

ACAM

Core facility UAntwerp
Active in Health & Biology / Environment

ANTWERP CENTRE FOR ADVANCED MICROSCOPY



Seeing is believing! Using advanced microscopy, ACAM literally zooms in on the molecular processes of cells and tissues to discover what goes wrong in pathological conditions. Adopting a systematic and quantitative imaging-based approach, ACAM takes preclinical research to a higher level. Dr. Isabel Pintelon, coordinator of ACAM, explains:

“Our core facility provides high-quality microscopy of biological materials such as cells, tissues and organoids. The imaging techniques we use enable advanced, quantitative cell biological and histological research aimed at detecting, defects in neurodegenerative disorders or unexpected side effects of cancer therapies, among other things.

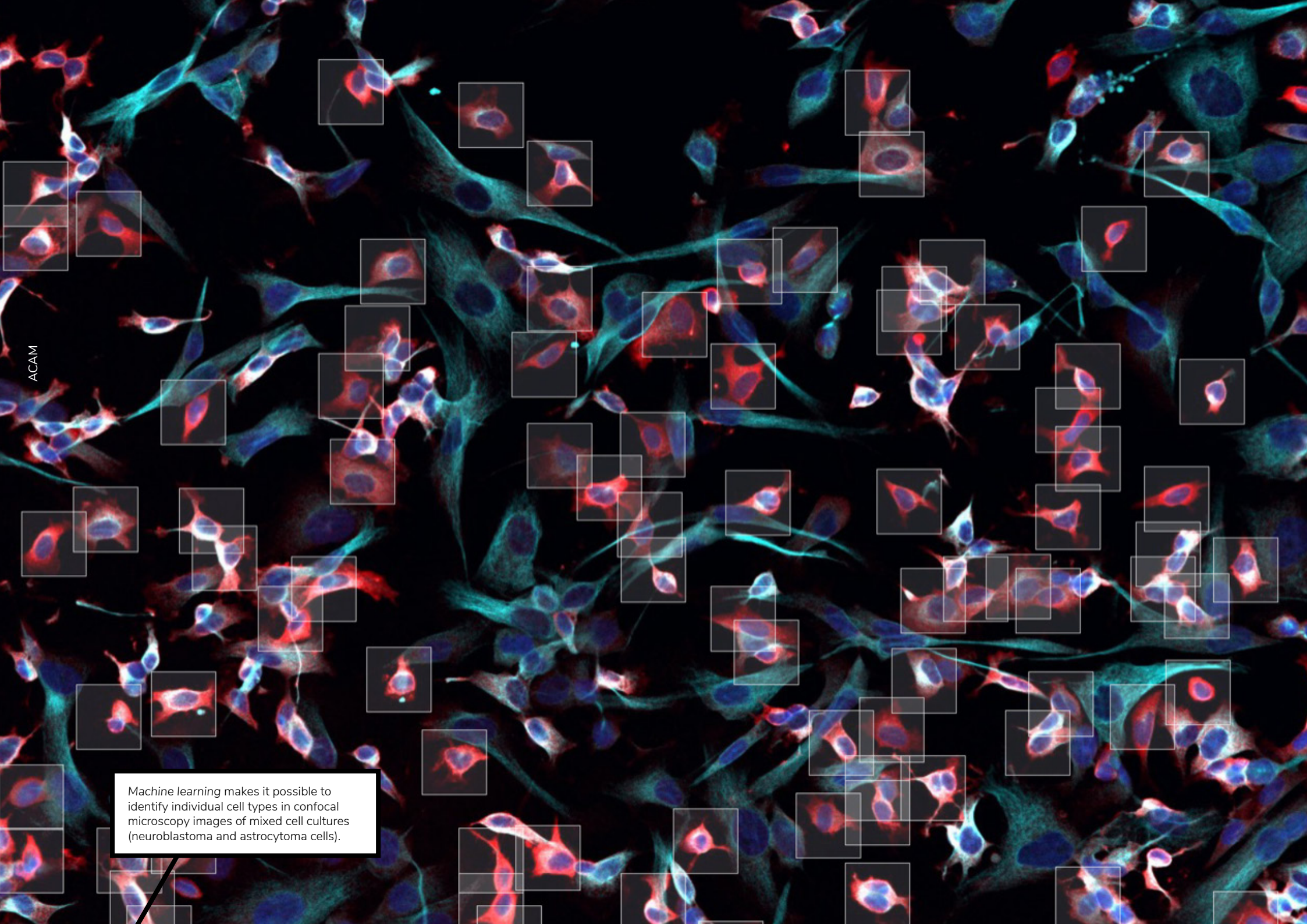
Based on a company's needs, we unfold a complete strategy, encompassing experimental design, sample preparation, imaging and downstream image and data analysis. As founding member of the international infrastructure consortium Flanders Bio-Imaging and valorization platform for image-based biomarkers IMARK, ACAM can offer tailored imaging solutions from molecule to man, animal or plant.

ACAM stands for innovation. For example, we are developing new techniques to image large biological samples in their intact state, to overcome the limited resolution of light microscopy or to comprehensively document molecular heterogeneity in cells or tissue. We are also strongly committed to automation and use machine learning for robust image analysis (e.g., for cell phenotyping) and intelligent (i.e.,

content-aware) imaging workflows. We combine innovation, state-of-the-art equipment and extensive expertise to offer companies grade A service.”

Do you think ACAM can help your company? Please contact Dr. Isabel Pintelon.

► Our core facility provides high-quality microscopy of biological materials.



ACAM

Machine learning makes it possible to identify individual cell types in confocal microscopy images of mixed cell cultures (neuroblastoma and astrocytoma cells).

ACAM is ...

Innovative systems microscopy · Imaging from the nano to the meso scale · Optimized quantitative microscopy workflows · Quantitative and qualitative imaging · Advanced cell and tissue image analysis · Innovative microscopy techniques · Meticulous sample preparation · Unbiased cell profiling · Visualization of pathophysiological cellular processes · In toto microscopy

▶ **ACAM possesses extensive know-how and their expertise perfectly matches the needs of our projects. When calling upon the services of the ACAM team, we are assured of quality and flexibility... which is exactly what we want.**

Quote from ElmediX NV

Research groups and expertise

ACAM brings together world-class expertise in every aspect of the microscopy workflow: from planning, setup and sample preparation to image recordings, image and data analysis. The researchers within ACAM have ample experience in sample preparation and histological staining techniques, including immunocytochemistry, *in situ* hybridization, selection of molecular probes and automation of microscopy and image analysis, resulting in a unique and wide range of comprehensive pipelines.

IMARK

ACAM is part of the IOF valorization consortium IMARK, which exploits and develops image-based biomarkers to accelerate precision medicine.

μNEURO

ACAM is a member of the Centre of Excellence μNEURO, which conducts translational neuropathological research to identify pathogenic mechanisms in neurodevelopmental and neurodegenerative disorders on a cell-to-organism scale. μNEURO brings together experts in basic, preclinical and clinical research into neurological diseases and experts in quantitative multimodal imaging and analysis.

Euro-Biolmaging

Together with other Flemish knowledge institutions, ACAM forms the Flemish node 'Flanders Biolmaging' (FBI) within the European infrastructure consortium Euro-Biolmaging. This network aims to provide open access to a wide range in imaging technologies, expertise, training and data services in biological and biomedical imaging.

Collaboration is possible through...

Collaborative research · Contract research · PhDs · Use of equipment and facilities · Customized training · Service contracts

Unique features of our equipment

ACAM offers microscopy from the nano to the meso scale with a wide range of microscopes and technologies: automated brightfield and fluorescent microscopes for high-content screening, advanced confocal platforms with super-resolution options, light sheet microscopy of tissues and small organisms, laser microdissection and electron microscopy (TEM, SEM, Cryo-EM).

ACAM follows the latest developments in the field of imaging and continuously invests in cutting-edge equipment. Flagship technologies include high-throughput screening, ultra-fast live cell imaging, light sheet microscopy and (cryo-)electron microscopy.

ACAM not only focuses on microscopy, but also specializes in all aspects of the imaging process and offers complete workflows including customized sample preparation, automated intelligent microscopy and quantitative image analysis.

Optimized workflows are available for phenotyping of cells upon screening perturbagens (compounds, crisprs...), studying neuronal connectivity in cell culture, organotypic slices and whole brain, functional imaging (calcium and voltage) in neurons and cardiomyocytes, quantification of aberrant protein load in the neurodegenerative brain, 3D imaging of cerebral organoids or zebrafish, characterization of extracellular vesicles, ultrastructural study of proteins.



Contact ACAM

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