
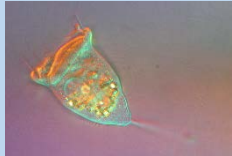
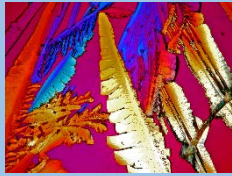
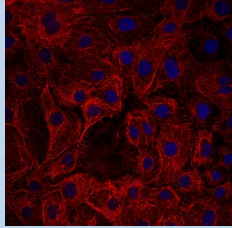
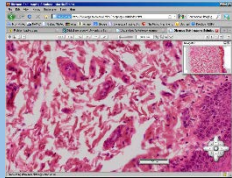
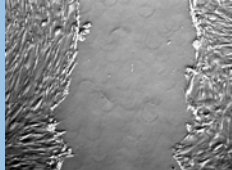
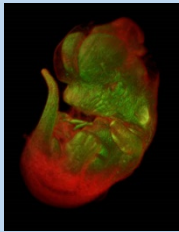
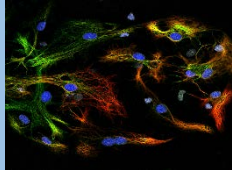

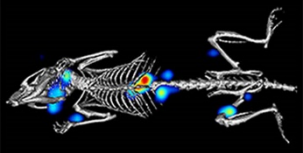
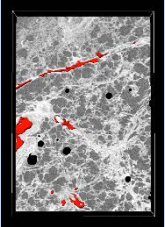



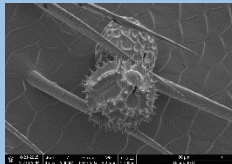
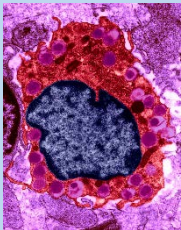

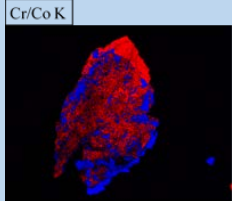
Imaging Facilities at University of Southampton and the University Hospital NHS Foundation Trust


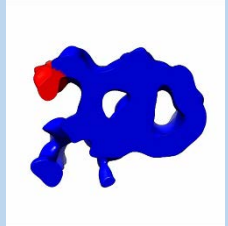
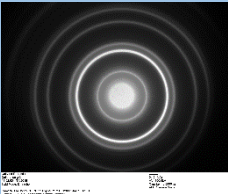
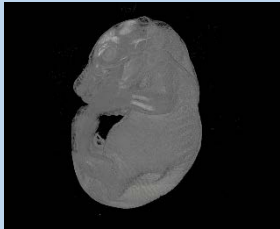
(For locations & contact details see final page)

Microscope	Best resolution	Use	Types of specimen	Imaging method	Useful websites	Images
Olympus SZX9 dissecting microscope	~50 μm	General overview of specimens; tissue dissection	Live/ dead bulk specimens (>0.25 mm)	Light	BIU website Olympus website	
Nikon 80i bright field/ DIC microscope	~200 nm	Stained/ unstained tissue on slides	Sections; small specimens (cells, tissues, small organisms)	Light	BIU website Explanation Nikon website	
Nikon E600 polarising light microscope	~200 nm	Stained/ polarising tissue on slides	Sections; small specimens; crystals; anisotropic materials	Light	BIU website Explanation Nikon website	
Leica DMRB fluorescence microscope	~200 nm	Fluorescently stained tissue on slides	Fluorescent sections; small specimens (cells, tissues, small organisms)	Light	BIU website Explanation Leica website	

Olympus DotSlide virtual slide scanning microscope (x3)	~200 nm	Digital automated slide scanning	Tissue on slides; tissue microarrays (cells, tissues, small organisms)	Light	BIU website YouTube video	
Olympus VS110 high throughput virtual slide scanning microscope	~200 nm	Digital automated slide scanning (up to 100 per run; brightfield and/or fluorescence)	Tissue on slides; tissue microarrays (cells, tissues, small organisms)	Light	BIU website Olympus website	
Olympus IX81 microscope for live cell imaging	~500 nm	Inverted microscope system with brightfield, phase contrast and fluorescence imaging within an incubator for live cell imaging	Live cell/ tissue cultures	Light	BIU website Explanation Olympus website	
LaVision light sheet microscope		3D imaging of fluorescently labelled tissue	Tissues/ cells/ whole specimens up to 10 mm cubed; fixed & living	Light	BIU website Explanation LaVision	
Leica SP5 confocal microscope	~200 nm	Generation of sharply focussed fluorescent and/ or reflected light images	Tissues/ cell cultures/ whole specimens up to ~150 μm thick; fixed/ live specimens; high speed imaging for dynamic processes	Light	BIU website Explanation Leica website	

Leica SP8 confocal microscope	~200 nm	Generation of sharply focussed fluorescent and/ or reflected light images	Tissues/ cell cultures/ whole specimens up to ~150 μm thick; fixed/ live specimens; high speed imaging for dynamic processes	Light	BIU website Explanation Leica website	
MILabs X-ray U-CTXHR-OI Integrated X-ray and optical tomography system for whole animal <i>in vivo</i> imaging	~13 μm (x-ray) ~2 mm (light)	Combined system for 3D imaging of small (anaesthetised) animals; x-ray imaging uncontrasted and/or fluorescent imaging using injected fluorophores	Living whole animals (mice, rats, small rabbits)	X-rays Light	Explanation	
Nikon Med-X micro-CT	~ 5 μm	Non-destructive 3D imaging of whole specimens with low contrast	Preserved biological tissue, organs; histological wax blocks	X-rays	BIU website μ-VIS website Explanation	
Nikon Med-X 2 micro-CT	~ 5 μm	Non-destructive 3D imaging of whole specimens with low contrast	Preserved biological tissue, organs; histological wax blocks	X-rays	Due for delivery August 2019 BIU website μ-VIS website Explanation	

FEI Quanta 200 scanning electron microscope	5 nm	Topographical imaging of whole specimens	Whole dried specimens for surface examination; Tissues/ cells/ whole specimens up to 40 mm	Electrons	BIU website Explanation FEI website	
FEI Quanta 250 scanning electron microscope	2.1 nm	Topographical imaging of whole specimens	Whole dried specimens for surface examination; Tissues/ cells/ whole specimens up to 40 mm	Electrons	BIU website Explanation FEI website	
FEI Tecnai 12 transmission electron microscope	0.3 nm	High resolution imaging of cellular & subcellular detail	Preserved, resin embedded and sectioned material (tissues, cells, organelles) small whole specimens (viruses, nanoparticles)	Electrons	BIU website Explanation FEI website	
Hitachi HT7700 transmission electron microscope	0.3 nm	High resolution imaging of cellular & subcellular detail	Preserved, resin embedded and sectioned material (tissues, cells, organelles) small whole specimens (viruses, nanoparticles)	Electrons	BIU website Explanation Hitachi website	
EDAX & Oxford Instruments x-ray microanalysis mounted on the FEI Quanta 200 & the FEI Tecnai 12	20 nm (SEM) 5 nm (TEM)	Elemental content of specimens	Bulk specimens on the SEM; sectioned material/ small whole specimens on the TEM	Electrons	BIU website Explanation Oxford Instruments website	

<p>Gatan 3View mounted on FEI Quanta 250</p>	<p>10nm</p>	<p>3D electron microscope of cells & subcellular detail</p>	<p>Preserved, resin embedded blocks of tissue (tissues, cells, organelles)</p>	<p>Electrons</p>	<p>BIU website Gatan website</p>	
<p>Electron tomography on the Hitachi HT7700</p>	<p>1 nm</p>	<p>High resolution 3D electron microscopy of sub-cellular detail</p>	<p>Preserved, resin embedded and sectioned material (cell organelles)</p>	<p>Electrons</p>	<p>BIU website Explanation</p>	
<p>Electron diffraction on the Hitachi HT7700</p>	<p>0.3 nm</p>	<p>Creation of lattice pattern identify the composition of crystal structure</p>	<p>Thin crystals, foils</p>	<p>Electrons</p>	<p>BIU website Explanation</p>	
<p>Image processing & analysis</p>		<p>Processing of data sets for analysis, presentation, publication</p>	<p>2d & 3D data sets acquired from any microscope platform</p>		<p>BIU website</p>	

Facility	Contact	Location	Notes
Biomedical Imaging Unit	Anton Page a.page@soton.ac.uk	Level B, Southampton General Hospital	