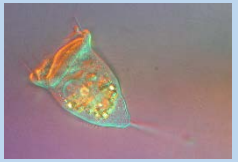
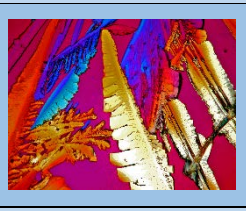
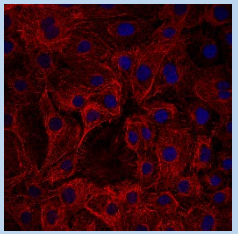
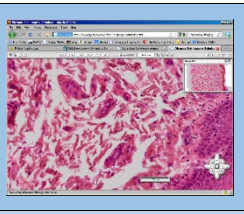
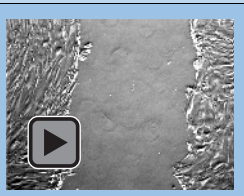
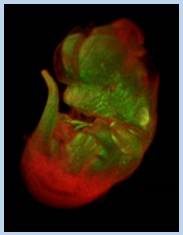
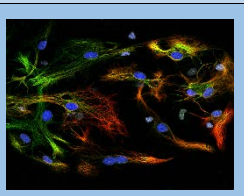
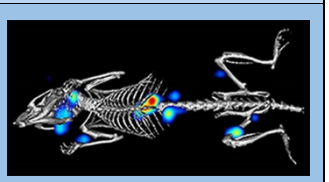
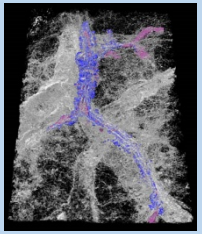
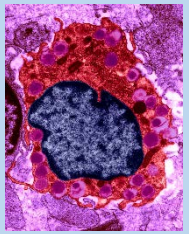
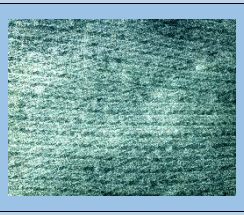
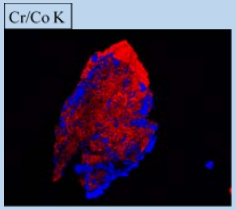
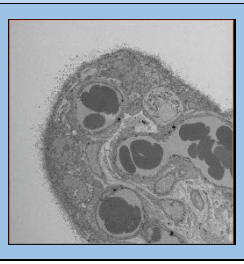
Imaging Facilities at University of Southampton and the University Hospital NHS Foundation Trust

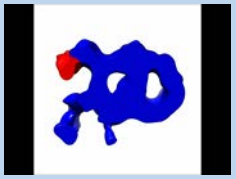
(For locations & contact details see final page)

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	Light	BIU website Olympus website	
Nikon 80i bright field/ DIC microscope	~200 nm	Stained/ unstained tissue on slides	Sections; small specimens	Light	BIU website Explanation Nikon website	
Nikon E600 polarising light microscope	~200 nm	Stained/ polarising tissue on slides	Sections; small specimens	Light	BIU website Explanation Nikon website	
Leica DMRB fluorescence microscope	~200 nm	Fluorescently stained tissue on slides	Fluorescent sections; small specimens	Light	BIU website Explanation Leica website	

Olympus DotSlide virtual slide scanning microscope (x3)	~200 nm	Digital automated slide scanning / virtual microscopy system	Tissue on slides; tissue microarrays	Light	BIU website Olympus website YouTube video	
Olympus VS110 high throughput virtual slide scanning microscope	~200 nm	Digital automated slide scanning / virtual microscopy system	Tissue on slides (up to 100 per run; brightfield and/or fluorescence	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	Tissue/ cells/ whole specimens up to 1 cm cubed; fixed & living	Light	BIU website Explanation LaVision	
Leica SP5 confocal microscope	~200 nm	Generation of sharply focussed fluorescent and/ or reflected light images	Tissue/ 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	Tissue/ cell cultures/ whole specimens up to ~150 µm thick; fixed/ live specimens; high speed imaging for dynamic processes	Light	BIU website Explanation Leica website	
In vivo whole animal imaging	~20 µm (x-ray) ~2 mm (light)	Combined system for 3D imaging of small (anaesthetised) animals	Living whole animals: x-ray imaging uncontracted; fluorescent imaging using injected fluorophores	X-rays Light	Machine out to tender – installation Nov 2019	
Nikon Med-X micro-CT	~ 5 µm	Non-destructive 3D imaging of whole specimens with low contract	Preserved biological tissue, organs; histological wax blocks	X-rays	BIU website µ-VIS website	
Nikon Med-X 2 micro-CT	~ 5 µm	Non-destructive 3D imaging of whole specimens with low contract	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	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	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; small whole specimen (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; small whole specimen (viruses, nanoparticles)	Electrons	BIU website Explanation Hitachi website	
EDAX & Oxford Instruments x-ray microanalysis mounted on electron microscope	20 nm (SEM) 5 nm (TEM)	Elemental content of specimens	Bulk specimens on the SEM; sectioned material/ small whole specimen on the TEM	Electrons	BIU website Explanation Oxford Instruments website	
Gatan 3View mounted on FEI Quanta 250	10nm	3D electron microscope of cells & subcellular detail	Preserved, resin embedded blocks of tissue	Electrons	BIU website Gatan website	

Electron tomography mounted on Hitachi HT 7700	1 nm	High resolution 3D electron microscopy of sub-cellular detail	Preserved, resin embedded and sectioned material	Electrons	BIU website Explanation	
Electron diffraction mounted on Hitachi HT 7700	0.3 nm	Creation of lattice pattern identify the composition crystal structure	Thin crystals, foils	Electrons	BIU website Explanation	
Image processing & analysis		Processing of data sets for analysis, presentation, publication	2d & 3D data sets acquired from any microscope platform		BIU website	

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