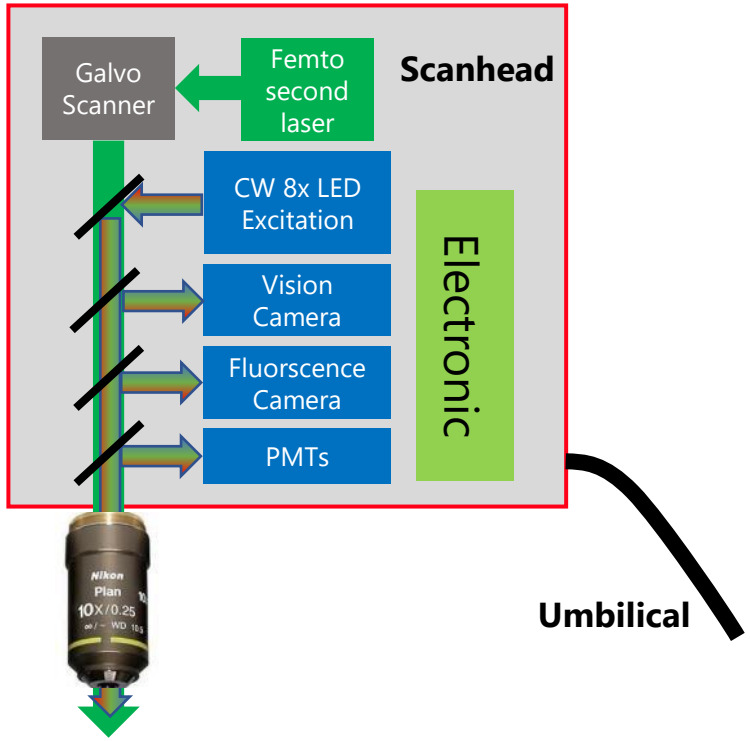
- Opto-mechanical instrument design (microscopes).
- Light source development (Femtosecond lasers, cw excitation lasers, LED-based light engines).
- Embedded hardware & software design of complex mechatronic systems.
- Providing OEM solutions for multi-photon microscopy engine integration.
- High resolution microscopy techniques.
- Label free imaging, metabolic visualization, cell microenvironment.
- Deep learning for image analysis.
- Medical device development for clinical applications.

MPX – series multi-photon microscope

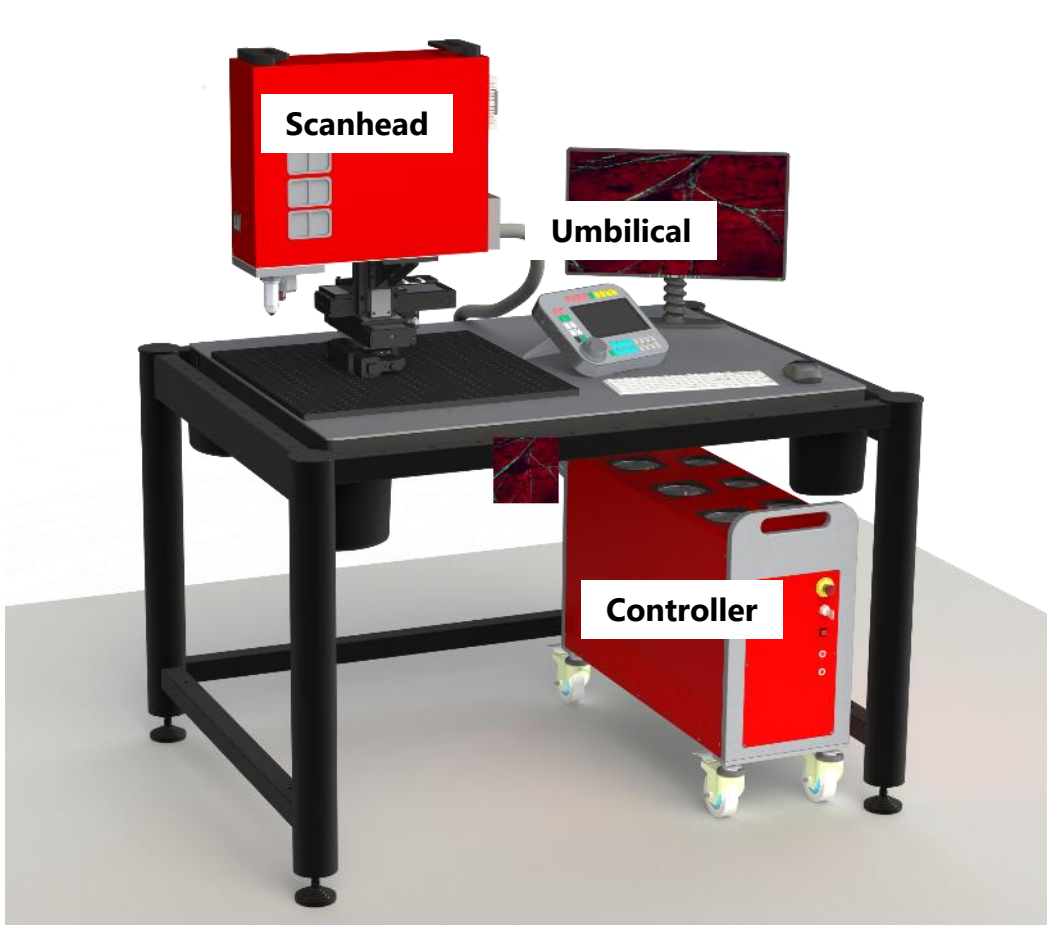
PROSPECTIVE

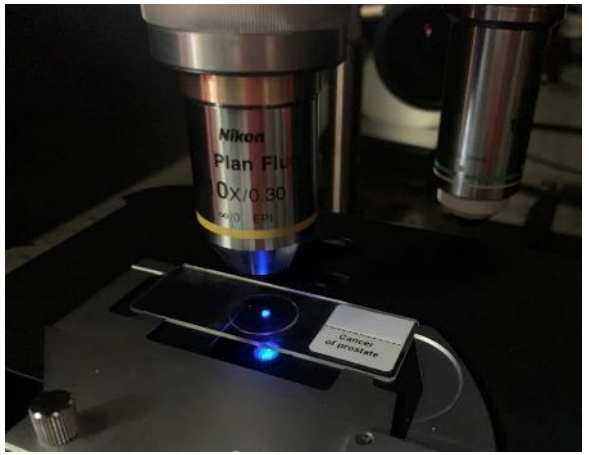
1. Combining complementary modalities into one compact and easy to use device: Multi-photon & single-photon fluorescence imaging, brightfield imaging.
2. Freely-moveable scanhead, all-integrated, no alignment, easy to operate and to install.
3. Mosaic imaging: from mm to cm scale (stitching).
4. Epi-detection in backscatter direction

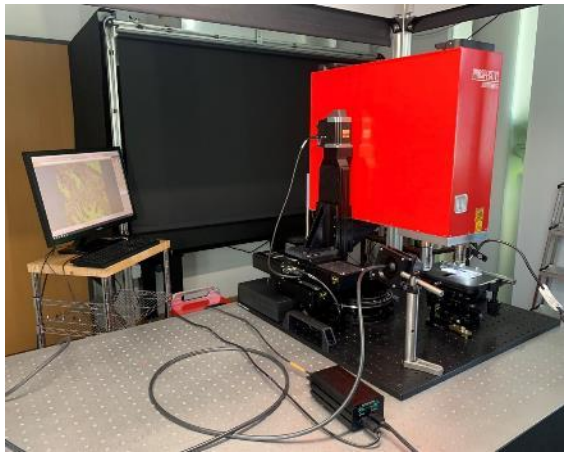


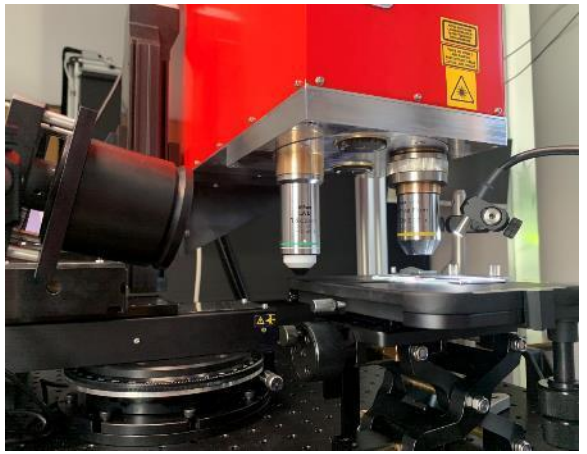


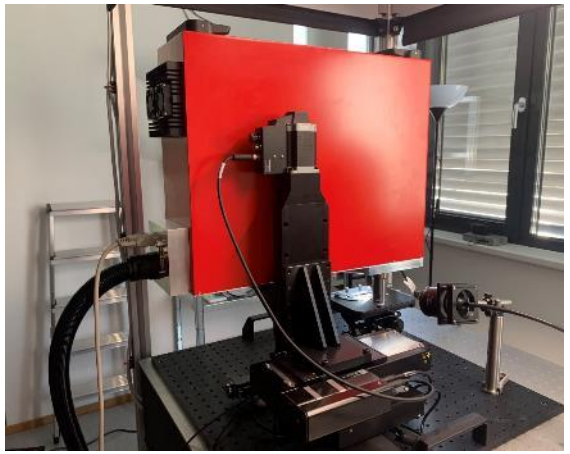
Turn-key compact multi-photon imaging platform – MPX-series





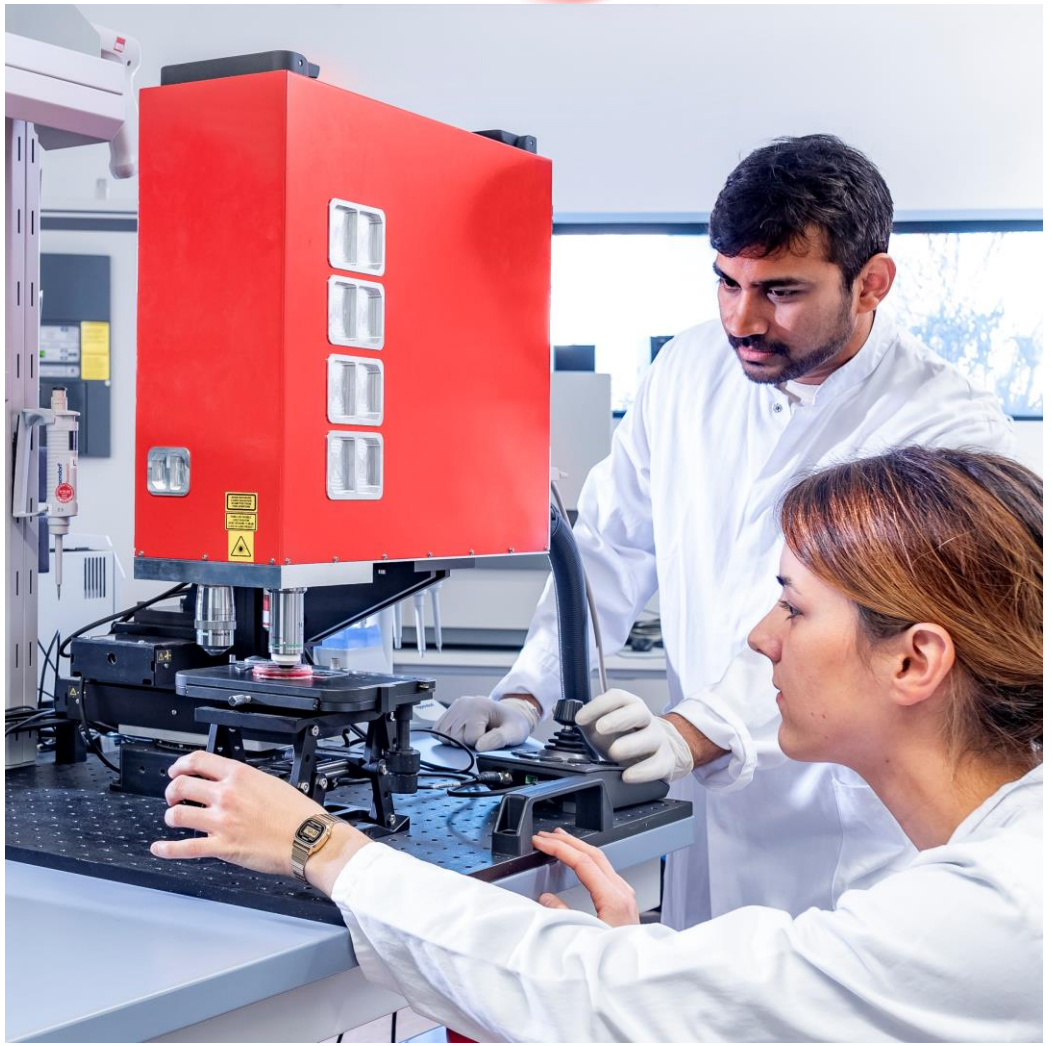






MPX-series fits on a bench in a “normal” lab

PROSPECTIVE



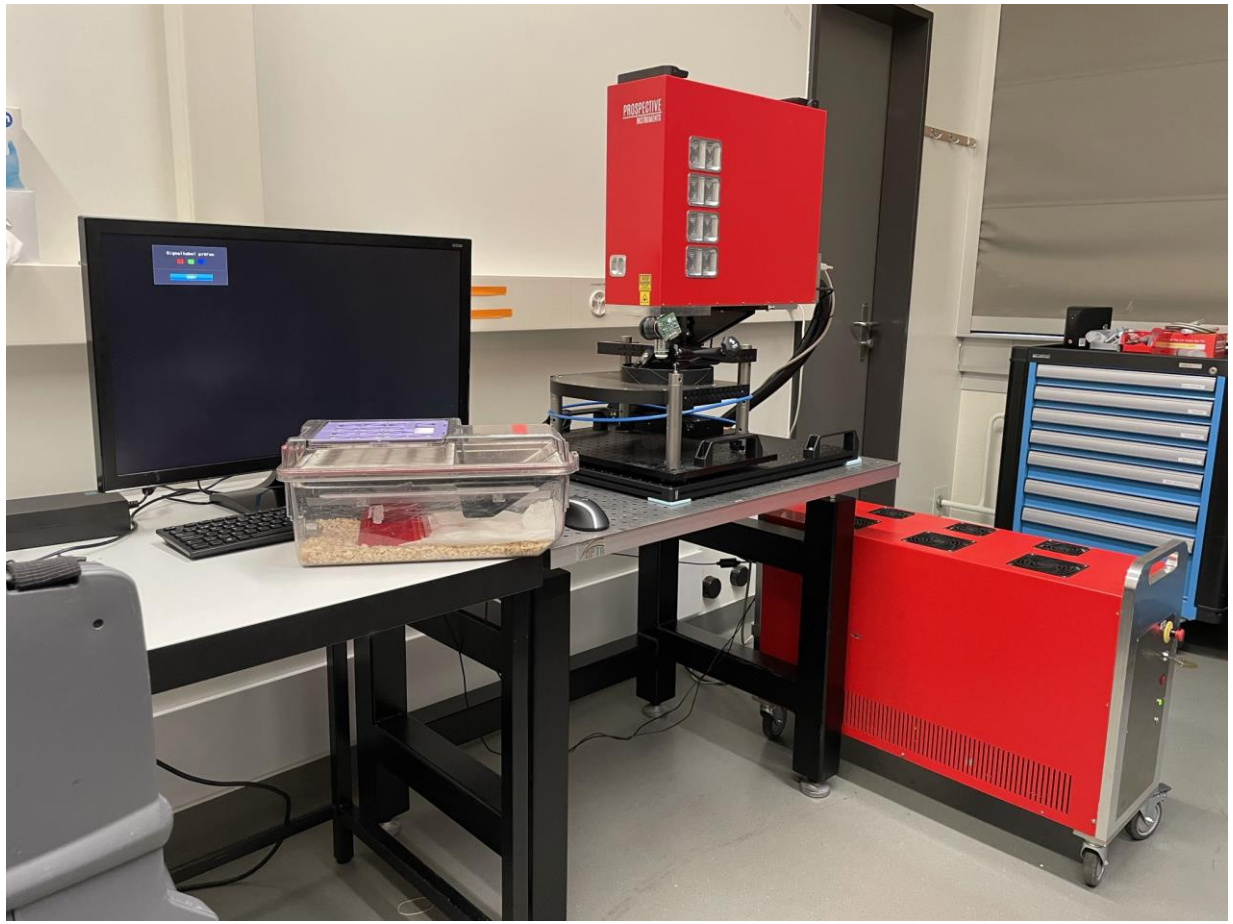
Worlds first multi-photon microscope in home-office during COVID-19 lockdown

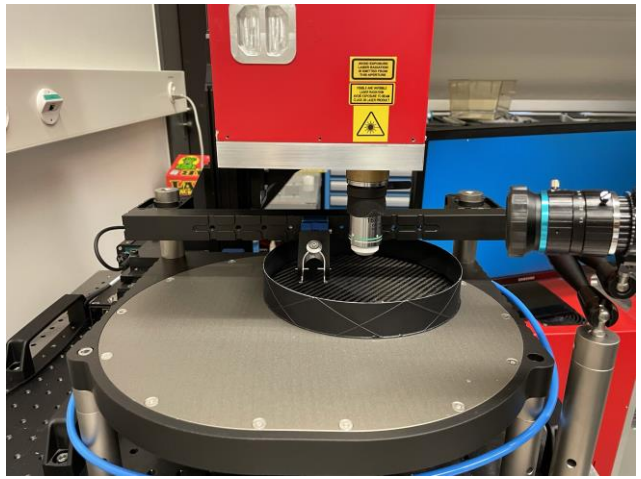
PROSPECTIVE

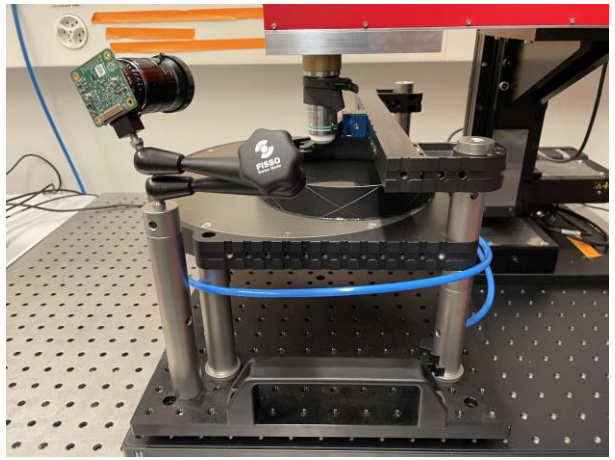
Live animal imaging – easy and quick setup

PROSPECTIVE

Microscope can go to the animal (farm) – not vice versa.





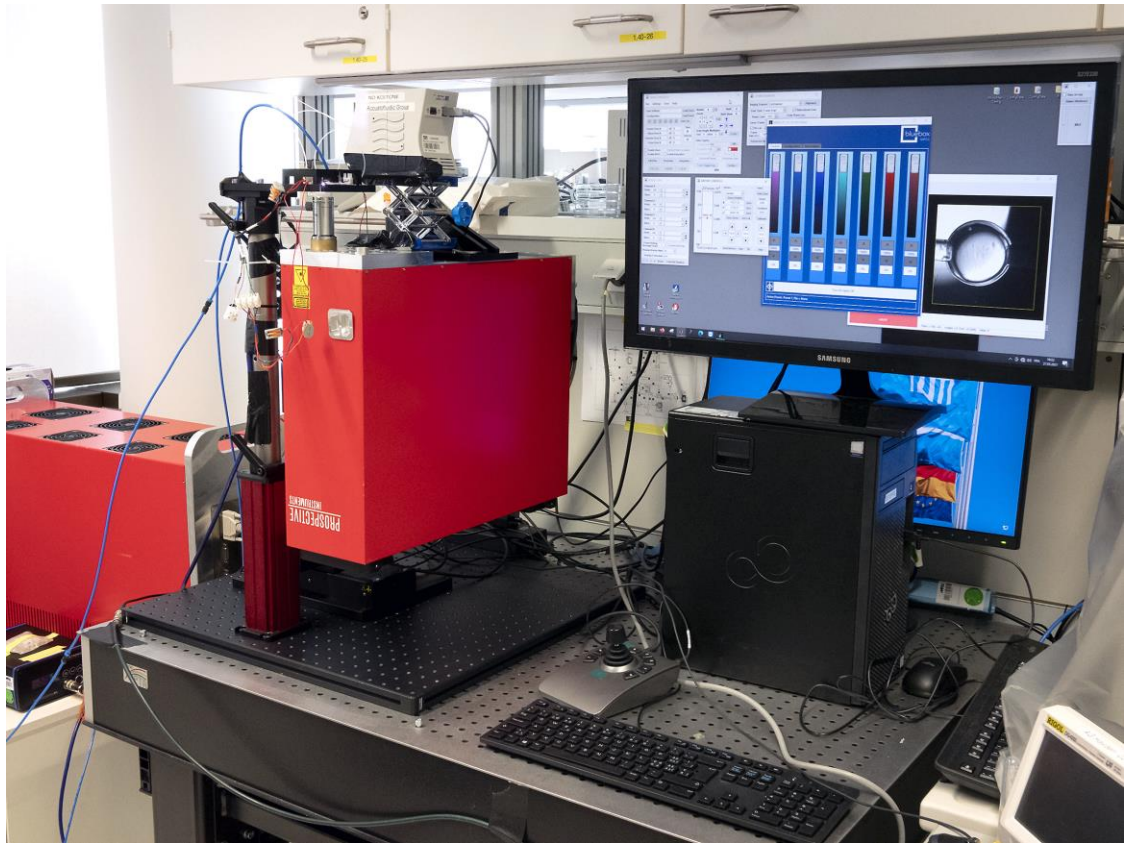


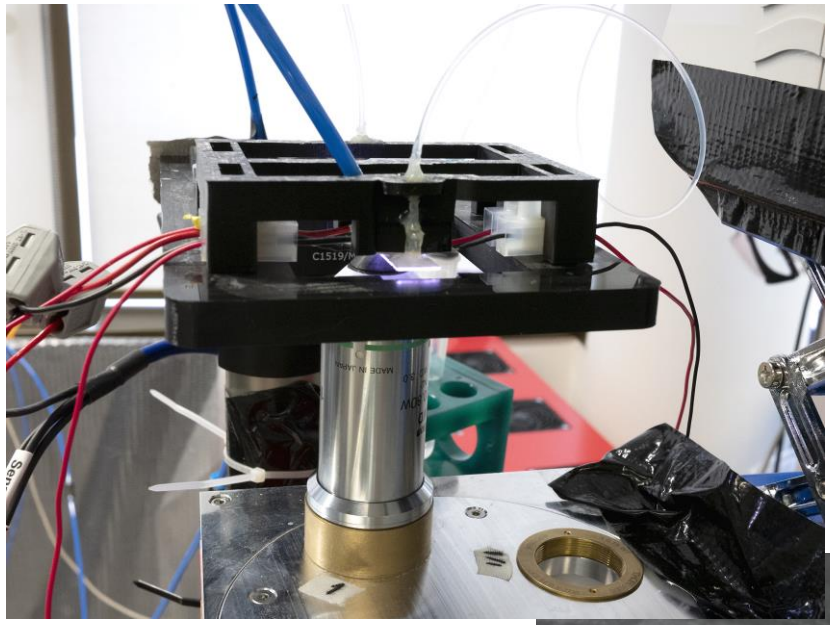
Flexibility in upright & inverted imaging

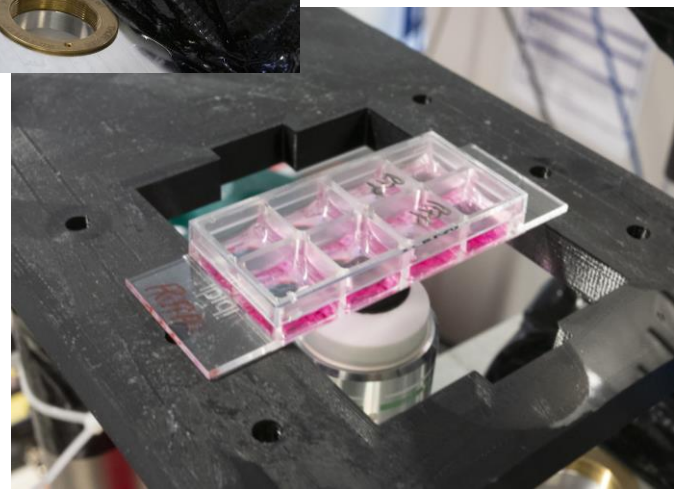
About 5 minutes of work to turn it into a inverted configuration!

Inverted configuration

PROSPECTIVE







All-in-one device for medical applications

In-house imaging service

PROSPECTIVE

Single-photon fluorescence setup:
Upright and inverted configuration, various illumination sources, variable filter sets, high sensitivity sCMOS cameras.

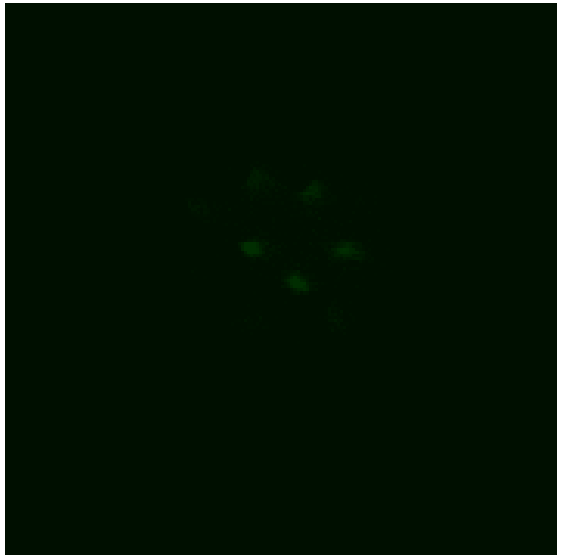
Multi-photon fluorescence setup:
Upright and inverted configuration, fs laser light sources, 2P, 3P, SHG THG imaging, resonant galvo-galvo scanning.

Whole slide imaging (WSI) setup:
Automatic slide scanning, fully automated slide loading (up to 200 slides) in single-photon and multi-photon configuration.

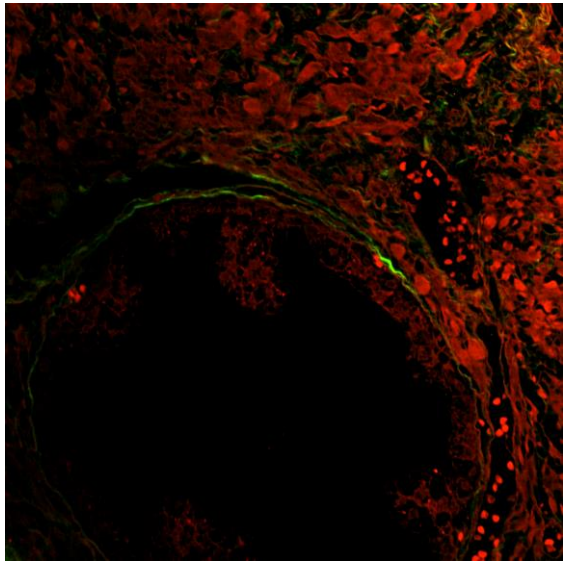
Lightsheet MesoSPIM setup:
Fully automized light sheet with 405 nm, 488 nm and 638 nm excitation laser lines, FOV 10 mm

Additional equipment:
Motorized stage for tiling and z-stack imaging, piezo z-stage for high precision z-stacking, various objectives.

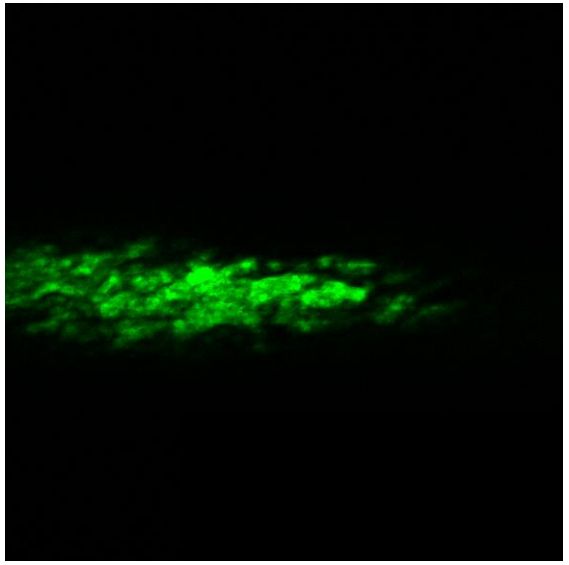
Pollen z-stack



Prostate

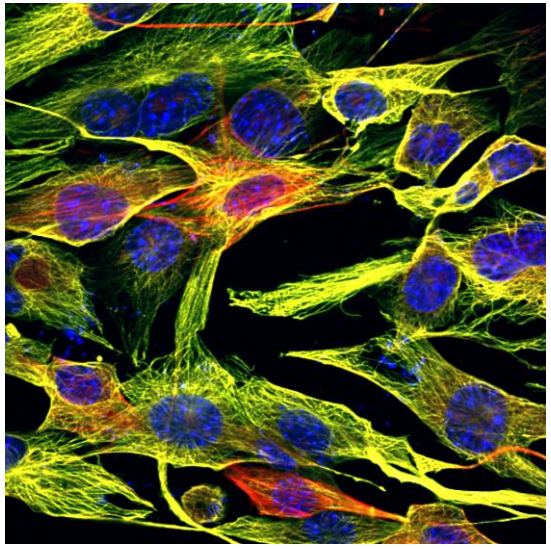


Artificial artery z-stack

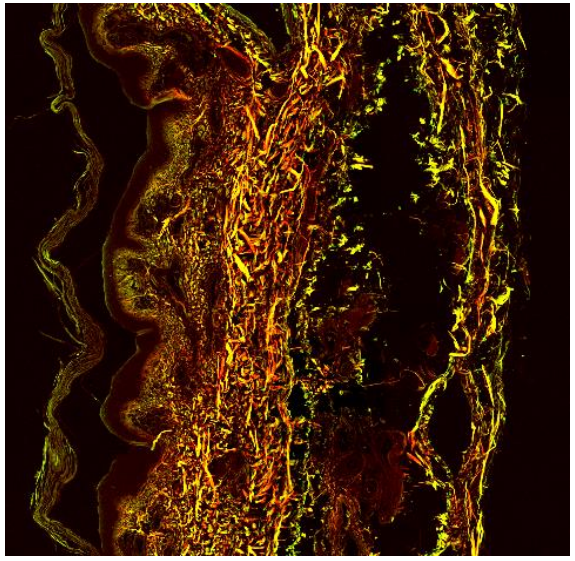


PROSPECTIVE

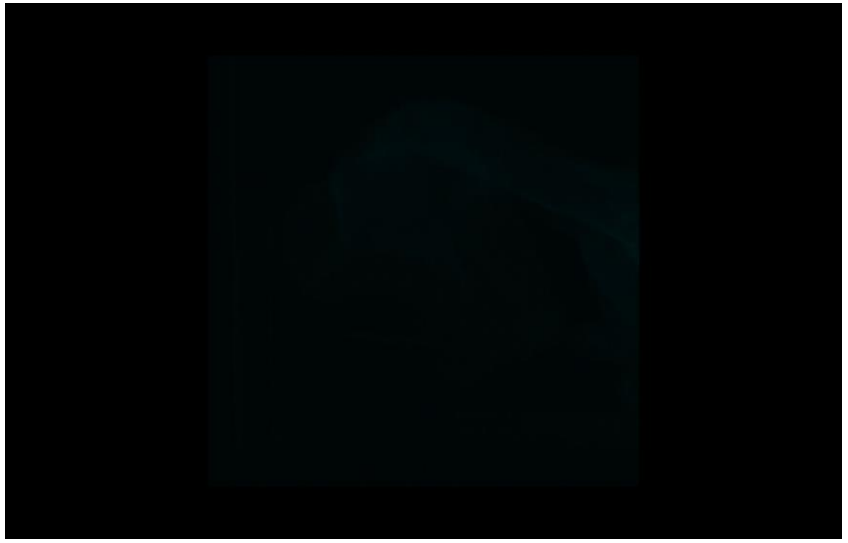
Mouse fibroblasts



Human skin



Chicken embryo



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